



Falls Prevention

Best Practice Guidelines

for Public Hospitals and
State Government Residential
Aged Care Facilities incorporating
a Community Integration Supplement

Quality Improvement
and Enhancement Program
Version 3, 2003



Queensland Government
Queensland Health



Foreword

Falls and fall-related injuries are national and state health priority areas. Falls in people aged 65 years and over are of particular concern due to their frequency, associated morbidity and mortality, and cost to the health care system and community. As well as the effects on the individual as a result of a fall, at an organisational level there is also the issue of the failure to provide duty of care, and subsequent risks of litigation.

Queensland Health has recognised this national priority through the funding of the Quality Improvement and Enhancement Program's Falls Prevention in Public Hospitals and State Government Residential Aged Care Facilities Project.

A number of settings have been identified for targeting falls prevention in older people, as prevention offers the opportunity for significant health gains.

The *Falls Prevention Best Practice Guidelines for Public Hospitals and State Government Residential Aged Care Facilities* are intended to be used by Queensland Health staff as a basis for best practice in preventing falls and fall-related injury in the over 60 years age group.

The Best Practice Guidelines that have been developed by this program identify three key components of falls prevention programs:-

- risk identification,
- falls prevention, and
- injury prevention strategies.

These guidelines support the *Health Outcomes Plan – Injury Prevention and Control 2000 – 2004*; the *National Injury Prevention Plan 2001 – 2003* and the *Statewide Action Plan: Falls Prevention in Older People 2002 – 2006*.

I am pleased to endorse these guidelines and ask that Queensland Health staff become familiar with this document when striving to achieve a high quality of care in the prevention of falls and fall-related injuries.

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Introduction

Background

The *Falls Prevention Best Practice Guidelines* are intended to be used by Queensland Health staff as a basis for best practice in preventing falls in public hospitals and State Government residential aged care facilities. The longer-term goal is to achieve a significant reduction in falls and fall-related injuries of people admitted to public hospitals and living in State Government residential aged care facilities in Queensland. These guidelines are the first stage towards this goal, and aim to achieve standardization of high quality of care in falls prevention, standardized effective risk management approaches to falls prevention, and a reduction of adverse incidents and subsequent patient/resident discomfort and associated costs.

The Quality Improvement and Enhancement Program

Queensland Health has developed a Quality of Health Services framework designed to provide safe, effective and efficient health services which continuously improve through systematic enhancements. This framework was developed in the context of national initiatives in quality improvement and enhancement, in the context of strategic developments within Queensland Health and Queensland public administration, and in the context of State-funded initiatives in capacity development, systems development, and services enhancement. The Falls Prevention in Public Hospitals and State Government Residential Aged Care Facilities Project is one of 23 program areas of the Quality Improvement and Enhancement Program 1999 – 2004 which is being progressed with funding from the Australian Health Care Agreement: 1998-2003.

Literature Review

The significance of falls as a health issue is demonstrated by a review of the literature. Space permits for a brief summary of the literature in relation to falls in the elderly. For a more comprehensive review visit the Queensland Health website.

Falls Incidence

What is a fall? A fall is a sudden unanticipated change downward in body position with or without physical injury (Hendrich et al, 1995).

Falls represent one of the major trends in incident monitoring on a national scale. Falls are the leading cause of injury death among people 65 years and over [1]. One in three people 65 years and over fall each year (community dwelling) with approximately 50% of nursing home residents falling in a year [2]. Over 40% of these residents will have more than one fall in a year [3]. Older adults are hospitalized for fall-related injuries five times more often than they are for injuries from other causes. The potential to fall multiplies once individuals are institutionalized. Even with high statistics for fall events, the rate of falls may still be under-reported [3].

Morbidity and Mortality

Of those aged 85 years and over, 20% of fall-related deaths occur in nursing homes. It has been calculated that at least 95% of hip fractures are caused by falls with approximately 2% of hip fractures being spontaneous. In addition to injuries, falls have serious consequences for quality of life and physical functioning. Approximately 20-30% of those who fall suffer injuries that reduce mobility and independence, and increase the risk of premature death [1].

Costs on the Health Care System

Falls inflate the cost of health care systems, accounting for increased lengths of stay and permanent disabilities. It has been estimated that falls in people aged 65 years and over have cost \$406M including \$212M for inpatient care in Australia in 1993/4 [4].

Fall Risk Factors

There are a number of common risk factors for falling among older people in residential aged care settings as well as acute facilities, with the risk of falling increasing as the number of risk factors accumulate [5]. The following summary of risk factors is from a recent Commonwealth Department of Health Report [6].

Aged Care Facilities

INTRINSIC FACTORS

- Acute health status [5] ;
- History of previous falls [7];
- Wandering behavior;
- Cognitive impairment [8];
- Maximal drop in post-prandial systolic blood pressure [9];
- Deterioration in performance of activities of daily living;
- Reduced lower extremity strength or balance [10];
- Unsteady gait/use of a mobility aid [7];
- Use of antidepressant medication/polypharmacy [10,11]; and
- Independent transfers/wheelchair mobility [7].

EXTRINSIC FACTORS

- Relocation between settings [12]; and
- Environmental hazards.

Acute Care Settings

INTRINSIC FACTORS

- Age (sharp rise over 60 years of age) [13];
- Diagnostic status (patients with circulatory-system disorders were the most likely to fall, followed by nervous system, respiratory, musculo-skeletal and digestive system disorders) [13];
- Previous cerebrovascular accident [14];
- History of falls [15];
- Depression [16];
- Cognitive impairment (acute or premorbid), particularly confusion, impaired orientation [14] and misperception of functional ability [17] ;
- Incontinence of bowel and bladder [17];
- Requiring assistance for ambulation/impaired balance[17] ;
- Sensory deficits, such as impaired vision [18] and dizziness/vertigo [16]; and
- Use of psychotropic medications (with greater risk for those taking more than two medications) [14].

EXTRINSIC FACTORS (HOSPITALISATION)

- Hospitalisation for 19 days or more [17];
- Environmental factors [19]; and
- Time of day.

Development of Best Practice Guidelines

The development of these Best Practice Guidelines was supported by funding via the Quality Improvement and Enhancement Program which allowed employment of a program area manager and two project officers for a period of twelve months, and backfill for nominated trial site coordinators for a six month period. Sixteen self-nominated trial sites were selected from

Queensland Health facilities across Queensland. Facilities were selected in each zone (northern, central and southern) representing different types of health care settings (acute hospital, small regional hospital, aged care facility, rehabilitation unit), so as to ensure a representative cross section of service types. Each trial site implemented a falls prevention program for a six-month duration. These programs were based on published evidence, were multifaceted and included the following three components: (i) risk identification, (ii) falls prevention and (iii) injury prevention strategies.

An evaluation framework was established to evaluate progress at each trial site. Each of the sixteen facilities contributed to and assisted the falls project team in the development of the Best Practice Guidelines during the trial phase.

Other components of the project included:

- A literature review to collect the evidence base.
- Mapping of current resources for falls prevention programs. This was to ensure that any existing work was appraised and evaluated for transferability across Queensland Health facilities.
- Consultation across the state by teleconference, regular newsletters and falls forums.
- Development of guidelines.
- Pre- and post-trial site evaluation by survey and focus groups.

What we learnt from the Falls Prevention Project.

- While the components of a falls prevention program are consistent across all facilities, approaches may differ. The most common approach to falls prevention was a program of multiple interventions aimed at minimizing individual patients' risk of falling [20].
- Falls prevention programs typically should represent the essential components of risk identification followed by falls prevention and injury prevention strategies to reduce the risk.
- Differences are noted across the geographical zones in Queensland Health. This in particular is in relation to staff and patient/resident population, ethnicity and climate.
- Falls prevention approaches for healthy people will differ to those approaches for frail older people.
- District/facility readiness is a major factor to consider prior to the implementation of a new program or quality activity.
- Commitment from executive, clinical and operational staff is imperative for successful implementation.

- A change management strategy needs to be developed within District Health Services.
- Workforce training needs to be addressed.
- Multi-faceted, multidisciplinary interventions are preferable to single risk factor interventions, in all settings [20,21].

How to Use the Best Practice Guidelines

The Best Practice Guidelines consist of broad principles upon which standard procedures for individual health services can be based. The guidelines aim intended to assist service providers in developing and implementing standard policies and procedures in the area of falls prevention. The guidelines aim to assist health care professionals in their assessment of falls risk and in their management of patients/residents who are at risk of falling and those who have fallen [22].

It is expected that health care professionals will use their judgement and clinical knowledge in applying the general principles and specific recommendations of this document to individual assessment and management of patients/resident's. The practitioners' decisions to adopt any particular recommendation must be made in light of available resources and evidence [22].

The goals behind the development of these guidelines include standardization of high quality care in falls prevention, standardised effective risk management approaches to falls prevention, and a reduction of adverse falls incidents.

This will require:

- ✓ Increased awareness of the causes and prevention of falls.
- ✓ Increased use of risk identification management strategies.
- ✓ Improved access to injury prevention strategies.
- ✓ Reduced internal risk in older people.
- ✓ Reduced external (environmental) risk factors.

Risk Management Process

In consultation with key stakeholders, Queensland Health has developed a risk management framework. The risk management process involves risks being identified, analyzed, assessed, evaluated, acted upon and reported through current management structures. Within each Health Service District, a risk register and risk action plan should be developed in relation to strategic and operational risks, and should include both clinical and non clinical risks. Falls have been identified as a clinical risk. Following the identification of falls as a clinical risk, the Best

Practice Guidelines for falls prevention can be used to decrease that risk.

Falls Prevention Community Integration Supplement

The *Community Integration Supplement* to the *Falls Prevention Best Practice Guidelines for Public Hospitals and State Government Residential Aged Care Facilities* is intended to help bridge the gap between the community, health care facilities and residential aged care facilities.

This supplement should be used by Queensland Health staff as a basis for best practice in preventing falls and fall-related injury in people over 65 years of age who are living in community dwellings.

Included in the supplement are:

- Falls assessment and management guideline and resource list
- Assessment tools and information:
 - Falls risk assessment tool and action plan - suitable for immediate use
 - References to other risk assessment tools and literature
 - Individual environmental audit tool and action plan - suitable for immediate use
 - References to other environmental assessment tools
 - Guidelines on how to develop a risk assessment tool
- Health promotion approaches to falls prevention
- Falls clinic current opinions and information
- Falls prevention brochures
- Practical information tips in a booklet entitled *Falls prevention: Your safety checklist and guide*.

It is anticipated that the information and tools contained in the supplement will be of use to many areas that have limited systems in place for managing people who have fallen or are at risk of falling.

It is also assumed that health care professionals will use their clinical knowledge and judgment in applying the general principles and specific recommendations contained in the *Community Integration Supplement* to assess and manage individual clients.

Program Maintenance and Compliance Monitoring

To be successful any falls project must be based on proven and promising falls prevention methods with the project results clearly visible and acknowledged



[23]. An evaluation framework is provided at the end of this document for individual use within each facility. This includes specific objectives, strategies, indicators and outputs that can be evaluated at a local level.

Culture Change

The introduction of falls prevention strategies into a hospital or aged care facility may be a major change for many people. Successful introduction will require staff at all levels to be encouraged to identify improved ways of doing business and working collectively to maximize health gains [23,24]. It is also important to recognize that change in any part of a system will have an impact on every other part of the system [24]. Communication regarding the introduction of changes into a service is essential with all staff, including non-clinical staff. Queensland Health is committed to its mission of "Helping people to better health and well-being". Preventing falls in our Hospitals and Aged Care Facilities supports this ideal.

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1.1 Risk Assessment Tool

1.1.1 Standards of Practice

Queensland Health has recognised that falls are a major cause of preventable injury and death in older patients and is committed to significantly reducing the number of falls and fall-related injuries. The literature states the standard practice for a falls prevention program is to identify those patients/residents at risk of falling by using a risk assessment tool [1], and then to provide multiple patient-resident-focussed interventions. The interventions and strategies implemented should be patient/resident specific and individually selected. There are a number of different risk assessment tools that can be used and this may be dependent on the facility, model of service delivery and population serviced. In lieu of the variation of forms identified during the Falls Project a sample tool is provided in section 1.1.15. A screening program however, is only useful if there is also an effective intervention available for patients/residents that are identified as 'high risk'. Best practice suggests that hospitals and aged care facilities identify those patients that are at risk of falling.

1.1.2 Target Group

The 60 years and over age group has been identified as a particularly vulnerable group with a high combination of falls risk factors and a high probability of fall-related injury. While it could be argued that all patients are at some degree of risk of falling during their hospitalisation, some patient characteristics have been identified as being associated with a higher risk of falling [1]. More specifically, the risk assessment tool should be completed in the following circumstances:

- Patient/resident 60 years of age or over admitted to hospital or residential care.
- Following a fall (either at home, during hospitalisation or while residing in an aged care facility).
- Whenever a patient's/resident's mental or physical condition changes substantially.
- Admissions of patient/resident with other conditions or disease states that cause patients to exhibit agitation, confusion, altered mental states or impair judgement.
- Significant recent change in medications.
- Specified intervals eg. three-monthly (relevant for residential aged care facilities).

1.1.3 Model of Service Delivery

The model of service delivery needs to be collaborative, multi-disciplinary and use multiple interventions. This recognises that patients are individuals and risk factors for falls are many and varied. The assessment of falls

risks and implementation of falls prevention strategies needs to be done early in the admission and needs to become part of the ongoing care that is planned and delivered for the patient. Effective multi-disciplinary teamwork requires thorough assessment, referral and communication between relevant health team members. The patients/residents' needs and the strategies to be implemented require ongoing evaluation and reassessment to monitor their effectiveness and accommodate for changes.

Barriers to effective delivery may arise due to:

- Confidentiality issues with flagging or identifying patients/residents at high risk.
- Poor communication between team members.
- Changes in patients'/residents' condition or treatment.
- Changes in patients'/residents' ward or environment.
- Workload and skill mix of staff caring for patient/resident.

1.1.4 Characteristics of Successful Tools

While some form of patient assessment is recommended, there is currently no evidence to suggest that the generic assessment tools identified in the literature offer any additional benefits over tools that are used within a single facility and have been developed based on that population's characteristics [1]. The following characteristics of successful tools have been documented in the literature: [2]

- Open and flexible enough to incorporate the risks and threats of a wide range of other disease states and conditions, such as alcoholic detoxification, cerebral vascular accident and head injury, as identified by the clinician at the time.
- Quickly differentiates and identifies those who are at an increased risk of falls and fall-related injuries.
- Quick, simple and easy to use.

1.1.5 Minimum Data Set

It is difficult to capture every known falls risk factor in one tool, while also keeping the tool simple and easy to use. The falls risk tool should only flag those patients/residents at a high risk of falls that require additional strategies to be put in place without capturing too large a possible target group. Minimum data set is the minimum amount of data that is required in the risk assessment tool in order for it to give an accurate assessment of the patient's/resident's falls risk. Factors reported in the literature as being important indicators which may increase falls risk include:

- History of falls [3, 4].
- Confusion or altered mental state [1, 5]
 - Depression can decrease attention span and reduce concentration [3].
 - Anxiety can cause sleep disturbance, irritability and





- poor concentration leading to syncope and falls [6].
- Those with cognitive impairment may have perceptual problems, leading to problems interacting safely with the environment [7].
- Sensory impairment.
- Altered urinary or bowel symptoms.
- Mobility/balance impairment [5, 8-11]
 - Poor balance and gait can contribute to fear of falling [12].
- Medications [1, 13-15].
- Syncope [6]
 - Associated with risk of injury, difficult to measure /assess syncope through clinical observation.
- Postural hypotension.
- Days since admission
 - The probability of a patient/resident falling increases with the length of stay.
- Age [4]
 - This is controversial [5].
- Nutrition/weight/calcium intake [5].
- Altered sleep patterns [16-18]
 - May be due to interacting factors such as toileting needs or hunger.
- Vision impairment [7, 18].
- Chronic illness [1].
- Incontinence [3, 19-21].

While unsafe interaction with the environment is noted as a risk factor [7], other risk factors are often of importance. For example, cognitive impairment leading to perceptual problems may change a person's interaction with the environment and mobility/balance problems can cause unsafe interaction with the environment. Therefore, environment will not be included in this minimum data set (Please refer to section 1.2 Environment Audit Tool).

1.1.6 Guide to Clinical Evaluation and Assessment

Administration Process

- An emphasis on a collaborative, multidisciplinary approach to falls prevention and the administration of the falls risk assessment will lead to increased team awareness of falls prevention and the identification of high-risk patients/residents [22].
- Various members of the team should be aware of the process and should administer all/parts of the tool. This encourages team awareness and collaboration. The medication aspect of the tool may need to be countersigned or completed by a medical practitioner, pharmacist or registered nurse, depending on management discretion or facility policy.
- The risk assessment tool should be completed on admission; following reassessment of the patient/resident; and when there is a change of

health status [22]. Assessing only on admission does not capture any changes in the patient's condition [11]. Post-operative patients' should also be reassessed [1].

1.1.7 Appropriate Referral Sources/Criteria

Once a patient/resident is identified as being at high risk of falling, a multidisciplinary, multifaceted approach is required. Partnership approaches or shared care arrangements between disciplines helps to promote a holistic appraisal of the patient's/resident's full needs [23]. Effective communication is important between members of the health team, as input is required from a wide variety of sources.

Health team members who may be involved include:

Medical Staff: To assess and review patients/residents' condition, treatment and medications.

Nursing Staff: To plan, implement, and review strategies, implement referrals, education of patients and relatives, and encourage use of injury prevention strategies e.g. Hip Protector Pads.

Physiotherapist: To implement education programs about falls, exercise programs, mobility assessment and assistance with use of mobility aids.

Occupational Therapist: To review and improve patient's environment, use of aids for activities of daily living.

Pharmacist: To review medications, provide guidelines for usage of medications.

Podiatrist: To assess, review, and treat foot problems identified in patients/residents.

Family and Relatives: To provide education with reinforcement about falls risk factors, ways to minimise falls risks, and assessment of home environments.

1.1.8 Documentation

Individual patients'/residents' fall risk status and appropriate falls prevention strategies should be documented in the integrated patient notes, nursing care plan or pathway. If the patient's/resident's mental or physical condition changes substantially in such a way that increases their risk of falling, or the person has a fall, the falls risk assessment tool should be re-evaluated and the care plan revised. The risk assessment tool is to be transferred to the care plan and filed in the patient's/resident's chart. This may need to be verified by the facility's medical record division.

1.1.9 Education

The goal of education is to increase the awareness of falls risks and preventative strategies, thus decreasing the number and severity of falls. Education may improve the patients/residents' self-confidence therefore reducing the fear of falling. The falls risk assessment can be used as a tool to flag patients at



high risk of falls and to increase staff and patients/residents' awareness of factors that may contribute to a fall. (Please refer to sections 4.0 and 5.0, staff and patient education).

1.1.10 Strategies to Ensure Compliance

- Incorporate the risk assessment tool into already existing admission form/s, and ensure it becomes a part of the admission process. This ensures that one form needs to be completed, rather than many.
- Management support may ensure compliance.
- Risk assessment tool completion and the support of falls prevention strategies may be written into district/facility policy.

1.1.11 Flagging

Flagging aims to identify patients/residents who are at high risk of falling. It is to remind staff that the patient/resident is at high risk of falls and trigger interventions that may reduce the risk of falls. Flagging may also impact on the individual's self awareness of falls [21].

Methods of flagging include

- Documentation of falls risk status in the medical record.
- Provision of a specified coloured plastic identification bracelet worn by the patient/resident.
- A fall risk sign placed on the patient's/resident's bed or near the patient's/resident's name (Be aware of confidentiality issues and facility policy).
- Discussion of patient/resident falls risk status at staff handover.
- Discharge transfer notes should include written falls risk status and details of the falls prevention strategies utilised. This should accompany the patient/resident on discharge or transfer from the unit/ward.

1.1.12 Checklist for Patients/Residents Assessed as Low/Medium Falls Risk

- Has the patient/resident been oriented to facility/ward, room and mechanisms for assistance eg call bell?
- Is the patient/resident using visual and/or hearing aids? Do they need reviewing?
- Is the patient's/resident's environment uncluttered?
- Is the patient's/resident's bed at the correct height?
- Have the patient/resident and family/visitors been given basic information on safety and risks (verbal/written)?
- Are the patient's/resident's medications appropriate? (check with appropriate health professional)
- Is the patient's/resident's footwear safe? (Refer to footwear guidelines 2.2).

Are mobility aids appropriate and accessible? (Refer to physiotherapist if appropriate).

Is there appropriate supervision of patient/resident when transferring/walking?

Are regular toilet times scheduled for the patient/resident? (Refer to continence management guidelines 2.4)

1.1.13 Checklist For Patients/Residents Assessed as High Falls Risk

Communicate falls risk to all staff (verbal and written)

Staff education conducted

Conduct environmental audit (Refer to guidelines 1.2)

Has the patient/resident been oriented to facility/ward, room and mechanisms for assistance eg call bell?

Is the patient/resident using visual and/or hearing aids? Do they need reviewing?

Have the patient/resident and family/visitors been given basic information on safety and risks (verbal/written)?

Review medications. (Refer to medication guidelines 2.1).

Is the patient's/resident's footwear safe? (Refer to footwear guidelines 2.2).

Is the patient's/resident's dietary intake appropriate? (Refer to nutrition guidelines 3.2).

Review the need for hip protector pad application. (Refer to injury prevention strategies 3.1).

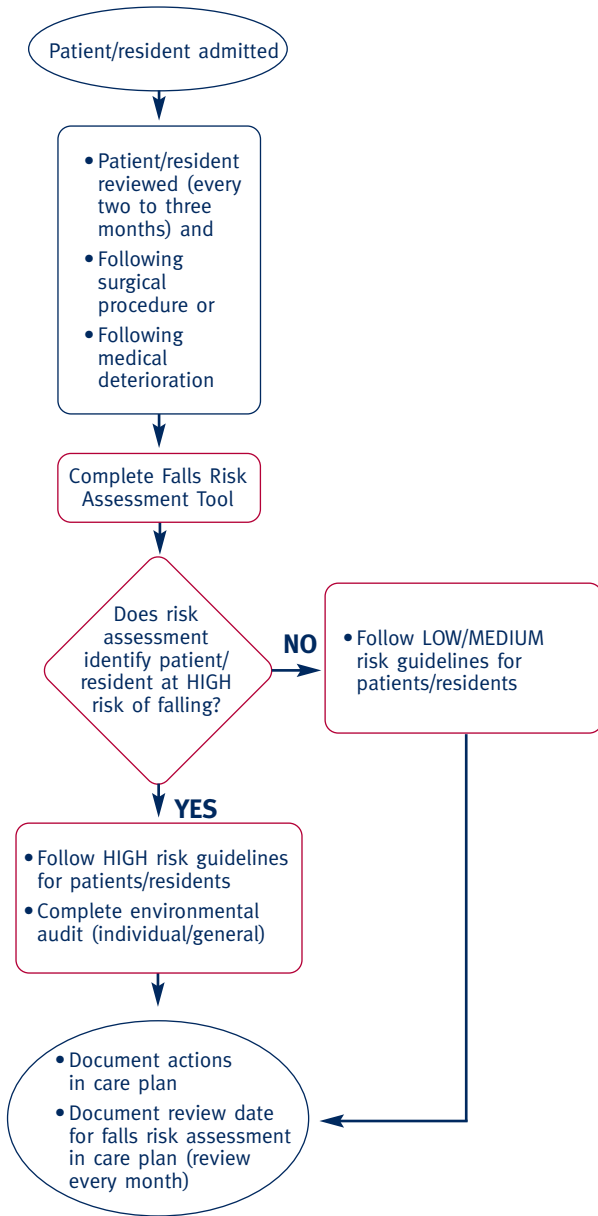
Review the need for bedrail use. (Refer to restraint guidelines 2.5).

Are the patient's/resident's mobility aids appropriate and accessible? Does the patient/resident require assistance or supervision when transferring/walking? (Refer to Physiotherapist if appropriate).

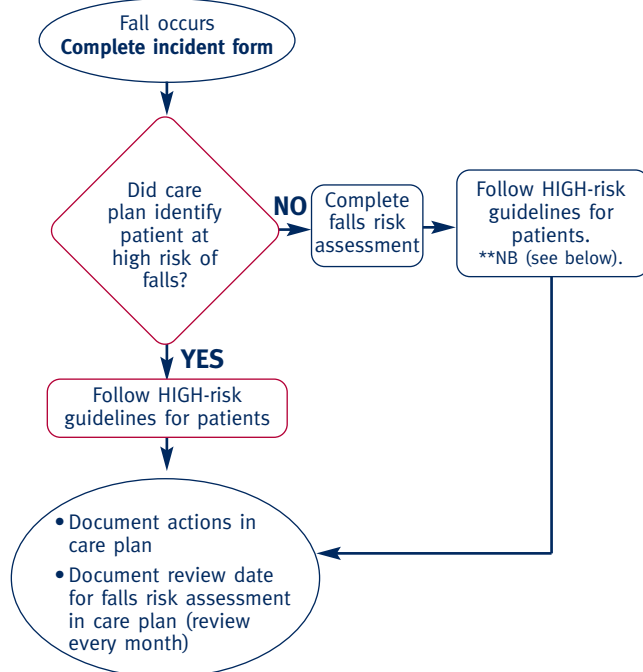
Is the patient/resident involved in an exercise program? (Refer to exercise program guidelines 2.3).

Does the patient/resident have incontinence problems? (Refer to continence guidelines 2.4).

1.1.14 Falls Risk Procedure on Admission



Falls Risk Procedure After Fall Occurs



**NB When a patient/resident falls, their fall risk status automatically becomes HIGH. The risk assessment tool should be readministered to identify changes in function/status that may have caused the fall.

These flowcharts were developed by staff at Mundubbera Health Service, North Burnett Health Service District, as part of the Quality Improvement and Enhancement Program.



1.1.15 Risk Assessment Tool

		Rating Scale			Date / /		
		0	1	2	3	Score	Score
FALLS RISK ASSESSMENT TOOL		Surname: First Name/s: U.R. No Date of Birth: (Please affix Patient ID label here if available)					
CATEGORIES							
DAYS SINCE ADMISSION	On Admission	Up to 7 days	8 – 14 days	Over 14 days			
AGE	0 – 19 years	20 – 59 years	60 – 70 years	> 70 years			
FALLS HISTORY	No falls in last year	Fall in last 6 months	Fall in last 3 months	Fall in last month			
BALANCE	Chair/bedfast, stand & pivot with help	Needs assistive device & 2 people	Ambulates with assistive device &/or one person	Ambulates without assistance/device			
MENTAL STATE	Oriented to time, place and person	Oriented to place & person	Oriented to person	Disoriented &/or impaired judgement &/or impulsive			
GENERAL HEALTH	Well nourished, normal sleep pattern	Poor appetite &/or sleep disturbance	Severe sleep disturbance	Malnourished, weight loss			
VISION	Normal	Wears glasses	Blurred vision, cataract, glaucoma	Severe visual disturbance or blindness			
SPEECH	Normal	Speech defect but understood	Dysphasia/language barrier	Severe defects or severe language barrier			
MEDICATIONS	No effectors	CV effectors eg. betablockers, diuretics, anti-hypertensives	CNS effectors eg. tranquilisers, sedatives, psychotropics	Both CV & CNS effectors			
CHRONIC ILLNESS	None	1 Chronic condition	> 1 Chronic condition	Multiple illnesses			
INCONTINENCE	None	Increased frequency	Nocturia, stress incontinence	Urge incontinence, indwelling catheter			
Score Assessment	0-10= Low Risk	11-20 = Medium Risk	21-33 = High Risk	Total Score:			

This tool was adapted from Eventide Nursing Home, Sandgate, Prince Charles Health Service District, as part of the Quality Improvement and Enhancement Program





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1.2 Environmental Audit Tool

1.2.1 Background Information

Environmental factors may play a part in either preventing or contributing to falls and the severity of injuries caused by falls. Research has identified risks in

environmental unit design [1] and type of flooring [2]. A falls prevention environmental audit can assist in identifying areas of risk, and should address individual and general environmental risk factors. For this reason it is suggested that any environmental audit tool aimed at falls prevention should have two sections—Section A which focuses on individual risks, and section B that considers the general environment. All facilities are encouraged to perform regular audits of the environment for safety as well as regular maintenance checks on all equipment [3].

1.2.2 Target Group

The environmental audit tools are intended for patients/residents 60 years and older, who have been assessed as high risk of falling.

1.2.3 Minimum Data Set

All members of the multidisciplinary team, clinical and operational, contribute to providing an optimal safe environment [4]. Areas that require regular auditing include bedroom, bathroom, toilet, furniture, floor surface, equipment and lighting.

Design of an Environmental Audit Tool

- Input from all members of the multi-disciplinary team is desirable to determine appropriate and relevant content for the particular facility type.
- Section A of the environmental audit tool should be patient/resident specific ie. Patient/resident identification/label to be placed on front page with their locality.
- Keep the tool as brief as possible.
- Use tick and flick lists for ease of application.
- Do not include items unrelated to the specified area.
- Allow space to identify remedial actions to be taken.
- Provide space to identify when remedial action has been taken eg. Tick box.
- Identify on the form filing location in patient's/resident's chart after discharge.

1.2.4 Administration Process

Brevity and simplicity of the environmental audit tool will assist with completion. The design should complement, rather than repeat, current workplace health and safety, infection control, fire safety or other audit tools. Facilities may need to rely on existing reporting and communication structures to ensure identified hazards are addressed and altered accordingly. This should align with current workplace health and safety and quality reporting mechanisms.



Individual Focus – Section A (Adapted from *Putting your Best Foot Forward, Preventing and Managing Falls in Aged Care Facilities*: Centre for Education and Research on Ageing) [3]

Section A (refer to 1.2.10). The items in this section of the tool relate to the patient/resident and their individual surroundings.

The administration process for completion of section A of the environmental audit tool is as follows:

- Responsibility for completion of this section should lie with the team member admitting the patient/resident.
- On completion, section A must be forwarded to the person in charge of the area. This will ensure that deficiencies are brought to their attention and acted upon in a timely manner.
- Certain risks may require immediate attention and may place the patient/resident at risk if not attended to. It is imperative, therefore, that Section A be completed on admission of each patient/resident.
- Time constraints in a health care facility may be a barrier to compliance and completion of the tool. The environmental audit tool should be kept as brief as possible.
- Completion of the environmental audit should be documented in the patient's/resident's progress notes or itemised as an action in the care plan.
- The tool should be included in the admission package.
- Section A should be filed in the patient's/resident's chart on discharge.

General Environment Focus – Section B (Adapted from *Putting Your Best Foot Forward, Preventing and Managing Falls in Aged Care Facilities*: Centre for Education and Research in Ageing) [3]

Section B (refer to 1.2.10) is to be completed by the person in charge of the area or a suitably designated person. The items in this section of the tool relate to the general environment of the patient/resident, which may be shared by others.

The administration process for completion of section B of the environmental audit tool is as follows:

- Responsibility for completion of this section lies with the person in charge of the area. This is necessary since remedial actions may involve major and/or costly modifications to the area or changes in the operational activities within the area.
- Section B is not necessarily completed on admission but should be carried out at regular intervals (1x monthly, 3x monthly).

- It may be suitable for the completion of Section B to coincide with, or be executed as part of the workplace health and safety audit.

1.2.5 Standards of Practice

- Use of the environmental audit tool should be addressed during orientation of each team member.
- Simplicity of use does not require particular professional competency or training.
- It is recommended that regular educational sessions by the multi-disciplinary team are conducted to stress the importance of diligent completion and follow-up.
- Promotion of program sustainability may be maintained through: incorporation of program duties into job descriptions of staff, incorporation of program duties into core business, placing policies into existing frameworks, access to ongoing use and availability of resources [5].

1.2.6 Referral Sources

- Identified risks must be flagged as soon as practical with the person in charge of the area to allow for early remedial action to be arranged.
- Referral to other departments may be necessary such as workplace health and safety, operational services/cleaning and allied health.

1.2.7 Flooring

Flooring can affect the postural stability of older people [6]. The following should be considered for new or replacement flooring in hospitals and aged care facilities:

Soft Floors eg. Carpets

- Carpeted flooring may lead to an increased incidence of falls [2].
- Older people walk faster on carpet in comparison with vinyl [7].
- Some compliant surfaces eg. high pile carpet with urethane foam and rubber backing may affect proprioception and postural control in older people [6].
- The benefits of compliant floors (such as being more comfortable and less likely to cause injury following a fall [8]) may be outweighed by the potential for increasing the risk of falling through altering postural control [6].
- Carpet may incur increased maintenance and replacement cost, particularly if incontinence is an issue [2, 8].

Hard Floors eg. Vinyl, timber, tile

- The trend for reduced incidence of falls was in favour of vinyl rather than carpet [2].

- Older people walk slower on vinyl than on carpet [7].
- Matt or textured finish tiles may be safer than high gloss tiles.
- Harder floors allow for a more stable reference for the body when balancing [6].
- There is increased likelihood of injury if falling on a harder floor [8].

Mats, Rugs or Runners

- Avoid very thick or slippery rugs/runners [9].
- Purchase rugs/runners with non-slip backing [9].
- The rug/runner should lay flat along the floor and not curl over at the corners.

Floor Materials Recommended

- Floor surfaces must have a slip-resistant surface with a texture traversable by a wheelchair and floors should not be polished [10]. The risk of fracture can be decreased by the use of energy absorbing floors [11].

Some finishes recommended for known wet areas are:

- Concrete with abrasive or textured finish.
- Concrete with exposed aggregate finish.
- Bituminous concrete.
- Natural stone with rough finish.
- Paving bricks with abrasive finish.
- Slip resistant tiles.

Dry locations should use all the materials mentioned for wet locations, as well as:

- Short-piled, antistatic carpet and
- Smooth flooring materials without a high gloss, slippery finish.

Flooring Materials Not Recommended

Examples of flooring materials not recommended include paved bricks with bevelled edges or long piled carpets [10]. This fits directly with Infection Control guidelines [12, 13] and Queensland Health Capital Works recommendations which state floor covering must be:

- Covered and sealed with impermeable material.
- Slip resistant.
- Stain resistant material.
- Does not retain odour.
- Durable and resilient [12, 13].

1.2.8 Vision and the Environment

Visual Impairment as a Risk Factor

The incidence of ocular disease and visual impairment increases with age. Common causes of visual impairment include glaucoma, diabetic retinopathy,

cataracts, age-related degeneration and refractive errors [14]. Visual problems may also be related to spectacle wearing such as:

- Incorrect prescription.
- Scratched lenses.
- Non-compliance with wearing [15].

Independent risk factors for falls that are related to visual impairment include:

- Depth perception.
- Reaction time.
- Postural sway [16].

The following conditions have been further associated with an increased falls risk:

- Visual field impairment.
- Contrast sensitivity.
- Poor visual acuity.
- Self-reported poor vision.
- Impaired depth perception [17].

Assessments for visual impairments need to review contrast visual acuity, contrast sensitivity, depth perception and visual field size [14]. Multiple fallers have performed significantly worse on visual acuity assessments compared to non-fallers [16].

Perceptual Dysfunction

Interaction with the environment has been identified as an integral part of the perception process. A person's vision may alter the perception of space, depth, width and size. Perceptual dysfunction may influence personal responses in an environment altering movement and behaviour. The following factors have been identified as possible triggers for perceptual dysfunction in a particular setting:

- Colours and patterns eg. changes in these may affect behaviour, change perception of height and cause disorientation moving between rooms.
- Interior furnishings eg. May create artificial environments – 15 chairs all identical.
- Negotiation of space eg. Patients/residents either take wide berth around furnishings or bump into furnishings.
- Object recognition eg. Objects missed – difficulty identifying an object from its background.
- Background noise eg. Alteration in behaviour/mood may be triggered by changes in background noise.

Movement and behaviours may be altered in response to changes in the environment, eg. colour/patterns in décor. In particular, the speed and accuracy of movements may be altered. Gait patterns may alter in response to changes in floor design and speeds of movement may fluctuate as residents approach doorways.

The environment may also influence the psychological

status of persons. This includes fear, irritable mood and agitation. Residents may express a particular feeling or mood through their physical interaction with the environment demonstrated by holding onto door frames, reluctance to walk in open spaces and feeling furniture for direction [18].

Strategies and Interventions

Causes of visual loss are mostly correctable by the use of simple and cost-effective strategies including updating glasses and lenses or cataract surgery [16, 17]. Patients with potentially treatable eye disease should be assessed by an ophthalmologist [15].

1.2.9 Cognitive Impairment and the Environment

Careful environmental planning offers benefits to neurological and physical status. The aims of environmental adaptations for patients/residents who are cognitively impaired should be to:

- Provide a protective, low stimulus environment where individuals can interact with others.
- Provide an environment safe and free from hazards, being predictable, secure and stable.
- Meet the needs of the patient/resident without the use of chemical or physical restraints [19].

Strategies and Interventions

The following considerations may reduce the incidence of falls in people with cognitive impairment: [19, 20]

- Control the level of stimulation (reduce group size, control noise levels, minimise traffic through group areas, disguise doors, ensure a moderate colour scheme is used). Consider that excessive lowering of stimuli can lead to sensory deprivation, boredom and a subsequent increase in self-stimulating activities such as unsafe walking and wandering.
- Provide adequate walking areas (safe walking areas indoors and outdoors, floor coverings non-slip and in good condition, minimise door thresholds).
- Provide suitable furniture and avoid sharp edges. Beds should be firm, have lockable wheels to prevent movement, be able to be lowered. Bedside table should be readily accessible. Chairs should provide adequate support, have arm rest cushioning, and be the correct height. (Leg length measurement from the heel of the foot/shoe to under the thigh, just below the bent knee. Chair height is determined by adding two centimetres to this measurement) [21].
- Provide lighting bright enough with adequate coverage to ensure clear vision and dispel the casting of shadow. Ensure ready access to light switches, with the placement of fluorescent tape on switches to improve the ability of residents to locate them in the dark. Provide night-lights, bathroom lights or outdoor

sensor lights if appropriate.

- Provide appropriate bathroom/toilet facilities eg. Room for assistive devices such as hoists. Toilet should have grab rails and non-slip floor surfaces. Adequate door width and recess size will allow access of patients/residents and any equipment required.
- The effects of environmental modifications (eg. grab rail installation) has shown to increase a person's confidence and reduce their fear of falling [22].

1.2.10 Environmental Audit Tool - Individual

1.2.11 Environmental Audit Tool - General

These tools may be copied for use in your facility.

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1.2.10 Environmental Audit Tool - Individual

Individual Environmental Checklist Section A	Surname: First Name/s: U.R. No Date of Birth: / / <i>(Please affix Patient ID label here if available)</i>			
Bedrooms / Ward	Please tick appropriate box	Yes	No	N/A
• Is the bed at the lowest height for safety of client (ie. so they can sit and touch the floor with their feet, with their legs at 90 degrees)?				
• Are there call bells within easy reach of client?				
• Is the mattress firm to provide support when moving in the bed?				
• Do patients have bedside lockers or tables that they can put things on safely without undue stretching and twisting?				
• Is there space for client to store any walking aids where they can reach them without getting out of bed?				
• Do the beds have locks on castors which work easily and effectively?				
• Do patients have easy access to night-lights?				
• Is the room free of clutter?				
• Is the room free of cords and other hazards on the floor?				
• Is the room free of loose rugs on the floor?				
Furniture	Please tick appropriate box	Yes	No	N/A
• Are chairs correct height (ie. allow the patient to have feet on ground and legs at 90 degree angle)?				
• Do chairs have sturdy armrests to assist patient getting in and out of them?				
• Is the height of chairs adjustable to cater for people of different sizes?				
• Are chair legs straight rather than sticking out and being a hazard?				
• Are the pieces of furniture secure enough to support a patient, should they lean upon them or grab them if they lose their balance?				
• Can the patient rise/sit with ease?				
• Can the patient safely move the footstool before transferring?				
• Can the patient reach the footstool when required?				
Mobility Aids	Please tick appropriate box	Yes	No	N/A
• Brakes on wheelie frames and wheelchair are in good working order.				
• Appropriate height for client.				
• Aid is kept within easy reach.				
• Footplates of wheelchair are easy to move.				
• Patient has been educated regarding safety with aid (walker / wheelchair).				
<i>Remedial actions that need to be taken:</i>				
.....				
.....				
.....				
.....				

Completed by: Date:

The "Individual Environmental Checklist", which was developed by the Centre for Education and Research on Ageing and was first published in *Putting Your Best Foot Forward*, is reproduced with the permission of the Centre for Education and Research on Ageing. This tool was adapted by staff at the Rehabilitation Unit, Bundaberg Base Hospital, Bundaberg Health Service District, as part of the Quality Improvement and Enhancement Program.



1.2.11 Environmental Audit Tool - General

<p>General Environmental Checklist</p> <p>Section B</p>		<p>Ward / Area</p>				
<p>Bathrooms and Toilets</p>		<p>Please tick appropriate box</p>		<p>Yes</p>	<p>No</p>	<p>N/A</p>
<ul style="list-style-type: none"> • Are there properly positioned and secure handrails next to the toilet, shower and bath? • Have floors been treated with a non-slip preparation, which has been redone in the past two years? • Are non-slip mats used in the bath and shower? • Are areas immediately around the bath and sink marked in contrasting colours? • Are there raised toilet seats available which are well fitting and secure? • Do the toilets have surrounds to provide support for people getting on and off the toilet? • Are there receptacles for soap, shampoo and washers which are easy to reach and do not require the patients to bend over? • Do patients have access to 'soap on a rope' to avoid dropping the soap and having to bend down and pick it up? • Do all shower chairs have adjustable legs, armrests and rubber stoppers on the legs? • Do commode chairs have wheels, castors and brakes that work smoothly and effectively? • Do all shower chairs and commode chairs have seat belts or safety bars? • Is there room for a seat in AND near the shower? • Is the shower base step-less? • Are call buttons accessible from sitting position in shower area? • Are doors lightweight and easy to use? 						
<p>Furniture</p>		<p>Please tick appropriate box</p>		<p>Yes</p>	<p>No</p>	<p>N/A</p>
<ul style="list-style-type: none"> • Are chair legs straight, rather than sticking out and being a hazard? • Is furniture secure enough to support a patient, should they lean on or grab for balance? • Are bedside lockers or tables available to patients so that they can put things on safely without undue stretching and twisting? • Are footstools in good repair – stoppers in good condition? • Is space available for footstool when required? 						
<p>Floor Surfaces</p>		<p>Please tick appropriate box</p>		<p>Yes</p>	<p>No</p>	<p>N/A</p>
<ul style="list-style-type: none"> • Are carpets low-pile, firmly attached and a constant colour rather than patterned? • Are walls a contrasting colour to the floor? • Is non-skid wax used on wooden and vinyl floors? • Do floors have a matt finish, which is not glary? • Are "Wet Floor" signs readily available and used promptly in the event of a spillage? • Are ramps used whenever possible, rather than stairs? • Do steps have a non-slip edging in contrasting colour to make it easier to see? • Is routine cleaning of floors done in a way to minimise risk to patients (eg. well signed, out of hours)? 						





Lighting	Please tick appropriate box	Yes	No	N/A
• Is lighting in all areas at a consistent level so that patients are not moving from darker to lighter areas and vice versa?				
• Do staircases have light switches at the top and bottom of them?				
• Do patients have easy access to night-lights?				
• Are all light switches accessible by patients (ie. not too high or too big to reach)?				
• Are the hallways and rooms well-lit (75 watts)?				
• Is glare absent from windows?				
• Are all switches marked with luminous tape for easy visibility?				
Passageways	Please tick appropriate boxes	Yes	No	N/A
• Are all passageways kept clear of clutter and hazards?				
• Are firm and colour-contrasted handrails provided in passageways and stairwells?				
• Is there adequate space for mobility aids?				
• Is there adequate storage space for equipment?				
• Are ramps used whenever possible, rather than stairs?				
• Do steps have a non-slip edging in a contrasting colour?				
• Is there enough room for two people with frames to pass each other safely?				
Lifts	Please tick appropriate box	Yes	No	N/A
• Do doors close slowly so that patients do not have to hurry?				
• Are buttons easily accessible to avoid reaching and balance problems?				
• Are floor signs at eye level to prevent stretching the neck?				
• Are handrails provided for support in case of a sudden jolt?				
External areas	Please tick appropriate box	Yes	No	N/A
• Are pathways even, with a non-slip surface?				
• Are pathways clear of weeds, moss and leaves?				
• Are steps marked with a contrasting colour and non-slip surface?				
• Are there handrails beside external steps and pathways?				
• Are there any overhanging trees, branches and shrubs?				
• Are there sensor lights that provide light and alert staff if a patient wanders outside at night?				
• Are there sufficient numbers of outdoor seats for regular rests?				
Security of environment	Please tick appropriate box	Yes	No	N/A
• Are all exits from the facility secure, to prevent confused patients leaving?				
• Are there clear walking routes both inside and outside where patients can wander safely without becoming lost?				
• Does the layout of the facility, or allocation of rooms, allow staff to be fully aware of patients who may disturb other patients or take things from other patients' rooms?				
<i>Remedial actions that need to be taken:</i>				
.....				
.....				
.....				
.....				

Completed by: Date:

The "General Environmental Checklist", which was developed by the Centre for Education and Research on Ageing and was first published in *Putting Your Best Foot Forward*, is reproduced with the permission of the Centre for Education and Research on Ageing. This tool was adapted by staff at the Rehabilitation Unit, Bundaberg Base Hospital, Bundaberg Health Service District, as part of the Quality Improvement and Enhancement Program.



2.1 Medication Review

2.1.1 Background Information

Medications have been identified as a modifiable risk factor. Each patient or resident needs to be evaluated regarding the need for continued use of therapeutic agents and for falls risk [1]. The use of four or more medications has been linked to an increased risk of falls and up to a nine-fold increased risk of cognitive impairment [2]. Elderly people may be at increased risk of drug-related problems such as adverse drug reactions, inappropriate prescribing and non-adherence with prescribed medications. Benzodiazepine use in the elderly has been linked to cognitive impairment, increased rate of hip fractures, and increased risk of nocturnal falls and injurious motor vehicle accidents. The fall rate has increased by 44% in some groups of patients who have taken benzodiazepines [3]. Effective medication management is a vital component of a multifactorial approach to reducing the risks of falls in the elderly [4]. Elderly people are often more sensitive to effects of medicines than younger people.

2.1.2 Drugs and Falls Prevention

It has been well reported in literature that some medications, particularly psychotropic drugs, can increase the risk of falls and fall-related injuries. A review of prescribed and other medications to assess their potential risk and benefit to the patient/resident needs to be undertaken [5]. Further listings of medications identified as increasing the risk of falls have been outlined in cited references [1-3].

2.1.3 Target Group

Patient/Resident: [6]

- Assessed as being at risk for falls.
- Receiving four or more different types of medication.
- Taking one or more psychotropic medications (tranquillisers, antidepressants or sedative/hypnotics).
- With multiple medical conditions.
- With suspected non-adherence.
- With symptoms suggestive of an adverse drug reaction.
- Taking medications with a narrow therapeutic index.
- Taking more than 12 doses of medication/day.

2.1.4 Guide to Clinical Evaluation and Assessment

The literature suggests that medications are a key issue in relation to falls prevention, however there is currently no uniform best practice that outlines a clinical evaluation and assessment process for

reviewing of medications in relation to the prevention of falls.

There are many things that need to be considered when developing a clinical evaluation and assessment process for reviewing patient medications in relation to the prevention of falls.

The development of local policies and procedures for reviewing patient medication in relation to falls prevention must be done in consultation with local clinicians and expert groups in the area. Consultation can be sought from:

- Geriatricians.
- Medical officers.
- Pharmacists associated with rehabilitation and geriatric units.
- Pharmacists associated with acute facilities.
- Local pharmacists.
- Nurses.
- Pharmaceutical Advisory Services (Queensland Health).
- Queensland Drug Information Centre (RBH).
- School of Pharmacy, University of Queensland.
- Australian Pharmaceutical Advisory Council.
- Pharmaceutical Society of Australia.
- Society of Hospital Pharmacists of Australia.

The Australian Pharmaceutical Advisory Council (APAC) is a national organisation composed of the peak organisations involved in pharmaceutical issues. APAC has developed a range of guidelines including:

- National guidelines to achieve the continuum of quality use of medicines between hospital and community [7], and
- Integrated best practice model for medication in residential aged care facilities [6].

Reference to guidelines will need to be considered when developing local policies and procedures for medication review in relation to the prevention of falls.

Points to Remember

- Medications should be reviewed for falls risk assessment:
 - on admission
 - at discharge, and
 - whenever there is a change in medications, including dose adjustments.
- Documentation of medication review for falls assessment and outcomes should occur following each review.
- Documentation of patient education regarding the effects of medication including any methods for avoiding falls.

- Drugs that cause dehydration increase the potential risk and therefore need to be monitored. These include diuretics and laxatives.
- Simplification of medication regimens should occur where possible.

References

1. Gray S, Jenkins M, Mahoney J: Psychotropic medication use in the older patients referred for evaluation of falls risk. *The Annals of Pharmacotherapy* 2000; 34: 265.
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5. Tinetti ME, Speechley M: Prevention of falls among the elderly. *New England Journal of Medicine* 1989; 320: 1055-9.
6. Integrated best practice model for medication management in residential aged care facilities. *Australian Pharmaceutical Advisory Council*; 2nd Edition.
7. National guidelines to achieve the continuum of quality use of medicines between hospital and community. *Australian Pharmaceutical Advisory Council* 1998.

2.2 Footwear

2.2.1 Background Information

These guidelines address footwear and foot care in older people with relation to falls prevention. The literature reviewed reports that many older people consider foot problems to be inevitable with ageing [1, 2]. Many older people will also wear poorly fitting shoes, believing them to be adequate [3, 4]. Addressing falls risk factors including foot impairment and/or inappropriate footwear in older people may assist in the prevention of falls.

2.2.2 Preadmission Checklist

Forty-seven percent of patients/residents screened on a geriatric medical unit for unsuitable or dangerous footwear required alternative or replacement footwear [5]. This suggested that education is essential in an elderly care program. Delay or difficulty with relatives or carers providing alternative footwear may occur [5]. Preadmission screening (eg. checklist) therefore may ensure that more appropriate footwear is worn by patients/residents while admitted to the facility. An information sheet such as a 'Safe Shoe Checklist' for patients/residents and carers is recommended. In units where preadmission screening is not possible, it is recommended that this information could be provided on admission to the unit.

2.2.3 Safe Shoe Checklist

The requirements for safe, well fitting shoes vary depending on the individual and their level of activity. The features outlined may assist in the selection of an appropriate shoe. The shoe should: [5, 6, 7, 8]

- Heel**
 - Have a low heel (ie. less than 2.5cm) to ensure stability and better pressure distribution on the foot. A straight through sole is also recommended.
 - Have a broad heel with good ground contact.
 - Have a firm heel counter to provide support for the shoe
- Sole**
 - Have a cushioned, flexible, non-slip sole. Rubber soles provide better stability and shock absorption than leather soles. However, rubber soles do have a tendency to stick on some surfaces.
- Weight**
 - Be lightweight.
- Toebox**
 - Have adequate width, depth and height in the toebox to allow for natural spread of the toes.
 - Have approximately one centimetre's space between the longest toe and the end of the shoe when standing.
- Fastenings**
 - Have laces, buckles, elastic or velcro to hold the shoe securely onto the foot.
- Uppers**
 - Be made from accommodating material. Leather holds its shape and breathes well however many people find walking shoes with soft material uppers are more comfortable.
 - Have smooth and seam free interiors.
- Safety Shape**
 - Protect feet from injury.
 - Be the same shape as the feet, without causing pressure or friction on the foot.
- Purpose**
 - Be appropriate for the activity being undertaken during their use. Sports or walking shoes may be ideal for daily wear. Slippers generally provide poor foot support and may only be appropriate when sitting.
- Orthoses**
 - Comfortably accommodating orthoses such as ankle foot orthoses or other supports if required. The podiatrist/orthotist or physiotherapist can advise the best style of shoe if orthoses are used.

This is a general guide only. Some people may require the specialist advice of a podiatrist for the prescription of appropriate footwear for their individual needs.

2.2.4 Posture and Toe Strengthening Programs

In addition to wearing appropriate shoes, many foot conditions can be avoided or relieved by a toe strengthening program. These exercises strengthen the intrinsic foot muscles and relieve foot discomfort [9, 10]. The American Foot and Ankle Society recommends exercises such as toe raises, toe squeezes, toe pulls, towel curls and sand walking. Other exercises that are recommended by podiatrists include plantar flexion exercises of the foot. For further information on these exercises refer to [9, 10].

2.2.5 Appropriate Referral Process and Discharge Planning Strategies

Despite having foot problems, many older people do not seek foot care services for many reasons. These include: [11]

- Not acknowledging their foot problem.
- Associating foot problems with normal “ageing”.
- Not considering foot care a high priority.
- Lack of awareness about the seriousness of foot problems.
- Lack of awareness about available foot care services.
- Inability to access or afford foot care services.

Some patients who are at risk of falling will require specialty podiatry services for appropriate advice and treatment. The role of the multidisciplinary team (medical practitioner, nurse, occupational therapist, physiotherapist etc.) may include basic foot screening to determine whether a referral to a podiatrist is required. This screening may include (but may not be limited to) patients/residents with one or more of the following conditions or clinical signs, in conjunction with high risk of falls: [12]

- Foot pain.
- Gait abnormalities.
- Unsteadiness or change in gait.
- Foot abnormalities such as high arch.
- Skin pathology such as calluses.
- Any foot problem or condition that affects the patient’s balance, posture or proprioception in the lower limbs. This may include conditions such as diabetes mellitus, peripheral vascular disease and peripheral neuropathy.
- Patients/residents with poorly fitting or inappropriate footwear.

If podiatry services are required, patients/residents and carer/s should be provided with podiatry service information and, where necessary, a podiatry referral should be organised immediately [12].

Other discharge planning strategies may include:

- Provision of foot care education and self management information to the patient and carer/relative.
- Recommendation for basic foot screening by podiatrist, GP or other health care worker.
- Physiotherapy review for ankle orthoses, such as ankle foot orthoses or air cast splint if required. Other foot orthoses should be prescribed by a podiatrist/orthotist.
- Attending community education programs regarding footwear and care.

2.2.6 Consideration of Specific Conditions

Common foot problems reported by older men and women include nail and skin problems, corns, calluses, swollen feet, bunions and arthritis [11]. Nail problems may be more common in the older population due to difficulty in reaching the nails as a result of poor flexibility, eyesight or inadequate nail equipment [11]. Women develop and report more foot problems than men, e.g. foot abnormalities, pain and discomfort, possibly due to the poor design of many women’s shoes [1, 11].

Any older person with a foot condition or problem that potentially increases their risk of falling should be assessed by a podiatrist. This ensures expert care, advice and education, specific to that foot condition/problem and falls prevention [13, 14].

2.2.7 Special Considerations for Care Setting Type

Some facilities may experience difficulty in securing or having access to podiatry services for many reasons. In this situation, it may be appropriate for other members of the multidisciplinary team to undertake basic foot screening and client education on foot care and appropriate foot wear. This is not intended to replace a thorough foot assessment by a podiatrist. Assessment and management of foot health is best managed by a podiatrist within the multidisciplinary team.

2.2.8 Footwear Brochure

See attached footwear brochure – this may be copied and used in your facility.

References

1. Menz H. B, Lord S.R. Foot problems, functional impairment, and falls in older people. *Journal of the American Podiatric Medical Association* 1999; 89(9), 458 – 467.
2. White E.G, Mulley G.P. Footcare for very elderly people: A community survey. *Age and Ageing* 1989; 18, 275 – 278.
3. Lord S.R, & Bashford G.M. Shoe characteristics and balance in older women. *Journal of American Geriatric Society* 1996; 44, 429 – 433.
4. Dunne R.G, Bergman A.B, Rogers L.W et al. Elderly persons’ attitudes towards footwear – a factor in preventing falls. *Public Health Reports* 1993; 108(2), 245 – 248.



The brochure features a dark red background with white and light blue text and graphics. At the top left, a white line-art illustration of a shoe is shown. The main title 'Don't go head over heels' is in large white font on a dark red background. Below it, a white box contains the text 'Information to help you choose footwear for:' followed by a bulleted list: '• comfort and foot care' and '• falls prevention'. A large, stylized white line-art shoe is positioned on the right side. The bottom left contains a 'References:' section with a bulleted list of sources. The bottom right contains a 'Special advice' section with a paragraph and a 'Falls Prevention' logo. The Queensland Government logo is in the top right corner.

Don't go head over heels

Information to help you choose footwear for:

- comfort and foot care
- falls prevention

References:

- Australasian Podiatry Council. (n.d.). Your podiatrist talks about footwear. [Brochure]. ACN 008 488 748.
- Australian Podiatry Association (Qld) Inc. (n.d.). Secrets of shoe shopping success. [Brochure].
- Australian Podiatry Council. (n.d.). Podiatry and footwear. [Brochure]. ACN 008 488 748.
- Gadean Footwear (Australia) Pty. Ltd. (n.d.). Gadean Footwear. [Sales Catalogue]. ACN 054 831 015.
- National Association of Diabetes Centres & Australian Podiatry Council. (n.d.). Footwear. [Brochure].

Special advice for people with diabetes or foot conditions

Please contact your podiatrist about what is appropriate for your foot condition. You may need further foot care and preventative advice.

This brochure was developed by QEII Jubilee Hospital, as part of the Quality Improvement and Enhancement Program's Falls Prevention in Public Hospitals and State Government Residential Aged Care Facilities Project.

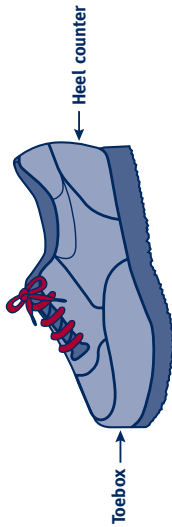
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Falls Prevention
in Older People

Queensland Government
Queensland Health

Choosing the right shoe

- Does the shoe have a low heel (less than 2.5cm)? As the height of your heel increases, the pressure underneath your foot becomes greater.
- Does the shoe have a broad heel with good contact with the ground?



- Is the heel counter of your shoe firm? The heel counter provides support for the shoe and should be firm to press.
- Does the toebox have adequate width, depth and height to provide support to the foot and allow the toes to spread naturally? If you use an ankle-foot orthosis, adequate width across the toe box is important.

- Does the shoe have laces, buckles or elastic to hold it onto your foot? A podiatrist, occupational therapist or physiotherapist can advise on the best type of shoes to suit your needs. They can show you different ways to lace your shoes.
- Does the shoe have about 1cm space between your longest toe and the end of your shoe when you stand up? Avoid toe cramping.
- Does the shoe have a cushioned, flexible sole? Rubber soles provide more shock absorption, are more stable and are non-slip for safety.
- Are the shoes made from adequate material? Leather holds its shape and breathes well in most climates. However many people find walking shoes (material uppers) are just as comfortable and better priced.
- Does the shoe protect your feet from injury (eg. if you stepped on a sharp object)?
- Are the shoes the same shape as your feet?
- Is your shoe right for the occasion? Sports or walking shoes are the ideal shoe for daily wear. Slippers provide no support and should be worn only to keep feet warm when sitting.

Shopping tips

- Don't shop for shoes when your feet hurt.
- As your feet tend to swell throughout the day, the best time to try on new shoes is mid-afternoon.
- When you try on shoes, wear the hosiery or socks that you would normally wear.
- Be sure to bring your ankle-foot orthosis, foot orthotics or other supports with you when shopping for shoes.
- Shoes should fit properly when you buy them. They should not need to be stretched or "broken in".
- Buy shoes by fit, not by size. The size marked on shoes should only be used as a guide.
- Make sure you try on both shoes, properly laced in the store. Many people have one foot that is a slightly different size to the other.
- Ask if you can try the shoes on different surfaces within the store (ie. carpet, concrete, tiles). Be sure to walk around the store to check the fit of the shoes as well.
- Don't feel pressured by sales assistants. If the shoe doesn't seem right, don't buy it.

5. Finlay O.E. Footwear management in the elderly care program. *Physiotherapy* 1986; 72(4), 172 – 178.
6. Australasian Podiatry Council. (n.d.). Your podiatrist talks about footwear. [Brochure]. ACN 008 488 748.
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2.3 Exercise

2.3.1 Background Information

These guidelines detail exercise program development, supported by the literature as being effective in falls prevention in the older population. The optimal type, intensity, frequency and duration of exercise for falls prevention is unclear [1-3]. The National Physical Activity Guidelines for Australians recommends “30 minutes of moderate intensity physical activity on most, preferably all, days.” Much of the current literature focuses on community dwelling individuals. The benefit of exercise with relation to falls prevention has not been shown to be as strong for older people in hospitals or aged care facilities [1, 4]. This may indicate a need for further research regarding falls prevention and exercise in these settings. The literature also highlights a need for additional research into the optimal type, frequency, duration and intensity of exercise that is most effective in reducing falls risk in older people [1-3]. It would also be of benefit to explore the theory that exercise improves the quality of life and may help to increase cognitive abilities in those people with Alzheimer’s disease [5].

Modifiable falls risk factors in older people include impaired balance and loss of muscle strength [6]. It is generally agreed that a broad based program that includes balance training, muscle strengthening and low impact cardiovascular fitness training is most effective in reducing falls [1, 2, 7, 8]. The evidence appears to be strongest for balance training and slightly less so for resistance and aerobic training [1, 9]. However, recommendations for a

balanced exercise program for the older person would include each of these components (ie. balance training, muscle strengthening and low impact cardiovascular fitness training) for optimal health and functioning. Most exercise programs aim to improve strength, balance and flexibility using moderate activity, resistance or endurance training and strength building activities [10, 11].

2.3.2 Types of Programs

Balance Training

Balance training is recognised as the key component of any exercise program designed to reduce falls [1, 9]. Balance training aims to improve postural stability. A person with poor postural stability has higher risk of falling while standing or moving [12]. Balance and flexibility training would include activities which: [2]

- Address both static and dynamic balance.
- Are performed on different surfaces and include crouching, bending over and stretching.
- Are a component of movement form such as Tai Chi movements which test proprioception and flexibility.

Stretches performed unilaterally will act as balance training and improve flexibility and functional range of motion. To be effective in falls prevention, balance exercises should be performed at a level that stresses balance control, under the guidance of a physiotherapist [13].

Tai Chi Quan

Tai Chi Quan (TC) has gained recent popularity as an effective method of balance training in older people, aiming to reduce falls [1, 8]. Tai Chi is a martial art that has been used for centuries as a form of exercise in oriental cultures [14, 15]. It involves slow, controlled and graceful movements with attention given to body position and breathing [15]. TC can be made more complex by increasing balance demands and body rotation [14]. TC is often performed in groups. There are no special equipment or space needs; however TC should always be taught by an approved TC instructor [14]. Further research is required before TC can be recommended as the preferred form of balance training [1].

Strengthening and Weight Bearing

Progressive resistance or strength training in the older population requires further evaluation. Some studies however, claim that many functional gains can be achieved by increasing muscle mass through this form of exercise [12]. There is strong evidence that resistance or strength training for older people can maintain bone mineral density, which may reduce the risk of hip fractures [8].

Examples of resistance or strength training exercises documented in the literature include the use of gym equipment, elastic tubing, home based exercise programs and walking [8]. A structured 'general' exercise program that improves muscle strength may be more acceptable for older people than doing repetitive muscle exercises. Irrespectively, to achieve increased muscle strength and mass, the exercises must be of sufficient intensity and duration [2, 3].

Cardiovascular Training

Walking appears to be a popular form of cardiovascular training among older adults. Walking is easily performed, low cost and requires no special training or equipment [8]. It also incorporates other forms of exercise such as balance training, joint mobility and lower extremity strength training [16]. This may explain the success of walking as an effective form of exercise in falls prevention programs as it may target multiple identified risk factors.

Walking can be easily adapted to provide increasing challenges for the older adult by varying the floor surfaces and gradients and increasing the intensity, duration and frequency of the walking program. One method of varying the walking surfaces and gradients may be the use of a purpose built outdoor walking circuit. Surfaces such as paved or stamped concrete, stepping blocks, various types of gravel or stone, timber boardwalks, ramps and steps may provide additional challenges that are difficult to simulate in an indoor environment. Other forms of exercise such as balance or strengthening exercises can be incorporated into the walking program. Sand walking is an aerobic activity (promotes cardiovascular health) and a dynamic balance training component which trains the body to adapt to small changes to one's centre of gravity.

Circuit Activities Include:

- Stair climb, exercise cycles, Swiss balls – leg press/squat.
- Chair sit/stand, stepper/walker.
- Seated leg extension, arm curl/extension.
- Leg lifts (hip flexion/extension and hip abduction/adduction).
- Standing leg curls, standing up on toes.
- Bag lift/overhead lift (small bean bags).
- Chest press/back pull, trunk flexion/extension.
- Walking platform on differing surfaces eg. sand, pebbles, padded mats.

2.3.3 Exercise for Specific Groups

Exercise needs vary greatly for different patient/resident groups. For example, a patient/resident with a recent hip

replacement may require a different exercise program to a resident in an aged care facility.

The role of the physiotherapist may include compilation of an appropriate exercise program based on the patient's/resident's current health status, abilities, preference and individual falls risk factors. Ideally the exercise program should attempt to address different components of exercise ie. balance training, muscle strengthening and low impact cardiovascular fitness training [1, 7, 8, 12].

2.3.4 Preadmission and Discharge Planning Strategies

Preadmission requirements for exercise will vary depending on the reason for admission to a facility. Preadmission strategies are difficult to administer in facilities such as rehabilitation services, acute medical units, hostels and nursing homes, due to the immediacy of admission. Units such as orthopaedic, day surgery, day therapy, etc. may offer a screening process whereby a preadmission exercise program could be compiled by the physiotherapist. The program will depend largely on the patient's/resident's reason for admission and individual falls risk factors. For patients/residents who are likely to be discharged from a facility, it is important to consider continuity of their exercise program as part of the discharge planning process. This could be achieved through several means:

Individualised Home Program

The role of the health professional may involve the development of an individualised home program. The home environment should be taken into consideration. The program should be provided in clear written form, with diagrams if possible. This may improve exercise compliance as the patient/resident has information to refer to and a visiting health care worker or GP could further encourage the program.

Community Services

In the patient's local area, there may be appropriate exercise programs offered through the Community Health centre. Alternatively other health promotion services such as National Heart Foundation of Australia, Diabetes Australia or Active Australia may address exercise needs in the local community.

Outpatient or Day Therapy Services

If outpatient or day therapy services are offered by the facility, the physiotherapist may assess whether the client is appropriate to return for exercise intervention.



Review by GP

The GP may review an exercise program particularly for those patients/residents with a chronic health condition or those who have been previously inactive.

2.3.5 Administration Process

An exercise program for an older person should be designed by a physiotherapist, based on exercise physiology, assessment findings and individual factors, as mentioned previously. The ideal exercise program to reduce falls should be affordable, acceptable to the older person, easy to implement, effective and flexible [2, 6]. Programs should also aim for long term intervention for the sustained benefit of exercise [1].

Types of exercise vary greatly in the literature. Some examples of exercise interventions used for falls prevention are as follows:

Warm Up Period (5 minutes) [3]

- Moderate paced walking with arm movements [3].
- Ankle strengthening exercises [7].

Conditioning Period (35 minutes) [3]

- Sustained walking with supervision [7].
- Moderate intensity strengthening exercises with ankle cuff weights [6].
- Cardiovascular fitness training, balance, strengthening, endurance and co-ordination exercises [3].
- This may be completed in 3 sets of 10 minutes throughout the day.

Stretching Period (15 minutes) [3]

- Tai Chi [2, 14, 15].
- Stretching of all muscle groups [3].
- Relaxation period, 5 – 10 minutes [3].
- Controlled breathing and muscle relaxation [3].

The time spent on these activities is dependent on the individual patient/resident and the group dynamics.

2.3.6 Guidelines for Long Stay Residents

Some considerations are required for long stay or physically inactive patients/residents.

- Medical advice is recommended for people who have been previously inactive or have chronic health problems such as heart disease.
- The exercise program should be appropriately matched to patients'/residents' current physical or health status.
- The program should be commenced at a gentle pace and increased in intensity over a number of weeks. Progress should be closely monitored by a physiotherapist.

2.3.7 Individual vs. Group Education

In studies of community dwelling individuals, both group and individual home programs have been found to be effective in falls prevention [7]. There are few studies documenting the same in hospitals and aged care facilities. The benefits of individual or group education in falls prevention are as follows:

Individual

- The exercise program can be tailored specifically for the individual based on ability and preference [1, 13].
- May allow for one on one supervision with the program by the physiotherapist.

Group

- More effective use of time if managing large client groups.
- Promotes socialisation and encouragement from other participants [2].
- Supervision is more effective in smaller groups rather than larger ones.

It is unclear whether older people prefer individual or group education and compliance may be enhanced if staff offer both approaches [2]. This allows for individual choice, which is critical to long term compliance with exercise [17]. The program could be tailored for the individual in the early stages of treatment and then incorporated into group treatment to ensure continuity.

2.3.8 Recommendations for Specific Need Patients/Residents

Consideration should always be given regarding different patient/resident groups with respect to exercise. Some cultures place less importance on physical activity than others. In order to make an informed decision regarding their involvement in any exercise program, all patients/residents have the right to be advised about the benefits, risks or contraindications of any exercise program. The following points should be considered in the design of any exercise program:

Cognitively Impaired

- Structured program with clear instructions and/or demonstrations, with consideration given to the patient's/resident's cognitive ability.
- Small groups or individual sessions with sufficient staff supervision.
- Repetition and practice.
- Limiting distractions and extraneous information.
- Ensure enough equipment for all patients/residents to be kept occupied at once.
- Always take individual patients'/residents' daily



condition and attitude into account when encouraging participation ie. If the patient/resident is unwell or unco-operative, limit activity times and types.

- Flexibility with schedule and timing is a must. Allow resting between activities.
- Work in small groups at different activities so no one is kept waiting.
- Staff and relatives joining in with the activities (ie. doing the activities) may encourage the patients/residents.
- Treat as a social activity, not as a chore. Have music playing and refreshments.
- Reminisce while doing activities with residents.
- Keep record of improvements to encourage residents and give lots of verbal encouragement and feedback.

Benefits for Patients/Residents May Include:

- Settling well after the activity.
- Eating better, drinking more fluids.
- Urine less concentrated and odour from residents' urine less strong.
- Less disruptive behaviour.
- Residents helping to tidy up after activity.
- Increased socialising among residents.
- Increased ability to do activities; improvements in strength, flexibility, balance and gait.

Mental Health

- Structured program with clear instructions and/or demonstrations, with consideration given to the patient's/resident's current mental health.
- Small groups or individual sessions with sufficient staff supervision.
- Safety.

Language Barriers

- Use of an interpreter when appropriate.
- May need to vary the program to include non-verbal gestures and demonstrations.
- Consider varying cultural needs and values.

2.3.9 Special Considerations for Care Setting Type

Any exercise program is dependent on the available space, equipment, budget and staffing of the particular facility. The patient/resident population will also vary. Studies on exercise and falls prevention have focused on a diverse range of successful programs. The exercise program offered should always match the facility and patient/resident needs. Consider using items to adapt the current environment to make surroundings pleasant and relaxing to enhance the social aspect of programs (plants, posters, comfortable chairs and music).

2.3.10 Fear of Falling

Patients/residents with fear of falling may attempt to restrict their activity. This may, as a result, increase the risk of falling due to inherent muscle atrophy and deconditioning that is associated with long term physical inactivity [18]. It is important to remember that:

- Some types of exercise may reduce the risk of falls [1, 2, 7, 8].
- Exercise is generally safe for older people (under the guidance of a health professional) [2], and may have benefits to general well being.

2.3.11 Exercise Brochure

This brochure may be copied for use in your facility.

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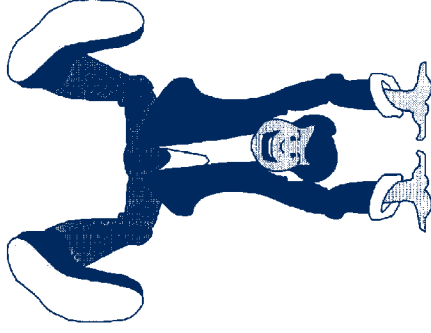
How Often?

- The National Physical Activity Guidelines for Australians recommends “being active every day in as many ways as you can.”
- The Guidelines suggest doing “at least 30 minutes of moderate intensity physical activity on most, preferably all days.”
- It is important to remember that the 30 minutes total need not be continuous eg. three sets of 10 minutes throughout the day.
- Remember if you haven’t exercised recently it is important to start gradually and increase your activity slowly.

Special advice for people with a chronic health condition or who have not exercised for a long time.

- Always check with your doctor before starting an exercise regimen.
- Please discuss with your physiotherapist or other health care worker about which of the above suggestions are appropriate for you. You may need further guidance or advice.

Don't Go



Head Over Heels

Information about:

- Exercise
- Falls prevention

References included:
Active Australia. (2000). *Getting Started*. [Brochure]. ISBN 0 642 26381 7

Commonwealth Department of Health and Aged Care (2001). *National Physical Activity Guidelines for Australians*. [Brochure]. Sydney: University of Western Australia and the Centre for Health Promotion and Research.

This brochure was developed by staff at the Rehabilitation Unit, QEII Jubilee Hospital, as part of the Quality Improvement and Enhancement Program



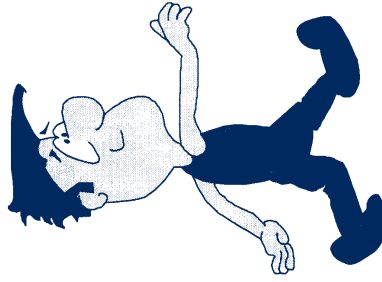
Queensland Government
Queensland Health

Did you know?

- 30% of people older than 65 years of age fall every year.
- Having a fall could result in a hip fracture or other serious injury, pain, loss of independence, loss of confidence and a fear of falling in the future.
- Regular physical activity or exercise is important for everyone including older people.
- Some types of exercise can reduce your chances of falling over.
- Regular exercise can improve:
 - balance
 - joint mobility
 - muscle strength
 - bone density
 - general health & wellbeing

Before you start exercise...

- Check with your doctor about any exercise regimen. This is particularly important if you
 - have a chronic health condition
 - haven't exercised recently
 - have questions you wish to ask about exercise.



Which exercises?

- There are many exercises that have been successful in preventing falls in older people.

- Some exercises that have been successful in falls prevention studies have included:
 - walking
 - using an exercise bike or other gym equipment
 - strengthening exercises
 - balance classes
 - Tai Chi or
 - a combination of different exercises.
- Always warm up before exercise and cool down afterwards to avoid injury.
- Discuss your ideas with your physiotherapist or health care worker, so they can work out the best type of exercise program for you.

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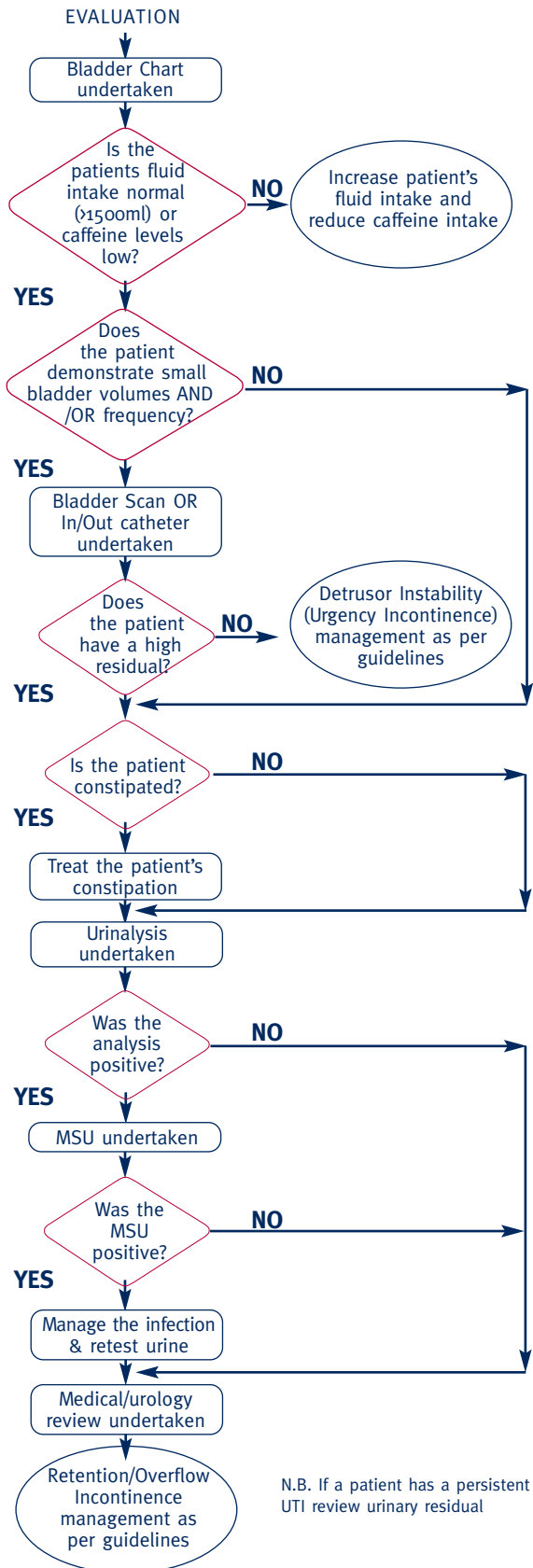
2.4 Continence Management

(To be read in conjunction with the Incontinence Flowchart 2.4.2.)

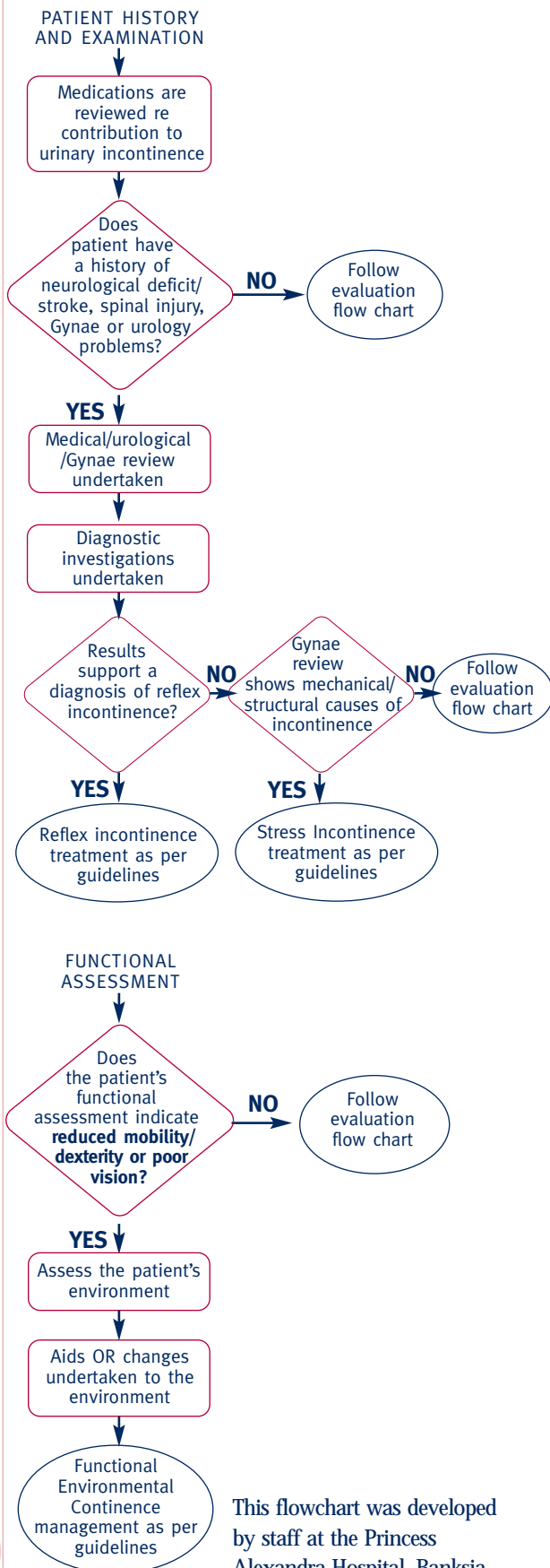
2.4.1 Background Information

Incontinence is not part of the normal ageing process but has been identified as a risk factor for falls [1]. In acute care settings, episodes of incontinence are often transitory and may be related to acute illness [2]. Incontinence may increase the risk of falls due to the older person needing multiple trips to the toilet [3]. Often performing a secondary task, such as walking and concentrating on getting to the toilet is difficult for older people [4]. The key to preventing falls related to urinary incontinence is to undertake a thorough assessment aiming to identify and treat factors causing incontinence. Once a diagnosis has been made suitable treatment strategies can be developed. A doctor, nurse continence advisor or a registered nurse generally undertake the assessment and implement a treatment regimen. Other health professionals may also be involved such as physiotherapists. Each facility/health district may have their own protocols on who is a suitable qualified health professional to undertake a continence assessment [5].

2.4.2 Incontinence Flowchart



This flowchart was developed by staff at the Princess Alexandra Hospital, Banksia Ward, Princess Alexandra Hospital Health Service District, as part of the Quality Improvement and Enhancement Program.



This flowchart was developed by staff at the Princess Alexandra Hospital, Banksia Ward, Princess Alexandra Hospital Health Service District.

2.4.3 History and Examination

A history needs to be obtained from the patient/resident, family or other health professionals involved in the care of the patient/resident [5].

Risk Factors Related to Incontinence

- Medical History: diabetes, renal disorder, recurrent urinary tract infections, neurological disorder, spinal injury, back pain, cerebral vascular accident, dementia, congestive cardiac failure, altered sleep pattern.
- Surgical history: urinary tract surgery, cystoscopy.
- Female: hysterectomy (abdominal or vaginal).
- Male: urethra stricture, suprapubic prostatectomy, transurethral resection of the prostate (TURP).
- Gynaecological/Obstetrics history.
- Cognitive status – normal, mild, moderate or severe altered status.
- Nutritional Status - older people often have a diet low in fibre and fluid.
- Medications (refer to medication review 2.1).

These are some medications that can either cause urinary incontinence/retention or contribute to it, for example:

- Anticholinergics - impair detrusor contraction.
- Sedatives/hypnotics - can produce confusion.
- Narcotics - impair detrusor contraction.
- Diuretics - can lead to brisk filling of the bladder and subsequent rush to toilet [1].
- Alpha-adrenergic agonists - increase tone of internal sphincter.
- Alpha -adrenergic antagonists - decrease tone of internal sphincter.
- Calcium channel blockers - decrease detrusor contractions [6].
- Alcohol can contribute to increased urinary frequency and urgency [6].
- Caffeine can cause bladder instability [6].

Urinary Symptoms Include: [5]

- Urgency, frequency, nocturia, dysuria, haematuria, hesitancy, burning or pain, odour, incomplete voiding.

Contenance History [7]

- The person's perception of their incontinence: does it interfere with social activities?
- Are they depressed or anxious?
- Onset - when did the incontinence first occur?
- How often does the incontinence occur?
- Are the episodes of incontinence improving, static or worsening?
- Are aids or pads used? If so what aids or pads are used?
- Are the aids or pads effective?

Physical Examination [8]

Consent from the patient/resident must be obtained prior to the physical examination. A complete physical examination should be performed on all patients with incontinence by a suitably qualified health professional. This examination will include:

- Abdominal examination to evaluate bladder distension.
- PV examination for urethral dryness, urine stress test and discharge.
- Auscultation of bowel sounds.
- Prolapses - prolapse of the uterus, bladder, urethra or rectum can contribute to incontinence.
- Prostate enlargement - can cause obstruction of urine.

Diagnostic Investigations [6]

- Bladder scan or in/out catheter to measure residual urine in bladder post-void.
- Blood tests to measure renal function.
- Urodynamics post urologist review. Urodynamics is especially useful in a person whose history is inconsistent or confusing, with more than one type of incontinence, with prior bladder or sphincter procedures or the person who does not improve with standard treatment.
- Ultrasound of renal system, bladder and abdomen.

Bladder Chart/Continence Diary [9]

A bladder chart should be recorded for a minimum of 3 days to assist with assessment and diagnosis. A bladder chart should record the following:

- Fluid intake, time and type of fluid (especially drinks containing caffeine eg. coffee, tea, cola, as caffeine stimulates unstable bladder contractions causing frequency or urgency).
- Daily output of urine, time, amount and frequency.
- If the person is wearing continence pads the amount of leakage (what was occurring when leakage occurred) and time of pad change.
- Episodes of incontinence and time.
- Nocturia to determine if the patient is being disturbed at night.

Urinalysis

- If there is presence of nitrates, protein, leucocytes or blood report to the doctor, as a micro urine may be required.
- Recurrent urinary tract infections can indicate that the person is retaining urine so a post-void residual should be undertaken.

Bowel Assessment

The person's normal bowel habits and any significant change must be determined as constipation can considerably affect bladder function.

If constipated laxatives, suppositories or possibly an enema may be required to treat the constipation before completing the continence assessment.

A person with a history of constipation may need preventative treatment, for example pear juice, prune juice or increased fibre and fluid.

Functional Assessment [6]

- Problems with mobility.
- Difficulties in transfer to toilet.
- Foot problems.
- Clothing suitability.
- Problems with personal hygiene.

2.4.4 Type of Incontinence and Treatment

The cause of urinary incontinence should be established through assessment. Following this, a treatment plan needs to be established. The aim of managing urinary incontinence is to alter those factors causing incontinence and to improve the effects of being incontinent for the individual and the carer.

Elderly people may have more than one type of urinary incontinence, which can make assessment findings difficult to interpret [5].

Urge Incontinence

Detrusor instability is a common cause of urinary incontinence in the elderly. This involves early forceful detrusor contractions well before the bladder is full, creating symptoms of urgency and frequency. Urinary incontinence occurs when strong detrusor contractions overcome urethral resistance. Detrusor overactivity can be found in conditions of defective central nervous system or increased afferent sensory stimulation from the bladder. Examples of disorders which impair the ability of the central nervous system to send inhibitory signals include stroke, tumours, multiple sclerosis and Parkinson's disease [6].

Management of Urge Incontinence

- *Anticholinergic medication* may be prescribed to suppress early contractions. If a person on anticholinergic medication develops a urinary tract infection or symptoms of outflow obstruction a post-void residual volume should be considered.
- *Pelvic muscle exercises* strengthen both the periurethral and pelvic floor muscles. Assistance may be required from a physiotherapist or nurse continence adviser.
- Individuals with detrusor overactivity often respond to *bladder re-training* provided they are motivated to do so and are cognitively intact.

- Regular toileting or *bladder training* [2] may be helpful for patients/residents with cognitive impairment.
- The *location of the toilet* is important for a person with urgency, as they need to get to a toilet quickly. If a toilet is not close by, a commode or urinal for men may be required, especially by the bedside at night.
- *Continence pads* may be required to contain urine.
- *Increased fluids* should be encouraged as elderly people may have a poor fluid intake. Often people with urinary incontinence restrict their fluids in an attempt to control incontinence [6].
- Encourage the *reduction of caffeine* intake to decrease the symptoms of urgency and frequency [6].

Stress Incontinence

Stress incontinence is sometimes referred to as genuine stress and is associated with women. Individuals with stress incontinence have inadequate internal sphincter tone and urethral resistance to prevent urine loss when an increase in bladder pressure occurs [6]. Incontinence occurs when there is a visible leakage of urine with a rise in abdominal pressure such as when coughing or during clinical examination.

Management of Stress Incontinence

- *Oestrogen therapy* may be prescribed to improve peri-urethral and vaginal tissue thickness and quality.
- *Surgical procedures* - there are surgical procedures, which may be helpful for stress incontinence due to pelvic relaxation or internal sphincter insufficiency eg. Vaginal or bladder repair. Refer to a gynaecologist for assessment.
- *Pelvic muscle exercises* (as above).
- *Encourage fluids* (as above).
- *Bladder training* (as above).
- *Continence pads* may be required [8].

Overflow Incontinence

This may result from conditions that cause urinary retention, and is generally due to a hypotonic or atonic bladder or obstructed urinary outflow [6]. The bladder becomes distended and there is a high residual with increased pressure in the bladder forcing the urethra to open causing incontinence.

Management of Overflow Incontinence

- *Intermittent self-catheterisation's* for chronic management for those individuals who are cognitively intact and have adequate manual dexterity.
- *Indwelling catheter or supra pubic catheter* may be required for short periods until normal bladder function returns or for chronic management of individuals who are unable to empty their bladders

and have not responded to treatment.

- *Fluids* should be increased unless contraindicated.
- *Cranberry juice or cranberry tablets* may help to acidify the urine and assist with reducing infection [7].
- *Surgery/TURP* if prostate enlarged [6, 8].
- If retention is related to *constipation* the person may require preventative measures or regular aperients.

Reflex Incontinence

Reflex incontinence is described as urine loss due to involuntary urethral relaxation in a neuropathic absence of sensation, for example, in paraplegia [7].

Management of Reflex Incontinence

- *Continence pads or penile sheaths* to contain urine and enable the person to achieve social continence.
- *Indwelling catheter or suprapubic catheter* may be required.
- *Skin care* to prevent excoriation.

Functional Incontinence

Functional incontinence occurs when the person is unable to reach the toilet on time due to physical problems, cognitive problems or environmental barriers [8].

Management of Functional Incontinence

- A *physiotherapist* can assess the person's mobility and dexterity and implement a treatment plan.
- An *occupational therapist* is skilled in assisting the individual to become independent in the activities of daily living including personal hygiene and toileting. The occupational therapist can also assist with clothing management, modifications of the toilet or organising appropriate aids.
- Mobility may be *improved* by relieving pain and providing *appropriate walking aids* and *footwear* for patients suffering from arthritis, contractures, deconditioning and neurologic impairment.

Dementia

Individuals with dementia may benefit from prompted voiding, scheduled toileting and attention to behaviour signals indicating the desire to void [4].

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2.5 Restraints

2.5.1 Background Information

The 1995 HCFA Interpretive Guidelines encourage the use of less restrictive interventions. The use of mechanical restraints does not cease the patient's/resident's desire to get out of bed. It may frustrate the patient and make the desire more difficult and hazardous to achieve. If a patient or resident is already agitated, they will generally fight harder once restrained [1]. The emphasis should therefore focus on alleviating the specific problems. The highest risk of falls for patients/residents has occurred during the time in which the patient/resident had been placed in a restraint. Restraint programs have reduced restraint usage by more than 60% in an acute care setting. Interventions are now shifting from controlling to responding to individual behaviours [2].

Patients/residents have sustained serious injuries and others have died while attempting to climb over bedrails. Bedrails may cause a resident to fall from a greater height or become entangled in the rails. The number of serious injuries from falls has not been shown to increase when bed rails have been removed [3]. Side effects from restraint usage include strangulation, asphyxiation, fatal cardiac arrhythmias, and cardiac contusions from a blunt trauma to the chest. Immobility from restraint usage may result in: skin abrasions, mild bruising, entrapment, strangulation, negative psychological effects, constipation, pressure sores, aspiration pneumonia, decreased muscle mass and strength. Other side effects include apathy and withdrawal, disturbance of sleep patterns, agitation and aggressive behaviour. Restraint usage has been shown to correlate with increased length of stay in hospital, increased confusion, and emotional desolation and infections [4].

Associated Arguments Related to Restraint Usage Supporting Restraint Usage

- Ethical – imminent harm versus restraint.
- Beneficence – assist with patient/resident safety and well-being, prevent falls, act as a protective device, make caregiving more efficient, personal

responsibility to protect, to prevent the resident from persistently destroying property.

- Professional – for medical treatment of a patient/resident with proper consent [5].

Against Restraint Usage

- Autonomy – respect for patients'/residents' rights to make informed choices.
- Protection - prevent harm to individual patient/resident or other patient/residents.
- Patients/residents who have not been restrained maintain better health and ability to walk and display an increased ability to perform activities of daily living [6].

Areas Identified for Further Research

- Perceptions (patient/resident, family/caregiver) on restraint use.
- Patient/resident education programs.
- Efficacy of alternate measures.
- Validation techniques.
- Psychological effects and short- and long-term outcomes of various interventions with aggressive psychiatric patients/resident's [1].

2.5.2 What Constitutes a Restraint?

If an item is used as a mechanism to control behaviour, the item may be considered a restraint. If, on the other hand, a patient/resident is incapable of moving him/herself, the device should not be viewed as a restraint.

Physical Restraints

Restraint is defined as 'the intentional restriction of a person's voluntary movement or behaviour by the use of a device or physical force for behavioural purposes' [6]. Some examples include lap belts, table tops, meal trays, bedrails, waterchairs and deep chairs that are difficult to get out of.

Chemical Restraints

Whether or not a medication is viewed as a form of restraint, will depend on the individual nature of the patient/resident. This hinges on whether an agent is given as part of the treatment of patient's/resident's condition or simply to control the patient's/resident's behaviour [7]. Chemical restraint is 'the intentional use of medication to control a person's behaviour when no medically identified condition is being treated, where the treatment is not necessary for the condition or amounts to over-treatment for the condition. Chemical restraint includes the use of medication when the behaviour to be affected by the medication does not appear to have a medical cause and part of the intended pharmacologic effect of the drug is to sedate the person for convenience sake or disciplinary purposes' [6].

Controlling Bodies and Documentation

There are three professional regulatory bodies:

1. OBRA: Omnibus Budget Reconciliation Act (1990).
2. HCFA: Health Care Financing Administration (1992).
3. JCAHO: Joint Commission on Accreditation of HealthCare Organisations (1996).

2.5.3 Guide to Clinical Evaluation and Assessment

Target Group

Residents of aged care facilities and patients of hospitals assessed as being at risk for falls, particularly those identified with one or more of the following: memory disorders, impaired mobility, potential injury risk, incontinence and sleep disturbance [8].

Model of Service Delivery

Who Decides?

Decisions whether or not to use a restraint in a particular case requires a professional decision-making process from health professionals involved in the patient's/resident's care. Nurses have been reported to be the most intimately involved professionals in decisions to restrain patients/residents and restraint implementation. Assessments to determine the use of bed rails, other physical restraints and chemical restraints must be thorough and performed on an individual patient/resident basis. Interventions should be tailored to promote the older person's safety and quality of life and education of staff members within the multi-disciplinary team is essential [5].

Documentation

Documentation of the use or non-use of physical and chemical restraints should occur routinely. More specifically, circumstances leading to the use of restraints (physical and chemical) or seclusion, monitoring requirements and staff debriefing should be documented on a regular basis. Family members should be notified and consulted regarding the intention to restrain [5].

Strategies for Managing Difficult Behaviours

- Identify the behaviour that is problematic and identify the cause. It is preferable to anticipate and deal with behavioural problems early.
- Make appropriate modifications to the physical environment to maximise residents' functional abilities and reduce frustration.
- Find alternatives to the use of restraints for a range of problem situations [6].

Assessment to Determine Bedrail Removal [9]

The following should be reviewed:

- Patient/resident behaviour and the reason for bed exit.
- History of falls.
- Bed-related functional status.
- Cognitive and sensory abilities.
- Restrictiveness of the alternative.

Alternative Strategies to Restraints [9]

- Individualising daily routine: sleep patterns, time spent in bed, activity patterns, toileting programs, observation and regular rounds, meeting physical needs.
- Rehabilitation and exercise programs (including safe transfer techniques).
- Teaching of behavioural compensatory strategies for physical and cognitive impairments. Use of distractive devices for patient/resident (distraction box, rocking chair).
- Education of the patient/resident, family and staff on alternative strategies.
- Companionship.
- Bedside commode.
- Positioning cushions/swimming noodles as boundary markers for bed edge.
- Mats on floor (protects patients/residents if they roll out), mattress placed on the floor.
- Lower bed, place bed against the wall – provides a one-sided barrier.
- Alarm device – alert staff to patients/residents attempt to exit bed.
- Use night light – assists with orientation and prevents unsafe transfers at night.
- Trapeze/bed poles – assists with bed mobility (side-to-side turning, transfers).
- Chair or table at bedside – can be used to assist with transferring/turning.
- Therapies: water, reminiscence groups, validation, de-exalation techniques. Verbal de-exalation is a complex interactive process in which the patient/resident is redirected toward a calmer personal space. Aims include reduction of anxiety, maintenance of control and avoidance of violent acting out [1].

Compliance Strategies for Staff Reduction in Restraint Usage [4]

- Team building and competence are areas that need to be addressed to effectively change a culture. Leadership by the senior nurse has been a major ingredient in reducing restraint usage.
- Use of restraint reduction rounds encourages regular multi-disciplinary review of the individual and restraint usage.



If Restraints Are Required

Restraints should only be used as a last resort. Interventions should be implemented in a staged method with least restrictive and least invasive measures adopted first. Restraints should not be used as a substitution for supervision. Patients/residents who are restrained require 1:1 supervision (checking every 15 minutes), monitoring vital signs and adverse reactions, maintaining hydration and checks of skin integrity, adequate circulation and hygiene. The emotional responses of the individual also need to be addressed [1]. To date, there is no widespread evidence that the use or removal of restraints will reduce falls [10].

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3.1 Hip Protector Pads

3.1.1 Background Information

To give patients/residents optimum protection, health care providers may need to consider the risks and advantages of implementing injury prevention strategies [1]. The wearing of a pair of Hip Protector Pads is an injury prevention strategy; they will not prevent falls or protect other areas of the body [2]. Hip Protector Pads may also be referred to as 'Hip Protectors', 'Protector Shields' or 'External Hip Protector Pads'. These guidelines will refer to them as Hip Protector Pads (HPP's).

HPP's work by absorbing and dispersing the energy created by a fall away from the hip joint. The soft tissues and muscles of the surrounding thigh absorb the energy instead. The use of HPP's in nursing home patients is reported to reduce the relative risk of hip fracture by 53% by reducing direct trauma to the hip area. This was first reported in 1993 [3] and supported by a recent publication in 2000 [4] which reported a 60% reduction in the relative risk of hip fractures by the use of HPP's among nursing home residents and other frail elderly people. No specific research is available at this time of the efficacy of HPP's in an acute hospital environment, although they are quoted as being used as a part of multifaceted intervention [5].

In recent years there have been a range of hip protector pads become available on the Australian market. Due to the numbers required to achieve adequate patient/resident coverage, two types were selected for use in the development of these guidelines. This choice was determined by ease of availability and per unit cost. For information regarding costs and suppliers of a variety of hip protector pads, contact the Independent Living Centre [6].

3.1.2 Wearing Procedure

One type (here on referred to as type A) is made of soft crated foam with a removable cotton cover. They can be held in place using velcro attached to a cotton belt or disposable stretch net pants. The HPP's must be kept over the hip area to be of any benefit should the patient/resident fall. Stretch pants maintain the HPP's in place over the patient's/resident's neck or femur. Contenance pads can be comfortably worn with these types of HPP's. The continence pad is fitted first, next to the patient's/resident's skin, then the stretch net pants, containing the HPP's. Eight facilities (4 hospitals, 4 aged care) received a total of 236 type A HPP's as a part of the falls program.

The second type (here on referred to as type B) consists of a firmer curved shell, sewn or slipped into a pocket in a lycra undergarment similar to underpants or 'bikepants'. The pocket holds the shield in the correct place over the hip, so the hipbone is protected, should the patient/resident fall. Sizes are available from small to extra large and a design is available specifically for males. These are fitted depending on the size of the patient/resident (see manufacturers' guidelines). Contenance pads can be worn in separate pants, underneath the garments holding the hip protector shields. An additional four facilities (2 hospitals, 2 aged care) received a total of 65 pairs of this type of HPP's.

3.1.3 Limitations and Lessons Learned

Despite these being well supported in the literature, the main barrier identified in implementing HPP's was compliance. This made it problematic to establish defined guidelines for best practice but has provided a wealth of anecdotal evidence into the issues to be addressed in ensuring acceptance of HPP's in Queensland Health facilities. A specific limitation for widespread application related to the Queensland climate, and the lack of air conditioning particularly prevalent in the northern and western health districts. Clearly more research is required in warm climates as the existing studies that claim positive reductions in fracture rates have been conducted in Denmark [3, 4], England [7] and Finland [8]. The second limitation with the existing evidence base is ensuring that the pads fitted are the same type as that used in the research, and correctly applied.

Feedback elicited by focus groups and surveys from health professionals in the program sites provided the following perceptions as to why HPP's were difficult to implement as standard practice:

- Development of skin rashes, and increased perspiration.
- Rub on fractured neck of femur wounds.
- Uncomfortable to sleep in and concern re pressure areas.
- Difficult to launder, particularly with incontinent patients and expensive to replace.
- Infection control issues.
- Patients refusing to wear or pulling hip protector pads out.
- Pads too big/bulky, particularly with incontinence pads, catheters and dressings.
- Pads move.
- Lack of information with products supplied regarding the appropriate fit.

- Staff compliance and scepticism re efficacy.
- Price, style and comfort for patient including image perception.

Attempts at altering type A pads included adding a belt, cutting the foam to resize and re-covering. As a general observation type A was preferred in acute facilities, while type B was difficult to implement due to laundering difficulties. Aged care facilities had greater acceptance of type B, as these were less bulky.

The above is not meant to deter continued attempts at introducing HPP's as there were many examples of successful implementation. The key issue in successful sites would appear to be the commitment of staff to patient care and quality improvement, particularly where this is supported by senior staff. Acceptance was also higher in longer-term environments. A feature of these is a lower patient/resident acuity, an increased familiarity with the patient/resident, and a slower rate of population turn over. Compliance of both patient/resident and staff is an issue in all environments.

3.1.4 Assessment of Patient/Resident Suitability

Each patient/resident should be individually assessed re their suitability for HPP's. Generally a patient/resident is encouraged to wear HPP's if they have been assessed as a 'High Falls Risk' using a risk assessment tool [5, 9]. (See Section 1.1 Risk Assessment Tool).

3.1.5 Suggestions to Overcome Non-Compliance

It has been shown that the rate of compliance of wearing HPP's amongst a patient/resident increases if information and education is provided. The nurse, therapist/patient relationship is one which has the ability to be beneficial in developing self-care behaviours to prevent accidents or illness [10]. Compliance by staff may be improved with ongoing education and training of staff [2].

3.1.6 Night Use Guidelines

The occurrence of falls may increase throughout the evening and night [11]. Patients/residents need to continue wearing their HPP's during the day and at night. It has been found that HPP's may be very beneficial for night use for patients/residents assessed as high falls risks, provided the pads have been correctly fitted [7]. The soft, loose pads (type A) are relatively comfortable when correctly positioned [12] and can be worn more easily by the patient in bed, as they are less obtrusive than the stiff shell protectors (type B) [13].

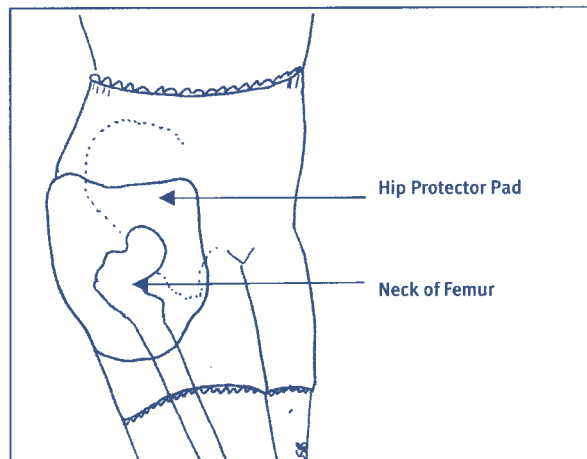
3.1.7 Infection Control: Cleaning and Maintenance

Laundering of HPP's must include a process of mechanical cleaning. Each facility will need to formulate their own policy for laundering of the HPP's. Once allocated it is important that the pads are not shared amongst other patients/residents, they are individually owned.

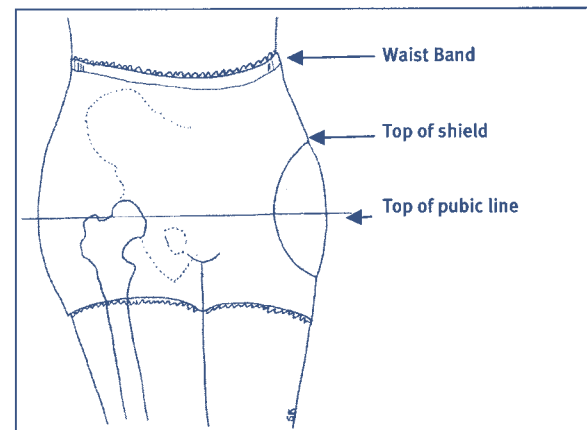
Stretch pants that hold type A HPP's in place are designed to be disposable, but may be handwashed once or twice to prolong use. Type B HPP's (underwear with the shield sewn in) can be machine or hand washed in warm water. All HPP's should be laundered following the manufacturers' guidelines.

3.1.8 Illustration of Application

If you draw a line from the top of the pubic hair line horizontally over the top of the leg this line will fall into the centre of the hip protector pad. The hip protector needs to be firm enough to maintain its position.



Type A



Type B

3.1.9 Hip Protector Pad Care Plan

Hip Protector Pad Care Plan	Please affix ID Label	
Date: / /		
Identified/Expressed Needs	Negotiated Outcomes	
Trial of Hip Protector Pads (type)	To allow independent mobility with less associated risks due to protective device.	
Management Plan	Review Date	Signature
Hip protector pads to be individually marked and stored with incontinence aids.		
Two pairs of hip protector pads per patient/resident.		
Removable cover can be changed if soiled or wet (these are washable).		
Stretch pants secure hip protector pads in place. For those patients/residents who already wear stretch pants for incontinence pads, a second pair of stretch pants may be needed and worn over the first pair.		
For Type A Hip Protector Pads, position just below the patient's/resident's waist with velcro closure at the top. This allows cover for the entire hip region.		
Please choose clothing with a loose fit to allow for hip protector pad insertion.		
Please complete hip protector pad observation form with time applied and removed. Comment on patient/resident compliance, fit, comfort etc. and any problems.		
Please contact _____ if any problems.		

3

This chart was developed by staff at Eventide Nursing Home, Sandgate, Prince Charles Health Service District, as part of the Quality Improvement and Enhancement Program.



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3.2 Nutrition Management

3.2.1 Background Information

Evidence suggests that malnutrition can increase the tendency to fall. Not only can malnutrition be a risk factor for falls, but falls can also induce malnutrition [1]. The association of nutritional deficiencies in the elderly with factors such as balance, gait and mobility are well documented [1-3]. Hence, nutrition status is an important factor in the management of falls.

Malnutrition is common in elderly people living in nursing homes [2]. It is frequently associated with decreased muscle mass, weight loss, weakness and gait abnormalities, all of which can increase the risk of falls. Possible causes of malnutrition in the elderly include illness, poor dental hygiene, inability to chew or swallow, impairment of taste, smell and cognition and conditions that increase metabolic needs.

In nursing homes, poor nutritional status should be suspected in any patient/resident who develops an acute medical problem or in any patient/resident with a chronic condition or illness [3]. Those who are at high risk of falling or those with a history of falling should also be closely monitored. Consequently, a nutritional approach to the prevention of falls in the elderly is vital

and should take into consideration micronutrient intake as well as overall energy intake [2].

3.2.2 Assessment of Nutritional Status

The use of clinical judgement, anthropometric and biochemical markers are important in the assessment of nutritional status.

A) Clinical Judgement

A subjective approach in determining nutritional status in geriatric patients/residents that involves assessment of the following:

Appetite

- Average
- Poor
- NG Tube/Fluids Only
- NBM/Anorexic

Oral Intake

- Has there been a significant reduction in dietary intake for > 7 days

Ability to Eat

- Able to eat independently
- Ill-fitting dentures/chewing problems
- Needs to be fed
- Dysphagia

Other Symptoms

- Nausea/vomiting
- Diarrhoea
- Confused
- Depressed/apathetic

B) Anthropometric Markers

Height-Weight Tables and Body Mass Index (BMI) are inaccurate for persons aged over 65 years due to reduction in height with age [5]. A history of weight loss is more useful in assessing malnutrition in elderly patients.

% Weight Loss - At-Risk Categories:

- Below Ideal Body Weight
- Weight loss > 5% in one month
- Weight loss >10% in 6 months

C) Biochemical Markers

Frequently used markers include total protein, albumin and pre-albumin, transferrin and vitamin/mineral concentrations. Serum albumin < 33 g/L is a widely used marker for nutritional status. Serum pre-albumin however, is becoming a popular and more commonly available test for nutritional status. Unlike albumin, it has a relatively short half-life and prompt changes in levels more accurately reflect changes in nutritional status [5].

3.2.3 The Role of Supplements

The use of nutritional supplements in helping reduce the risk of falling in institutionalised elderly people is well recognised [6-9]. Daily supplementation with



vitamin D and calcium is now considered a vital and effective injury prevention strategy in hospitals and nursing homes.

Studies have shown that elderly people, particularly those who are in institutions, may be at high risk of Vitamin D deficiency [10,11]. Vitamin D deficiency in institutionalised elderly patients can be caused by low exposure to sunlight, a decreased synthesis of Vitamin D in ageing skin and a diet low in Vitamin D.

Vitamin D deficiency in elderly individuals may lead to:

- Weakness and abnormal gait.
- *Osteomalacia* - the softening of bones which causes bone pain and tenderness and muscle weakness.
- *Osteoporosis* - a decrease in bone mass and density and can increase the risk of fractures.

Calcium plays a vital role in the structural development and maintenance of healthy bones and teeth. A deficiency in calcium may also lead to osteomalacia and osteoporosis.

Calcium absorption is enhanced with adequate Vitamin D (oral and sunlight) and moderate exercise. Scientific studies have shown that the effect of Vitamin D supplementation is enhanced when a calcium supplement is also used [3,12]. Combined supplementation is more effective in maintaining bone mass and reducing the incidence of non-vertebral fractures than mono-therapy.

Overall, daily supplementation with calcium and Vitamin D has a number of benefits as a falls prevention strategy. It has a preventive effect on the risk of hip fracture, can reduce body sway and improve balance, and may minimise bone loss and improve intestinal absorption of calcium.

3.2.4 Nutrition Checklist

The association between falls and nutritional status is complex and multifactorial. As research advances, specific aspects of nutrition that may contribute to the risk of falls have been identified. The following is a nutritional checklist that will assist in the assessment of nutritional risk factors for falls.

A) Malnutrition

- Malnourished patients/residents should be encouraged to consume as much energy (kilojoules) orally as possible.
- Encourage intake of high-protein and high-energy foods and drinks.
- If oral intake does not meet energy requirements, a commercial dietary supplement is recommended. Refer to dietitian for individualised feeding regimen.

B) Vitamin D

- Australian recommended daily intake for Vitamin D is 10 micrograms (400 IU).

- Studies have shown up to 800 IU daily Vitamin D supplementation to be safe and effective [13].
- Recommended dietary sources of Vitamin D include fish oils, sardines, herring, salmon, tuna, liver, egg yolk, fortified dairy foods and breakfast cereals.
- Ensure adequate exposure to sunlight. Research suggests 15-30 minutes of sun exposure daily can improve Vitamin D status [9].
- Refer to GP for Vitamin D supplements in medicinal form if required.

Note: Supplements should not be given to those with high calcium and phosphorus levels and should be given with caution to those with cardiac or kidney diseases. Care should be taken to avoid Vitamin D accumulation and toxicity especially if there is adequate sunlight exposure.

C) Calcium

- Australian recommended daily intake for calcium for men aged 64 years and over is 800mg, and 1000mg for women aged 54 years and over.
- Monitor calcium levels. Residents with calcium levels < 2.24 mmol/L are at high risk of falls [2].
- The best dietary sources of calcium are dairy foods including milk, yoghurt, cheese and custard. Provide at least 3 serves of dairy foods each day.
- Although the calcium from dairy foods is more readily absorbed, other sources include canned fish with bones, tofu, almonds, walnuts, sunflower seeds, broccoli, cauliflower and soybeans. Fortified foods such as fruit juice, bread and cereals also provide some calcium.
- Daily supplementation with calcium is recommended if requirements cannot be met with diet alone and/or if serum calcium levels are below normal range. Refer to the GP for supplements in medicinal form if necessary.
- Various salts of calcium are used as supplements [14].

(D) Other Nutritional Concerns

Magnesium

- Magnesium deficiency can result in muscle weakness and tremor, hypocalcaemia and reduced Vitamin D formation.
- Magnesium appears to be an important factor in qualitative changes in bone structure, which might affect bone fragility [15].
- Monitor magnesium level in residents taking calcium supplements as calcium can reduce the efficiency of magnesium absorption [16].
- Encourage intake of magnesium-rich foods including whole grains (wheat bran), nuts, green leafy vegetables and legumes.

Iron

- Iron deficiency may lead to anaemia, fatigue and weakness, which in turn can increase the tendency to fall.



- Readily absorbed sources of iron include liver, red meat, fish, poultry and eggs. Other sources include green leafy vegetables, wholegrain and fortified breads and cereals.
- If intake of meat, poultry and fish is low, monitor serum iron, transferrin and haemoglobin status. Refer to a GP for supplements if levels are below normal range.

Vitamin B12

- Vitamin B12 deficiency has been linked to proprioceptive loss and orthostatic hypotension in the elderly, which can increase the risk of falls [1].
- Ensure adequate intake of Vitamin B12 rich foods such as meat, eggs, milk and cheese. Monitor serum Vitamin B12 levels. Refer to a GP for supplements if necessary.

Folic Acid

- Deficiencies are common in elderly individuals and can lead to mental confusion, megaloblastic and macrocytic anaemias.
- Ensure adequate intake of folate rich foods such as dark green vegetables, legumes, seeds/nuts and whole grains.
- Monitor folic acid serum levels. Refer to the GP for supplements if levels are below the normal range.

Fluid Intake

- Inadequate fluid intake can lead to dehydration, postural hypotension, constipation and confusion and may increase the inclination to fall [2].
- Ensure adequate fluid intake –1500ml-2000ml or 35-45ml/kg/day.

Food Intake

- Meal times may cause post-prandial hypotension, which in turn may precipitate falls [2].

3.2.5 Discharge Planning Strategies

It is recommended that a dietitian and/or GP/MO review high-risk patients/residents prior to being discharged. In most cases, education will also be aimed at family members and/or carers.

The provision of resources and information about nutrition management is necessary to reinforce the message that good nutrition status can help reduce the risk of falling.

3.2.6 Nutrition Fact and Advice Form for Falls/Injury Prevention

The following page can be photocopied and given to patients, family members or carers. It provides some general information about nutrition management and allows space to write specific instructions for individual residents/patients.

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3.2.6 Nutrition Fact and Advice Form

Nutrition Fact and Advice Form for Falls and Injury Prevention

1. For a balanced diet, include a wide variety of nutritious foods from all the food groups. The food groups are:

- Bread, cereals, rice, pasta and noodles
- Vegetables (including legumes)
- Fruit
- Milk, yogurt and cheese
- Meat, fish, chicken, eggs, nuts and legumes

Eating a wide variety of foods gives people a better chance of obtaining all the nutrients required to maintain health. Choosing food from the different groups is important but choosing a variety of foods from within the groups is also important.

2. Include at least 3 serves of dairy foods each day. Dairy foods are good sources of calcium and Vitamin D which play an important role in retarding bone loss and reducing the rate of fractures in the elderly.

Dairy Foods – Serving Size Examples
<ul style="list-style-type: none"> • 250ml (one cup) fresh, long life or powdered milk • 1/2 cup evaporated milk • 200g (one small carton) yoghurt • 40g (2 slices cheese) • *250ml (one cup) custard or *2 scoops ice-cream <p>*Note custard is higher in calories than the other foods listed and is a good choice for elderly people who are underweight. Ice-cream is also higher in calories but provides only half the calcium of a sample serve.</p>

3. Include other sources of calcium and Vitamin D such as fatty fish, nuts, eggs and products fortified with Vitamin D and/or calcium. Regular exposure to sunlight can help maintain adequate levels of Vitamin D.
4. If calcium and Vitamin D supplements cannot be met by diet, supplementation is recommended. Supplements should only be given under instruction from a GP or Medical Officer.
5. For elderly people who have a poor food intake, refer to a dietician for advice on special dietary needs and oral supplements.
6. Regular fluid intake is encouraged. Six to eight glasses of fluid (preferably water, fruit juice and milk) every day will help prevent dehydration, confusion and dizziness, which can increase the risk of falling.

Specific Recommendations:

.....

.....

.....

.....

Signature:

Date:

Position:

Contact number:

This fact and advice form was developed by staff at Westhaven Nursing Home, Roma Health Service District as part of the Quality Improvement and Enhancement Program.



4.1 General Patient/Resident Education

4.1.1 Background Information

It is recommended that all patients/residents, who have been assessed as a high fall risk using a risk assessment tool, receive education regarding their falls risk. Patient education is a common component of a falls prevention program, and examples of how education has been employed within these programs are as follows [1]:

- Educating patients/residents and family/caregiver about the risk of falling, safety issues and activity limitations.
- Teaching patients/residents to make position changes slowly.
- Orientating patients/residents to bed area, ward facilities and how to get assistance.
- Developing patient/resident education programs for all new and high risk patients/residents.

Throughout the literature there is an emphasis placed on the importance of educating the patient/resident, family/caregiver and staff involved in the care of the patient/resident. There are many resources within this document that pertain to the above mentioned areas. These resources can be located in chapters 2.0, 3.0 and 5.0.

4.1.2 Target Group

The two defined groups of healthcare consumers involved in this project were:

1. Public Hospital patients including:
 - Potential and actual patients (preadmission and acute wards), and
 - People admitted to rehabilitation units
2. Residents of Aged Care Facilities, including Dementia specific accomodation.

Due to the specific needs, two defined sub groups have been identified within both hospital and aged care facilities. Firstly, those patients/residents admitted with dementia and related conditions and secondly, those patients/residents admitted with fall-related injuries such as a fractured neck of femur.

4.1.3 Education Process

Education begins immediately after the risk assessment tool has been completed. Fall education may be included as part of the initial orientation of the patient/resident [2], and education sessions need to be offered on a regular basis. The length of education sessions depends on the individual characteristics of the patient/resident, for example, degree of illness and concentration span. It is

considered that the earlier the education is commenced, the more likely it is to become a part of routine and become less challenging and strenuous to patients/residents. Preadmission environments lend themselves to providing information to patients and family/caregivers with regard to falls risk. Checklists can be used in this environment to educate patients and family/caregiver of falls risks and how they can minimise their risks, for example, use of appropriate footwear and clothing during the patients' hospital admission.

Education that is provided to patients/residents must be consistent in nature, particularly when delivered from several members of the health care team. It is important to establish links with other members of the health care team that are involved in the care of the patient/resident, thus encouraging a consistent approach when delivering education.

Older Australians are a very diverse group [3]. This diversity is specified in terms of:

- Degree and nature of the impact of ageing.
- Their attitude towards the ageing process.
- Their willingness and ability to adapt to ageing.
- Their attitude towards care.
- Efforts to maintain fitness and health.
- Their preferred, trusted and appropriate sources of information.

Older Australians are united in: [3]

- A desire to remain in their own home for as long as possible.
- The determination to maintain optimum independence for as long as possible and maintain control over their life.

When choosing the most appropriate education for this group, it is important to recognise both the diversity and unity of older Australians.

People should be encouraged to maintain fitness and continue to practice functional movements such as rolling, kneeling, sit to stand and balance activities, which may assist in falls prevention and rising after a fall [4]. It may be necessary to vary the education medium for individual patients/residents.

4.1.4 Specific Needs of The Individual

Factors affecting the ageing process, must be taken into consideration when developing educational material, for example, cognitive and sensory impairment. Other factors may include hearing loss, memory loss, visual problems or a non English speaking background. The following suggestions may assist with effective education sessions:

- Place yourself in a position to have eye contact with the patient/resident [5].
- If the patient/resident has a hearing aid, encourage them to use it [5].

- Keep the time frame short [5].
- Ensure the patient/resident is comfortable [5].
- Aim for a quiet setting with minimal interruptions [5].
- Present the most important information first [5].
- Clarify information with the use of examples [5].
- Motor skills: teach one step at a time, demonstrate, and allow for return demonstration [5].
- Encourage verbal interactions [5].
- Correct wrong answers/reinforce correct answers [5].
- Offer praise and encouragement [5].

Word Usage

It is preferable to address the person courteously and correctly, calling him/her by the name he/she prefers. It is wrong to assume that all older people appreciate being called by their first name or a pet name such as 'Pop' or 'Gran' [6]. It is important for staff to explain medical terms such as mechanical lifter, walking belt to the patient/resident. Written materials need to be developed at varying levels of literacy skill to reflect the diversity of literacy skills among consumers [7].

Length of Session

A short session of ten minutes was found to be most beneficial for patients/residents aged over 60 years [5]. Patients/residents with mild confusion or memory loss may benefit from using memory strategies. Visualisation also assists patients'/residents' retention of education, for example, showing them a mechanical lifter, a walking belt or an educational video.

Language

Every endeavour should be made to have educational material available in a language the patient/resident understands. The Queensland Health interpreter service may be a useful resource along with family members or designated facility interpreters. Recommended Queensland Health protocol is available in the document 'Queensland Health: Developing Local Language Service Guidelines' [8].

4.1.5 Education Content

Use patient/resident questions as the starting point for education sessions, consider using question/answer sections to evaluate the patient's/resident's intake of information [7]. Suitable content includes:

- Maintaining a positive and goal-oriented approach.
- Explaining to the patient/resident if they were to fall, they would be checked for any injuries before being moved.
- Information on what they themselves could do if they fell.
- Manual handling techniques eg. With staff supervision, assisted belt lift, or using a mechanical lifter.

- Validation.
- Strategies if unable to rise.
- First aid.

The patient/resident and family need to be aware that manual handling equipment should be substituted for lifting all or most of a patient's/resident's weight to minimise the risks of manual handling for both patient/resident and staff member [9].

Methods of Teaching Rising After A Fall

Teaching those at risk of falling how to rise should they fall, may minimise additional injury such as skin tears and pressure areas. A combination of approaches to teach methods of rising from the floor is necessary due to the variable presentation of each patient/resident. These include:

• High Mat

The *high mat* provides a less threatening and confusing environment by reducing the fear of getting down onto the floor and providing a sense of security to those with high anxiety levels. In most patients/residents, the basic movements of rolling, pushing onto the elbow, lying to side sitting, side sitting to four (4) point kneeling and two (2) point kneeling are possible on the high mat. The patients/residents may be taught to crawl and pull themselves to two (2) point kneeling using a rail attached to the wall with varying amounts of assistance.

• Feldenkrais Method

The initial process of rising from the floor involves body scanning and orientation. The *Feldenkrais method* may be used to help teach body awareness, orientation and movement perception [10].

• Backward Chaining

The full movement of kneeling to full standing may need to be completed on the floor using *backward chaining* from the mat to floor and chair support. Only higher cognitive level patients/residents are able to attempt this [11].

• Visual Aids

Visual Aids such as posters or large signs to outline the method of rising after a fall.

4.1.6 Mediums and Methods for Educational Programs

Visual Aids

Pamphlets

If a pamphlet is developed, it is important to identify the needs and preferences of the people who will use the information. Patients/residents should be involved in the development of pamphlets and in future evaluation [7]. People retain only about 10% of what they read. Glossy brochures, newsletters and media articles are no substitute for talking and listening when it comes to getting a message across [12].

Literacy levels also need to be considered as well as language (refer to 4.1.4).

Posters

Posters can be used to sequence and prompt. When designing a poster the following points should be taken into consideration:

- Eye catching.
- Large and easy to read type face [5].
- Emphasise contrasting colours – black and white [5].
- Avoid blues and greens [5].
- Use non-glare paper [5].
- Keep information short and simple.

Posters need to be placed in areas where patients/residents will have time to read them, and then be given the opportunity to ask staff about the poster content. Some suggested places for placement of posters are backs of toilet doors, activity/treatment rooms and lounge/dining areas.

Videos

Video presentations recreate real life [6]. Feedback from patients/residents reviewing a 'Rise After a Fall' video developed at Sarina Hospital and Primary Health Care Centre showed they had good recall of strategies discussed. The use of video may help dispel potential fears by viewing real life scenarios. It should be:

- Short.
- Narrated in single script.
- Brightly coloured.
- Incorporate case histories.
- Culturally appropriate.

Individual Vs Group Education

Individual

- Staff can individualise teaching processes to compensate for impairments/special needs [7].
- Patients/residents may feel more at ease in asking questions with the family present and the information gained may be beneficial on discharge.
- Direct observation of the patient/resident can be used to determine whether a skill has been learnt [6].
- Determine the level of care of each patient/resident, detailing his or her falls risk and cognitive ability.
- All contact needs to be kept short to fit in with the attention span and cognitive ability of the patient/resident.
- Education on falls prevention and rising after a fall should be repeated on a review assessment, new assessment, and following another fall or other significant changes.
- Devise a maintenance program to maximise the functional capacity.

- Detail strategies for falls prevention on a collaborative basis.
- The acute care setting lends itself to individual and group sessions due to variations in patient length of stay and recovery.

After assessment of the patient/residents' ability to move independently, programs may be established to enhance and maintain functional ability i.e. Programs including the following elements: rolling, side sitting and kneeling.

Group

- Patients/residents with similar conditions/needs may benefit from group interaction with others.
- Group sessions may work well with patients/residents who are to share common information eg. In the same format.
- A staff member needs to be present to assist with questions should they arise.
- Group teaching may save time.
- Informal group discussions between patients/residents may relieve anxiety and fear, and empower the patient/resident during their stay.
- Opportunity to involve family members/caregivers/friends, in group sessions may reduce anxiety (positive effects of family support).
- Allow patient/residents to reminisce while in education session – able to discuss and relate to personal experiences. Hearing "other" experiences may assist patients/residents to feel less isolated.

Examples of Relevant Groups

- Diversional Therapy such as group discussions (improve confidence), music group (physical and cognitive stimulation) and craft groups (cognitive stimulation).
- Snoozelin (relaxation and stimulation to improve sensory awareness).
- Physiotherapy (exercise programs, use of high mat).

Who Offers the Education?

Education should come from a multidisciplinary perspective and be suitable and relevant if delivered by another health professional in the team, for example, nurse, doctor, allied health professional or manual handling facilitator.

Documentation

Education offered must always be documented in the patient/resident file. For example, *'Mr Brown has been assessed as being at 'High Risk' of falling. Strategies implemented today have included direct education to him as to what to do, should he fall. Mr Brown seemed*



unsure about staff using the hoist/lifter. Could other staff please continue education sessions with him and his family on what may happen, should he fall. Nursing care plans or clinical pathways should also be ticked and initialled appropriately. Documentation should reflect the patients/residents understanding of the education session. It may be appropriate for the facility to ask the patient's/resident's to sign a specific form to acknowledge/indicate their understanding of the education. This process not only encourages effective communication between health professionals and the patient/resident but also provides appropriate documentation to support health care professionals in the event of litigation, should it arise.

4.1.7 Steps for Staff if Patient/Resident Falls

1. Check patient/resident for injury, take vital signs.
2. Alert other staff if needed.
3. Assist patient/resident up off the floor via appropriate means.
4. Monitor patient/resident regularly following fall.
5. Review reason for falls with patient and family.
6. Review and implement appropriate falls prevention strategies and injury minimisation strategies.
7. Provide appropriate referral to other health professionals.
8. Document all details in patient/resident chart.
9. Complete an incident reporting form (follow facility specific policy).
10. NOTE - Once patient/resident has sustained a fall they automatically become high risk.

The Aftermath of a Fall

- Always consider “why did this happen?”.
- Review falls strategies implemented and falls risk status.
- Address patients'/residents' fear of falling again.
- Reiterate slowly and carefully the ways to rise from a fall.
- Implement appropriate strategies.
- Report, discuss and document.

4.1.8 Patient Education Poster S.T.O.P.

This poster may be copied for use in your facility.

4.1.9 Patient Education Brochure (a) - General Information

This brochure may be copied for use in your facility.

4.1.10 Patient Education Brochure (b) - General Information

This brochure may be copied for use in your facility.



If you fall



Stay where you are.
Don't try to get up.

Try to get help.
Call out
Press the buzzer
Bang the furniture

Observe
Are you hurt?
Why did you fall?

Participate
Staff will help you
to rise after a fall

4

This poster was developed by staff at Sarina Hospital & Primary Health Care Centre, Mackay Health Service District, as part of the Quality Improvement and Enhancement Program.

Remember

Ask for help if you need it. We can then teach you other ways to reduce your chances of having a fall.

Have you fallen in the last 12 months?

If so, please let the staff know. We can help.

Who can help you prevent falls?

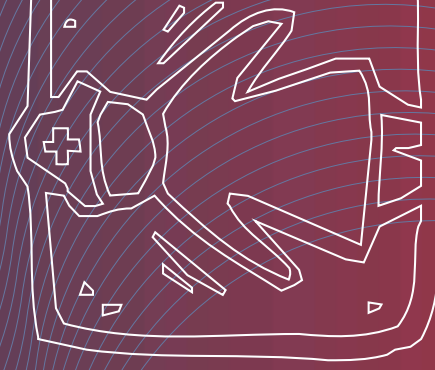
- nurse
- physiotherapist
- occupational therapist
- your doctor
- pharmacist
- optometrist
- podiatrist

They are available to answer your questions.

Falls prevention

Information about how you can reduce your chance of having a fall while you are in our facility

Falls Prevention



Other brochures in this series include:

- Medicines: Information to help prevent falls (QH Falls-03)
- Exercise and balance: Falls prevention. How to help yourself (QH Falls-04)
- Vision: Information about your vision and how to prevent falls (QH Falls-05)
- Don't go head over heels: Information to help you choose footwear for comfort, foot care and falls prevention (QH Falls-07)
- Hip Protector Pads: Information to help you choose hip protector pads (QH Falls-08)
- Bladder and bowel problems: How to prevent falls related to bladder and bowel problems (QH Falls-09)
- Falls prevention for community-dwelling older people (QH Falls-10)

This brochure was developed by staff at Gympie Hospital as part of the Quality Improvement and Enhancement Program's Falls Prevention for Public Hospitals and State Government Residential Aged Care Facilities Project.

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Ver. 04/2003

QH Falls - 06

Falls Prevention in Older People

Did you know?

A third of people aged over 65 years and one half of people aged over 80 years have a fall at least once a year.

In Australian hospitals, 38% of patient incidents that happen involve a fall.

We would like to reduce the number of falls that happen while people are in our care. To do this, we have introduced a falls prevention program for your safety.

What will happen now?

Our staff may do an assessment to see if you are at risk of having a fall. You could be rated as low, medium or high risk of falling.

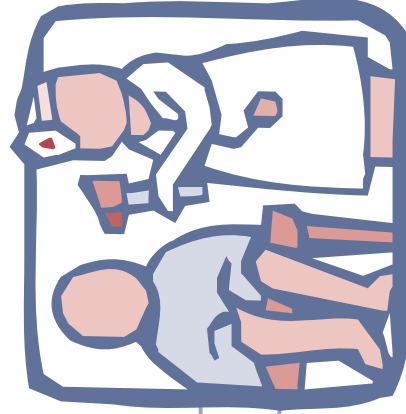
So what does this mean for you?

If you are rated as being at high risk of falling, we will discuss strategies that can reduce the chances of you having a fall. These strategies will be suited to your individual needs.

Strategies that can be used while you're in hospital

There are a number of strategies that can be used. We will discuss these with you and ways to incorporate them into your care. Issues that we will consider include:

- environmental factors and ward layout
- your general health
- the type and number of medicines you take
- whether you can do things safely on your own
- reducing your pain
- a physical check by the doctor
- managing bladder/bowel issues.

**Useful points to consider**

When you're moving from lying down to standing up

- Sit on the bed for a minute before you stand up.
- Move your ankles up and down to get your blood pumping.
- Get your "nose over your toes" before you stand up.
- Push off the bed or chair; don't pull up.
- Wait a minute before you start to walk.

When you're walking

- Take your time when turning around. Count each step to help pace yourself.
- If you have a walking aid, make sure it's in good condition.
- Use your walking aid appropriately. Don't grab for furniture.
- Wear suitable footwear that is non-slip and comfortable.

Diet and fluids

- Good nutrition, keeping your fluid levels up and suitable exercise are important to maintain your health and reduce your chances of having a fall.

 A large graphic featuring a white cross with a red center, positioned to the left of the text "Falls Prevention". The text is in a large, outlined, sans-serif font.

Falls Prevention



4.1.10 Patient Education Brochure (b) - General Information

**WALK WITH
CONFIDENCE**



**YOUR IN-HOSPITAL
EDUCATION**

This brochure was developed by staff at the Orthopaedic Ward Nambour General Hospital Sunshine Coast Health Service District, as part of the Quality Improvement and Enhancement Program.



**DOCTORS
SPEAKING**



INTRODUCTION

So, you have recently had a fall. We understand that, because of your fall, you may feel wary about getting up and about again.

RELAX! This is a perfectly normal reaction in your situation and is the reason for this pamphlet.

DON'T BE SCARED, BE AWARE! This pamphlet will give you some tips while you are in hospital to help you to 'Walk With Confidence'.

While you are in hospital, staff will help you to regain your mobility. To begin with, they will observe you very closely when you walk. As you regain your strength, you will be observed at a distance, until you are comfortable walking on your own.

Please remember that the staff are here to help. Ask them for assistance at any time. Listen carefully to your Nurse, Physiotherapist, Occupational Therapist and Doctor. They are interested in your safety and well-being.

SAFETY:

- Take your time when transferring or walking.
- Let staff know if you feel unwell or unsteady on your feet.
- Don't grab onto anything (eg. bedside tables) for support unless you know it is fixed and sturdy.
- Make sure your walking aids can be easily reached from your bed or chair.
- Watch out for spills or obstacles on the floor.

CARE:

- You will be checked regularly for toileting needs and general nursing care.
- Make sure footwear is appropriate:
 - Well fitting
 - Soles in good repair
 - Low heels
- Don't walk in stockings (ie. TEDS), scuffs or thongs.
- Clothing should be hemmed well enough to avoid slipping or tripping over it.
- Wear glasses if you have them.

ASSISTANCE:

- Ask for help from staff when transferring or walking.
- Use the call bell and make sure you leave it within easy reach.

RECOVER:

- Rest regularly to give your body time to recover.
- Use medicine for pain relief, to reduce unnecessary strain physically and mentally to aid your recovery.

EXERCISE:

- Your physiotherapist will show you exercises you can do on your own or with supervision or assistance, to regain your strength and mobility.

DIET:

- It is important to eat a nutritious diet that includes foods rich in:
 - Calcium eg. dairy products, broccoli.
 - Vitamin A eg. carrots, yellow or orange fruit or vegetables.
 - Vitamin C eg. citrus fruits and tomatoes.
 - Vitamin D
- These foods promote healing, calcium absorption and bone rebuilding.



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4.2 Patient Education – Specific to Dementia

4.2.1 Background Information

It is essential to gain an understanding of the progressive nature of dementia and how related changes may affect the ability to learn new skills. Variations in disease progression require carers to have an array of educational/behavioral interventions at their disposal. The individual with dementia is likely to present at all types of health facilities ranging from day respite centres to acute hospitals. All health care workers should have some understanding of the dementing process and the management of falls in this population.

Early Stage Dementia

Signs, Symptoms and Presentations

- Loss of short- term memory.
- Difficulty or inability to learn and retain new information.
- Language difficulties – particularly word finding.
- Mood swings and personality changes.
- Progressive decline in ability to perform activities of daily living.
- Periods of fluctuating awareness and orientation.

Most people with early stage dementia are living in their own home. They are usually looked after by a primary carer. Acute health care workers are likely to have contact with these people during admissions for general health issues, surgical interventions or fall-related injuries.

Learning Capacity and Possibilities

Those suffering early stage dementia are capable of learning new tasks and recalling memory [1]. This is thought to occur with 'procedural' type memories or the 'how to do' memory. Procedural memory may be less affected in neurodegenerative disorders such as Alzheimer's type dementia [2]. Formal education programs may be of benefit if the recipient is capable of perceiving there is a risk of falling and has an understanding that it is possible to reduce that risk. If so, appropriately targeted education sessions may be included as part of their care. Education strategies may be utilised by health care workers to promote learning and memory recall. These include:

- Repetition of instructions.
- Consistency regarding instructions provided by staff and family.
- Use of one-stage requests followed by appropriate pauses.
- Use of short, simple sentence structure with basic vocabulary.
- Use of memory cues i.e. Labels, signage, verbal prompts, and lists [3].

Regular retrieval of information from memory is thought to strengthen the information held in the memory.

- Space retrieval – involves a gradual increase in the time between receiving and having to recall pertinent information.
- Fading cues - involves supplying the person with the cues necessary to 'jog' the memory. When the memories consolidate the cues are faded out. Some techniques are not always successful. Persistence may result in feelings of frustration and harassment.

Formulating Educational Resources

Education tools should accommodate for normal ageing changes. In addition to the decline in sensory processes, other age related changes include increased learning time, reduction in short-term memory and attention span, and reduced ability to think abstractly and concentrate. Appropriate learning material should: [4]

- Emphasise main ideas eg. Bold type, underlining.
- Ensure diagrams/pictures are simple, appropriate and clearly labeled.
- Use short concise sentences and paragraphs; avoid abbreviations and medical jargon.
- Use high contrast background and lettering.

Mid to Late Stage Dementia

Signs and Symptoms – Mid Stage

- Unable to learn and recall new information.
- Memory of distant events is affected but not totally lost.



- Assistance with ADLs may be required.
- Behaviours such as wandering, agitation, uncooperativeness and physical/verbal aggression may occur.
- Confusion with loss of orientation to time and place.

Signs and Symptoms - Late/Severe

- Unable to walk or perform ADLs.
- Usually totally incontinent.
- Memory loss is complete.
- May be unable to eat and/or swallow.
- Progressive decline in communication.

Presentations

People with mid stage dementia may reside at home; however, due to the level of care required are increasingly being placed in aged care facilities. Regardless of place of residence, people are increasingly likely to fall and sustain injuries, presenting to acute medical care facilities.

Learning Capacity and Possibilities

Progressive cognitive impairment results in the inability to recall, learn, reason or consistently follow commands. Implementation of strategies to educate the patient/resident with dementia becomes the responsibility of health care workers and families. Ultimately the care for people with dementia is aimed to maintain optimal levels of function or enhance their quality of life. The needs of the patient/resident should remain the focus of attention. Falls prevention programs need to incorporate facility wide interventions combined with an individual approach. Multi-disciplinary assessments of predisposing disabilities and other risk factors are essential in tailoring individualised interventions. Periodic re-evaluation of the effectiveness of interventions is required to ensure optimal outcomes are achieved [5].

Formulating Education Strategies

Successful programs need to rely on health care workers fully understanding the scope of falls as an issue and having active involvement in the development and implementation of falls prevention programs. Staff need to be aware of the significance of their key role in reducing falls and fall-related injuries [6]. Caregiving strategies have been identified to assist staff to maintain independence, complete ADLs, reduce agitation, gain cooperation, preserve quality of life and provide a safe environment [7]. These include:

- Timing – timing residents' personal care to when they are not agitated.
- Reminding – constant and repetitive reminders are vital.

- Flexibility – it is important to keep patient/resident routines as structured as possible. Flexibility is also required so adjustments can be made rapidly if required. Caregivers must have a variety of techniques at their disposal and be ready to adapt them appropriately.
- Cueing – environmental cues are used to gain the resident's cooperation. Non-verbal cues are useful in encouraging the resident to allow staff to assist them to complete ADLs. Some examples are placing clothing on beds as a cue for dressing, turning down bed covers to indicate rest periods, using directional signage to lead the person to their bedroom or toilet/bathroom.
- Knowing – knowing the resident with their own history and unique personality.
- Soothing – repeating commands and speaking softly and slowly are important methods of discouraging unwanted behaviours and conveying feelings of tranquillity and peacefulness. A home like atmosphere also helps provide a calming environment.
- Allowing control – completing activities with residents, not for the resident, is an important aspect of care. Allowing control, when the cognitive state allows, thus helping minimise stress for both residents and staff.
- Preserving dignity – interacting with residents on an adult level.
- Disconnecting – during violent behaviour or periods of extreme agitation, the resident can be separated or disconnected from others until they have calmed.
- Consulting – formal and informal discussions between staff on care issues are a major way of devising and communicating effective care strategies.

4.2.2 Role of the Family in Falls Prevention

Family involvement in the care of patients/residents with dementia is strongly recommended. The decision to place a loved one into residential aged care is difficult. Family members require an orientation of the aged care setting, its programs or routines, and schedule of activities. Family members should be interviewed by staff to establish information regarding their relative's interests and personality traits. Close staff-family communication can help staff and family involvement in formulating nursing care plans and intervention strategies [8]. Pamphlets and involvement in support groups may be used to aid families during the adjustment period to better understand their loved ones' behaviours [9].



4.2.3 Behaviour Considerations

Wandering

Wandering can be defined as extended periods of movement without full awareness of one's behaviour [10]. Studies have identified different types of wandering patterns [11]. The incidence of wandering will generally increase with greater cognitive impairment. Language and spatial deficits can result in reduced purposeful mobility and lowered capacities for social interaction. This in turn can lead to increased frustration and agitation and wandering behaviours [12]. Reasons for wandering include boredom, pain or discomfort, and the need to satisfy basic physiological needs.

Managing Wandering

Interventions such as physical and chemical restraints were designed to prevent or limit the wandering behaviour. Although physical restraints can be effective in eliminating behaviour, they have been associated with serious injuries and increased agitation. Chemical restraints can have serious side effects including higher incidences of falls and fall-related injuries [13]. Wandering is seen to provide physiological benefits (increased circulation and oxygenation, stimulation, exercise promotion and reduction of muscle contractures and weakness) and psychological benefits (reduced agitation and increased social isolation) benefits. The management of wandering should involve assessment of the causes of and types of wandering and the application of interventions centered on accommodating rather than eliminating the behaviour. Strategies to reduce falling will vary according to the neurocognitive deficits and wandering patterns of the individual. These include: [10, 13, 14]

- Allow wandering in safe, secure, uncrowded areas.
- Do not attempt to prevent or stop the behaviour.
- Structure environments so desirable destinations are within sight and grouped together. Clarify intended destinations and assist or direct as required.
- Keep undesired destinations out of sight or camouflaged.
- Sign or label important destinations boldly and without ambiguity eg. Bedroom signs with a picture of a bed and their name with directional arrow.
- Divert or interrupt wandering that continues over a long period or leads to heightened anxiety levels or exhaustion eg. Encourage regular rest periods.
- Provide frequent monitoring of patient/residents physiological needs.
- Anticipate needs and intentions when ambulating.
- Offer alternative activities, especially purposeful

tasks such as sweeping, dusting, watering or folding small articles like washers.

- Provide companionship or group type activities if appropriate.
- Utilise hip protector pads to prevent traumatic injury and hip fractures.

Agitation and Aggression

Carers have long been faced with the unsettling experience of being verbally abused, punched, kicked, slapped or bitten by patients/residents with cognitive impairment. This may lead to a sense of bewilderment, frustration or even fear and anger in carers. Carers may respond in a variety of ways: [15]

- Provision of minimal care and withdrawal.
- Attempt to stop behaviour by scolding, use an intimidating manner and voice tone.
- Swearing, roughly providing care or physically abusing the patient/resident.
- Patiently enduring the abuse.

Aggressive behaviours may negatively affect the quality of life of patients/residents by alienating family and staff. This may lead to the patient/resident experiencing unmet needs for social interaction, love and self-esteem.

The following goals may help to direct interventions aimed at providing appropriate interpersonal relationships and an optimal physical environment. This in turn will reduce agitation and aggressive behaviours [15].

- *Resident to feel safe* – aggressive behaviour has been found to occur in response to touch or invasion of personal space. Caregivers need to develop verbal and non-verbal communication skills, be alert to precipitants, cue to patterns of behaviour (behaviour charts are useful tools to record responses and note effective interventions), eliminate fearful stimuli, use soothing techniques.
- *Residents to feel physically comfortable* – People with dementia have an inability to articulate the nature and source of pain. It is possible that movement can cause pain and has been found to precede aggressive behaviour. Assessments and treatment of pain should include: careful history of pain expression, use of non-verbal cues to detect the presence of pain, and use of maximum expertise and care when assisting in ADLs.
- *Resident to experience a sense of control* – patients/residents face many frustrations as they attempt to maintain control of their lives. Staff should be flexible and creative in their care provision and spend the time and energy needed to help the patient/resident rather than exert control.



Do not insist an activity to be carried out immediately or in a specific way, rather leave and return later or allow the activity to be modified for the individual.

- *Residents to experience optimal stimulation* – too much and too little stimulation can lead to maladaptive behaviour. Insufficient environmental stimulation can lead to boredom with the resident often creating self-stimulating activities such as wandering, disruptive vocalisation, intrusiveness and aggression [15,16]. Programs have been found to reduce boredom, depression and agitation, lowering the use of restraints and certain medications. Demands, which exceed the capabilities of a patient/resident, may also trigger behavioural difficulties. The following strategies may be implemented to reduce over stimulation:
 - Decrease traffic through living areas.
 - Eliminate loud noises such as loudspeakers, blaring radios and televisions.
 - Provide an environment, which allows safe movement.
 - Use simple commands and prompts when assisting with ADLs.
 - Exhibit relaxed and positive body language and attitude.
 - Use music, art, animals, and massage for therapeutic interventions.
 - Ensure staff educate families on how to make visits a positive experience, as these occasions can be triggers for aggressive behaviours [15].
- *Residents to experience pleasure* – the ability to experience pleasure in the immediate moment becomes crucial, especially when memory loss makes it difficult or impossible to experience joy in recalling the past. Care providers should contribute to the provision of frequent positive stimulation and pleasurable experiences for patients/residents. Interventions include:
 - Knowledge of the resident's social history (interest, hobbies, likes).
 - Provide individualised activity programs [16].
 - Ensure compassionate touch/interaction rather than just the routine touch associated with caregiving.

Sundowner Syndrome

Sundowning is an associated behaviour where the level of confusion and agitation increases markedly in the late afternoon or early evening. The resident's functional performance at these times may differ markedly from performance levels earlier in the day. Alternative care instructions may be required to ensure safety at all times. Staffing levels and mix may need

to be modified to ensure adequate assistance is provided. Activity programming may need to be intensified late afternoon/early evening to rechannel agitated behaviours eg. Pacing may be redirected into walking or dancing, noises may be channelled into singing or music playing [9].

Sleep-Wake Disturbances

Changes in the sleep-wake cycle of patients/residents may occur eg. Experience insomnia and become restless at night [9]. Strategies to minimise sleep disturbances include: [2]

- Involve patients/residents in a variety of activities to avoid excessive napping.
- Modify level of night staff to provide increased supervision for residents roaming.
- Ensure the facility has 24 hour wandering space with adequate lighting and activity provision.
- Provide lighting levels that best suit patient/resident needs eg. Night light, bathroom lights on, access to light switches aided by fluorescent tape markings, use of motion sensitive lights.
- Use of fluorescent markers to guide patients/residents to bathroom facilities.
- Maintain low bed height and use barriers such as full-length side rails judiciously. Side rails should be avoided completely if the patient/resident is likely to climb over. Soft boundary markers may substitute side rail use eg. Mattress bumpers and pillow positioning.
- Ensure comfort by using pressure relieving mattresses and pads.
- Ensure continence management is optimal which allows the patient/resident to sleep for up to eight hours if desired.
- Seek medical evaluation and pharmacological review of insomnia.

4.2.4 Communication and Comprehension Difficulties

The patient's/resident's ability to effectively communicate their needs and desires diminishes. This leads the patient/resident to become increasingly likely to initiate independent and often unsafe mobility as they attempt to satisfy elimination urges, promote interpersonal interaction and fulfil the desire to move. Caregivers are able to facilitate communication and comprehension by following basic communication principles: [17, 18]

- Attract the patients/residents attention prior to communicating.
- Maintain eye contact.
- Use gestures, pictures and facial expressions to convey more meaning.

- Repeat key words and phrases.
- Allow additional time for comprehension of instructions.
- Keep instruction short, simple and direct.
- Provide either/or choices in questions.
- Supply missing words for the patient/resident when required.
- Paraphrase what the patient/resident says and ask if that is what they meant.
- Validate the patients/residents emotional state rather than attempt to orientate the patient/resident to the facts.
- Avoid shaming an individual or using sarcastic and patronising language.
- Don't ignore patients/residents.

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4.3 Patient Education –

Patients Admitted With a Fall—Related Injury, Including Fractured Neck of Femur (#NOF)

4.3.1 Background Information

The risk of falls increases with age and may result in injury, disability, functional impairment or death [1]. Such injuries have become a common and costly cause of hospital admission. Of all fall-related fractures, hip fractures are the most serious and lead to the greatest number of health problems and death [2]. Half of all older adults hospitalised for hip fractures cannot return home or live independently after their injury [3]. Any patient admitted to hospital for a fall or with falls related injuries (such as a fracture) is immediately at high risk for future falls and should receive education as part of their clinical management. This may include:

- Identification of pre injury factors leading up to the fall.
- Specific in-patient requirements and management including rehabilitation.
- Discharge planning, including carer education.

While it may appear redundant to administer a falls risk-screening tool, this can assist to identify educational needs and specific factors to be addressed during the hospital stay. In many instances, multiple morbidity will present. For this reason, orthogeriatric teams have been well supported in the literature as being a means of providing an appropriate skill mix to meet the patients' clinical, social and environmental needs [4]. It is beyond the scope of this document to detail the many types of falls injuries, which may include bruising, fractures, contusion and lacerations. Falls are also the sequel of pathologic illness such as hypotension and stroke. For this reason, guidelines have only been provided for the postfall injury, fractured neck or femurs.

4.3.2 Considerations for Patients with Fractured Neck of Femur

It is estimated that 95% of #NOF's are falls related, with 2% occurring spontaneously [5]. Patients admitted to an acute setting or residential aged care facility with a hip fracture as the result of a fall are an easily identified sub group for specific falls education interventions. Following a fractured neck of femur the patient/resident may feel a loss of independence and be faced with pain, surgery and sometimes a slow recovery. Understanding these experiences is paramount to assist in the specific education of a patient/resident with a fractured neck of femur. Reassurance is vital in the recovery. Social work

involvement may also be required to address potential placement and social issues.

4.3.3 Factors Affecting Hip Fracture and Length of Hospital Stay

Hip fracture aetiology may be affected by a number of independent factors. These include orientation of the faller (a fall while turning is more likely to result in a hip fracture), protective neuromuscular reflexes, local 'shock' absorbers and bone strength [6]. The length of stay in an acute care setting may be decreased if early intervention programs are implemented. This includes interventions such as early surgery, minimal narcotic analgesia, increased daily therapy and close monitoring of patients' needs via a multidisciplinary team [4].

Restrictions in function from fear of falling may limit the long-term success of rehabilitation programs and patient outcome following hip fracture [7]. Of those who sustain a hip fracture 75% develop and maintain a fear of falling [8]. Fear of falling leading to activity restriction is a major consequence for patients along with muscle atrophy/deconditioning and reduced health and physical functioning [3].

4.3.4 Education

Education of the patient with a fractured neck of femur should address the following areas: (Refer to chapters 2 and 3 for resources)

- Factors leading up to the fall and subsequent fractures.
- Development of a problem list of risk factors that can be modified so as to prevent future falls.
- Fear of falling – within hospital stay, during rehabilitation phase and following discharge. Carers may also have this fear for their loved one.
- Independent functioning and occupational performance – assisted by specialised input from an occupational therapist so as to enable maximum function and gauge discharge options. It is important to restore self-confidence and teach the patient/resident how to participate in ADLs safely eg. Sit in a high chair with arms, use assistive aids (over toilet frame, grab rails, long handled equipment to avoid bending over and/or twisting of the body).
- Mobility and exercise – prescribed by medical and physiotherapy staff. This should be implemented with reference to the patient's pain and fear at rest and during movement [9].
- Discharge planning – keeping patient/carer informed about future requirements and community resources so as to prevent recurrent falls. A community liaison/discharge facilitator may deliver this component.
- Education should be the responsibility of all members of the health care team including

physicians, nursing staff, physical and occupational therapists, nutritionists, pharmacists, and social workers/discharge planners.

The pre-operative stage is the opportunity for assessment of functional aspects and issues that may effect post operative recovery. Some examples may be [10]:

- Over-the-counter and prescription drugs.
- Alcohol intake.
- Vision and hearing level.
- Nutritional status.
- Smoking history.
- Prior reaction to anaesthetic drugs.
- Mental status.

4.3.5 Fracture Management

Slight trauma or rotational force will cause a fracture if the person is osteoporotic. Poor blood supply and osteoporotic bone not suitable to hold metallic fixation may complicate treatment interventions. Surgical treatment will be based on the amount of displacement, age and health of the patient and blood circulation at the femoral head. The aims of fracture treatment include: to relieve pain, maintain good position of the fracture, allow for bony union for fracture healing and restore optimal function to the patient [9]. The patient diagnosed with a fractured neck of femur may undergo a number of surgical interventions:

- Pin and Plate (hip pinning and compression screw and plate). Indicated for use in patients who sustain minimal to moderate displacement and maintain an intact blood supply. Following surgical intervention and with physician's approval patient may be out of bed in 2-4 days. Weight bearing restrictions will apply for 6-8 weeks [9].
- Total Hip Replacement (This consists of two components: 1. High-density polyethylene socket fitted in acetabulum. 2. Metallic prosthesis replaces femoral head and neck). Designed to alleviate pain and regain joint motion. Indicated for use to restore joint motion and treat pain in patients with osteoarthritis, rheumatoid arthritis and ankylosing spondylitis. Hip dislocation may occur if precautions are not maintained. Precautions for the anterolateral approach include external rotation, adduction and extension of hip. Precautions for the posterolateral approach include hip flexion, internal rotation and leg adduction. Patients may be out of bed in 1-3 days and walking with use of an aid in the first month. Weight-bearing restrictions will apply for 6-8 weeks. These will vary with the amount of pressure and time [9].
- Bipolar Arthroplasty (femoral head excised and replaced by an endoprosthesis). Indicated for use in patients who sustain severe displacement or an avascular femoral head. Weight bearing

restrictions and hip positioning precautions will apply [9].

- ORIF: Open Reduction Internal Fixation (nail or compression screw with side plate). Used in patients who sustain an intertrochanteric fracture (between greater and lesser trochanters). The blood supply is generally not affected. Weight bearing restrictions may apply for 4-6 months [9].

Post operative standard multidisciplinary care is carried out and should include:

- Observations.
- Pain relief.
- Deep breathing.
- Leg exercises.
- Moving in bed as able.
- Support to family and significant others.

Psychological Issues

Psychological issues are an important and critical consideration in the overall treatment and management of the orthopaedic patient. These include loss of or potential loss of physical ability, dependency (loss of some independence and self-sufficiency), and relocation trauma (presents through confusion, emotional lability and disorientation). Removal from familiar environment may cause patients to decompensate cognitively [9].

Preoperative teaching programs may help to orientate and familiarise patients with staff and their responsibilities, procedures and equipment, and provide opportunities for patients to discuss concerns regarding hospital and discharge. These programs may help to relieve anxiety and fear, empowering the patient during their hospital admission, thus decreasing the length of stay in hospital [9].

4.3.6 Adverse Incidents and Risk Management

In some cases the falls injury occurs while the patient/resident is in our care. In these instances education of both the faller, and concerned family/caregiver is fundamental so as to manage the risk of complaint and/or subsequent litigation. All safety interventions that are implemented as well as the education delivered to the patient and/or family/caregiver, should be documented. This documentation should also include the decisions as to 'why' a particular intervention was chosen. Regular monitoring and documentation is required [11]. Documentation is also required in the form of completion of an incident form, in the event that a fall had occurred. Standard forms of reporting assist with incident monitoring eg. Staff member reporting the

same types of injury [12]. Existing structures within facilities need to be defined to prevent and minimise harm to patients [13]. One of the major concerns identified in the literature is that of the health professionals fear that completed incident forms will be used against them instead of for improving quality within their health care facility [14]. There is an obvious need to concentrate on fixing systems rather than blaming others for error [15].

The cost of 12 significant iatrogenic injuries from falls accounts for 2-3 % of the annual budget of a typical Australian community-based hospital of 120 beds [16]. The costs of injury need to be considered in future economic evaluation [16].

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5.1 General Staff Education

5.1.1 Background Information

It is imperative that health care workers are educated regarding falls and fall prevention. The most up to date information needs to be available and provided in order to educate patients/residents effectively. All staff should be involved in this process, as each one is an important member of the health care team. Health care workers require training to increase their awareness of patients/residents who are at risk of falling [1]. Delegation of teaching to a knowledgeable staff member may be a way to help presenters share information that will build their personal knowledge and provide opportunities to present education in a cost effective manner [2].

5.1.2 Administration Process

Considerations for Staff Application:

- Meet the educational needs of all staff (basic level of education, literacy levels).
- When and where the education should take place (use home environment/self directed learning packages, integrate professional development time into their work periods, part of orientation program).
- Educators may include nursing, allied health and workplace health and safety staff.

Characteristics of Effective Staff Education: [3]

- Follow strategies of adult learning ie. Interactive, participative, short and sharp.
- Ensure participation is from a diverse range of health care professionals (medical, allied health, support services and administration).

5.1.3 Application Mediums

1) Self-paced Learning Package

This approach involves a package of information and questions for review which is distributed to all staff members. A time frame is given for completion of reading and response to questions. Packages are marked and returned to staff with appropriate comments. Staff members may keep these as a resource. The benefits of this style of education may include: user friendly, no pre or extra reading required for completion of the package and flexibility in that the employee can complete these during work hours or elsewhere.

2) CD-ROM Package

- May be time consuming to prepare initially.
- Requires staff member access to computer, some staff may lack necessary computer skills.

- Unable to take programs home or keep as a resource.

3) Other Mediums

- Video.
- Slide presentation.
- Use of overhead transparencies and handouts.

5.2 Education Material

5.2.1 Slide Presentation

The information provided in these slides was current at the time of printing.

(Copy for use in your facility)

Slide 1 - What is a fall?

Fall = sudden unanticipated change downward in body position with or without physical injury [4].

Slide 2 - Falls Statistics [5]

Frequency

- One of every three people 65 years and older fall each year.
- Approximately 50% of nursing home residents fall at least once each year.
- Older adults who fall once are 2-3 times as likely to fall again within a year.
- Older adults are hospitalised for fall-related injuries five times more often than they are for injuries from other causes.
- Falls account for 38% of all incidents within Australian hospitals.

Slide 3 - Falls Statistics [5]

Outcomes

- Falls are the leading cause of injury deaths among people 65 years and older.
- Among people 85 years and older, 20% of fall-related deaths occur in nursing homes.
- 20-30% of those who fall suffer injuries that reduce mobility and independence and increase the risk of premature death.
- At least 95% of hip fractures are caused by falls. Only about 2% of hip fractures are spontaneous.

Slide 4 - Falls Statistics [5]

Costs

- The average direct cost for a fall injury was \$1,400 for a person over the age of 65 in 1994 (United States).
- Falls and fall injuries cost Queensland approximately \$750,000 annually.
- By 2020, the cost of fall injuries is expected to reach \$32.4 billion.

- Assuming 5% inflation and the growing number of hip fractures, the total annual cost of these injuries may reach \$240 billion by the year 2040.

Slide 5 - Risk Factors and Falls

Falls are caused by the interaction of a number of different factors. Factors may be a combination of both intrinsic (internal – related to the individual) and extrinsic (external to the individual) risks for an individual.

Slide 6 Risk Factors - Intrinsic [6]

- History of falls.
- Nutritional deficiencies.
- Impaired cognition.
- Visual impairments.
- Impaired mobility and gait.
- Poly-pharmacy.
- Medical conditions: diabetes, stroke.
- Foot problems.
- Muscle weakness and limited endurance.
- Psychological status: fear of falling, denial.
- Respiratory disease, musculoskeletal disorders.

Slide 7 Risk Factors – Extrinsic

- Environmental hazards eg. Clutter, poor lighting, polished or wet floors.
- Footwear and clothing.
- Inappropriate walking aids or assistive devices.

Slide 8 Consequences of Falls

- Physical injury (fracture, skin tear, abrasion, contusion).
- Restriction of activity/functional deterioration.
- Loss of confidence/fear of falling in the future.
- Pain/limitation of activity following a fall.
- Decreased quality of life.
- Social isolation.
- Depression and feelings of helplessness.

Slide 9 Costs to the HealthCare System [5]

- Increase in LOS in hospital.
- Increase in fees associated with hospital and nursing home care.
- Physician and other professional services.
- Rehabilitation.
- Prescription drugs.
- Use of medical equipment/home modifications.
- Community based services.
- Insurance administration/risk of litigation.

Slide 10 Falls Prevention Strategies

- Clinical assessment and review (individual risk).
- Medical screen.

- Physical conditioning and/or rehabilitation/exercise programs.
- Medication review.
- Education: health professional and patient/resident.
- Sensory evaluation.
- Environmental assessment and modification.
- Assistive device and walking aid review.
- Continence management.

Slide 11 Injury Prevention Strategies

- Nutrition management.
- Hip protector pads. Reduction in hip fractures by up to 60% [7].

Slide 12 What to Avoid

- Restraints can actually contribute to fall-related injuries and deaths. Limiting freedom of movement and personal autonomy results in deconditioning and muscle atrophy that can increase functional decline.
- Since new federal regulations took effect in 1990, nursing homes have reduced the use physical restraints. Although some institutions have reported an increase in falls, fall-related injuries have decreased in most nursing homes [8].

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5.2.2 Self-Paced Learning Package

This package may be copied for use in your facility.

5.2.3 Staff Education Brochure-Rising After a Fall

This brochure may be copied for use in your facility.



Falls Prevention Self-Paced Learning Package





Falls: A Background

Many falls in institutional and residential settings can be prevented. Older people living in institutions are at a greater risk of hip fractures than people living at home of the same age. In nursing homes the reported falls incidence is approximately 3 times the rate of community dwellers. Half of all older people hospitalised for hip fractures cannot return home or live independently after their injury [1].

Falls are the leading cause of injury requiring hospitalisation in elderly people and may account for 69% of trauma admissions. It is estimated that more than 1000 Australians aged 55 or more die as a result of a fall [2]. The number of hip fractures is expected to double by 2026 assuming current incidence [3].

Did You Know?

- 30% of those over 65 years will fall each year.
- 50% of those aged over 80 years will fall each year.
- 15% of falls occur in hospitals and institutions for the aged.
- In Queensland (1998) there were 203 deaths and over 7000 hospital admissions for falls [3].

Cost of injuries causes a significant economic burden on both hospitals and the community. Costs of 12 preventable injuries is over 0.25 million dollars, equivalent to 2 – 3 % for a typical Australian community hospital with 120 beds, and an even HIGHER percentage for rural and remote facilities. Economic evaluation of health care costs should include the consequences and costs of iatrogenic injuries, however these are infrequently documented [4].

Falls Prevention

Falls prevention is primarily being aware that falls are a problem, acknowledging that many falls can be prevented and understanding the risk factors. It is through a team effort and shared responsibility of hospital staff, patients/residents and their families that early identification of risks can occur. This can occur through thorough history taking, early orientation of patients/residents, early assessment of care needs and providing a safe environment. With ongoing review of falls risk and using incident reports as descriptive tools, problem solving for recurrent fallers can occur.

Consequences of Falling

- Physical injury.
- Restriction of activity.
- Functional deterioration.
- Lying on the ground for a long period of time.
- Loss of confidence.
- Fear of falling in the future.
- Pain/limitation of activity after a fall.
- Frequent fallers.
- Injury persists in 20 – 40% of falls.

Risk Factors Associated with Falling

- History of falls.
- Cognitive impairment.
- Hypotension/syncope.
- Diabetes.
- Medications/sedatives/polypharmacy.
- Sensory impairments.
- History of stroke/respiratory disease.
- Inactivity/muscle weakness.
- Foot problems.
- Arthritis.
- Musculoskeletal disorders.
- Slow hand reaction time.
- Decreased grip strength.

Environmental Hazards

- Loose cords on the floor.
- Wet or slippery floors.
- Poor, glare or inconsistent lighting.
- Beds or chairs without brakes.
- Bathrooms without handrails.
- Uneven paths outside.

Falls Prevention Strategies

- Clinical assessment and review.
- Medical screen.
- Sensory evaluation.
- Specialised units.
- Injury minimisation.
- Assistive devices.
- Education – patients/residents and staff.
- Exercise: balance, strength, endurance; group and individual.
- Environment: assess and modify as required.



Low Falls Risk

- Fully orientate the patient/resident to their new surroundings.
- Teach the patient/resident and carers that the bedside table is on wheels and may not support them if lent on.
- Place any walking sticks or frames in a place where they can be easily reached.
- Ensure the patient/resident wears non-slip footwear and it is within reach.
- Ensure the bed is at the lowest height appropriate for the patient/resident and its brakes are applied.
- Ensure the bed brakes are functional.

Medium Falls Risk

- Discuss the falls risk with the patient/resident and family.
- Consider the need for additional lighting eg. Night - light.
- Assist/supervise the patient/resident when transferring/walking.
- Communicate the risk status to all staff involved in the patients/residents' care.
- Check the patient/resident regularly.
- Elimination needs should be assessed every two hours while the patient/resident is awake.

High Falls Risk

- Reinforce with the patient/resident the need to ask for help from the staff when transferring or walking.
- Bedrail assessment and review of alternative strategies.
- Do not leave the patient/resident alone in the bathroom.
- Lights should be left on in the bathroom at night.
- Ensure the patient/resident is not left in an isolated position during the day.

Risk Assessment Tools

Preventative strategies require the identification of high-risk patient/residents. Assessment needs to be done on admission and at specified intervals thereafter (depending on the individual facility every one to three months). If the patient/resident's health status alters, eg. Infection, the risk assessment needs to be repeated and the results documented.

A risk assessment tool should be simple, brief and easy to administer [5].

Attend a risk assessment:

- On every patient/resident transferred/admitted to your unit.
- Following a change in medical status.
- Following a fall.
- At least every three months.

Environmental Audit Tools

This is a comprehensive check-list of environmental factors, which can be used in all, or part of the facility. An environmental audit should be completed for EVERY HIGH RISK PATIENT/RESIDENT. Results must always be documented and issues followed through with supervisors and reported back through Quality Management.

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- 1) List three (3) interventions to prevent falls.

- 2) What are five consequences of falls?

- 3) List three factors, which may lead to a patient/resident falling.

- 4) Give five different falls prevention strategies for:
 - Low Falls Risk:
 - Medium Falls Risk:
 - High Falls Risk:

- 5) What are the assessment tools required to be completed on all patients/residents?

- 6) What is the assessment tool for high- risk patients/residents?

- 7) When should a falls risk assessment tool be completed on a patient/resident?

- 8) What should you do if a patient/resident has a fall?

Thank you for completing this questionnaire.

Please return to: _____

Name:

Position:

Ward/Unit:

Date:



Staff Education

'How to Rise After a Fall'

With the Aid Of:

- Mechanical Lifter
- Assisted Belt Lift
- Supervision



Supervision

Preparation:

- Before moving a patient/resident from the floor an RN/staff member must check the patient/resident for injuries.
- Reassure the patient/resident and allow the patient/resident to regain composure before attempting to get up.

Rising:

- When the patient/resident is ready ask them to roll onto their stronger side.
- Ask the patient/resident to push themselves up onto all fours.
- Hold a chair firmly in front of the patient/resident so they can pull themselves up and then turn and sit on the chair.

This brochure was developed by staff at Saeima Hospital and Primary Health Care Centre, Mackay Health Service District, as part of the Quality Improvement and Enhancement Program.



Queensland Government
Queensland Health

Mechanical Lifter

Make yourself familiar with the manufacturers instructions for your specific lifter.

Preparation:

- Before moving a patient/resident from the floor an RN/staff member must check for injuries.
- Before utilising the lifter check it is working properly.
- Check that the environment is safe to use the lifter. You may need to use a slide sheet to move the patient/resident to a bigger area, or you may need to move furniture to give you more room.
- Lock brakes of furniture that you are moving the patient/resident to.

The Lift:

- Reassure the patient/resident.
- Raise the patient/resident a few centimetres and recheck attachments.
- Never leave a patient/resident suspended in a lifter: someone should always stay with the patient/resident.
- Always lower the boom when transferring patients/residents.
- Always remove the straps from hoist before the patient/resident.

Post Lift:

- If you find something wrong with the lifter mark it 'out of order' and report to maintenance.

Assisted Belt Lift

Preparation:

- Before attempting to assist the patient/resident to get up, an RN/staff member must check the patient/resident for injuries and assess if the patient/resident is capable to use this method.
- Reassure the patient/resident and allow the patient/resident to regain composure before attempting to get up.

The Lift:

- When the patient/resident is ready, roll the patient/resident from side to side to place the belt under the patient's/resident's waist.
- Ask the patient/resident to roll onto their stronger side.
- The patient/resident should then push themselves up onto all fours with the assistance of a staff member holding onto the belt.
- Get the assistance of another staff member to place and hold secure a chair so the patient/resident can pull himself or herself up with the guidance of a staff member holding onto the belt.
- When the patient/resident is standing they can be turned around and sat in the chair.

Glossary

A

Activities of Daily Living

the things we normally do in daily living including any daily activity we perform for self-care (such as feeding ourselves, bathing, dressing, grooming), work, home-making and leisure. The ability or inability to perform ADL's can be used as a very practical measure of ability/disability in many disorders.

Adverse Drug Reactions

unexpected or dangerous reaction to a drug administered at normal dosage.

Agitation

excessive motor function, usually non-purposeful and associated with internal tensions eg. Inability to sit still, fidgeting, pacing, wringing hands, or pulling at clothing. May develop into aggression if the cause is not addressed.

Analgesia

pain relief which may be achieved by use of medication.

Antidepressant

prescribed drugs used to treat depression. Increased risk of falls is a potential side effect.

Antipsychotic

prescribed drugs used to treat psychosis. Increased risk of falls is a potential side effect.

Anxiety

a state of tension affecting the mind and the body. Anxiety can range from acute (short term) to chronic (long term).

Assistive Device

a device that is designed, made, or adapted to assist a person perform a particular task eg. Canes, crutches, walkers, wheelchairs, shower chairs.

Atrophy

usually attributed to muscle, it is shrinking in size, usually following a period of disuse or immobility.

B

Balance

a normal state of physiological equilibrium, a state of stability. A biological system that enables us to know where our bodies are in the environment and to maintain a desired position. Normal balance depends on information from the inner ear, other senses (such as sight and touch) and muscle movement. Balance relies on numerous systems to maintain upright position (sensory, tactile, proprioceptive, vestibular), rapid and acute central processing, and coordinated motor response.

Bed Alarm System

system that alerts hospital staff to patient movements out of bed. Detects movement and/or absence of weight when a patient changes position.

Benzodiazepines

a class of drugs that act as tranquilisers and are commonly used in the treatment of anxiety. Benzodiazepines can cause drowsiness. Increased risk of falls is a potential side effect.

Best Practice

in the health sector, this means the highest standards of performance in delivering safe, high quality care, as determined on the basis of available evidence and by comparison among health care providers (Final report to Health Ministers from the National Expert Advisory Group on Safety and Quality in Australian Health Care July 1999). Represents current best evidence based on expert opinion.

Bone Density

a description of bone mass. Bone mass is diminished in osteoporosis. Bone density has also been seen to be diminished in hormone deficiency syndromes, particularly oestrogen depletion.

C

Callus

common, usually painless thickening of the stratum corneum at locations of external pressure or friction/bony deposit formed between and around the broken ends of a fractured bone.

Cataracts

an abnormal progressive condition of the lens of the eye, characterised by loss of transparency.

Clinical Pathways

a multidisciplinary tool using optimal sequencing and timing of agreed intervention for a particular diagnosis or procedure, designed to use resources better, maximise the quality of care and minimise delays. Some hospitals provide clinical pathway documents to patients, setting out the treatment during the patient's stay and enabling the patient to understand the complex web of public hospital care.

Cognition

the process of being aware, knowing, thinking, learning and judging. The area of more sophisticated mental functioning (intelligence, judgement, insight, memory).

Cognitive Impairment

a disorder where the person shows decreased abilities in memory, problem solving, orientation, and/or judgement, reasoning.

Confusion

the inability to think clearly.

Contusion

a bruise, often associated with blunt trauma.

D

Delirium

acute altered level of mental state. An acute organic mental disorder characterised by confusion, disorientation, restlessness, clouding of the consciousness, incoherence, fear, anxiety, excitement and often by illusions.

Dementia

a chronic or persistent disorder of the mental processes due to organic brain disease. It is marked by short term memory loss, changes in personality, deterioration in personal care, impaired reasoning ability, and disorientation.

Diarrhoea

the passage of frequent, fluid like unformed bowel motions.

Depression

an unpleasant, unhappy state of mind and body with significant impairment of memory, concentration and other mental processes. Physical activity is also slowed.

Disorientation

inability to recognise time or surroundings or identify oneself or another person.

Diuretics

a drug/substance tending to promote the formation and excretion of urine eg. Frusemide, hydrochlorothiazide.

Drop Attacks

a form of Transient Ischaemic Attack (TIA) in which a brief interruption of cerebral blood flow causes a person to fall to the floor without losing consciousness. Falls due to sudden loss of lower limb tone without altered consciousness, full recovery of lower limb postural tone between episodes.

E

Endurance Training

the ability to continue an activity despite increasing physical or psychotc stress, as in the effort to perform additional numbers of muscle contractions before the onset of fatigue.

Environmental Audit Tool

tool or checklist utilised to assess the safety level and identify problems in an environment. It can be used in part of the facility such as a bathroom or bedroom or to audit the entire facility.

Evidence Based Medicine

the integration of best research evidence with clinical expertise and patient values.

Exercise

a type of physical activity defined as a planned, structured and repetitive body movement done to improve or maintain physical fitness.

External Risk Factor

environmental, external to the individual.

F

Fall

a sudden unanticipated change downward in body position with or without physical injury (Hendrich et al, 1995).

Falls Injury

injury sustained as a result of a fall. May be minor (skin abrasion, contusion, laceration) or major (fractured hip, wrist).

Falls Self Efficacy

belief in own ability to avoid falling.

G

Flagging

aims to identify patients and residents who are at high risk of falling. Reminds staff that patient is at high risk for falls and trigger interventions that reduce the risk of falls. Identification through coloured bracelets, bed signs, stickers, tags above patients' beds/at nurses station/in patients' chart. Flagging may also impact on patients'/residents' falls awareness.

G

Gait

the manner or style of walking, including rhythm, cadence, and speed. More specifically, one's step, length, height, symmetry and continuity, path transcended, trunk stability and walk stance.

Generalised Anxiety Disorder

excessive anxiety disorder/most days during several activities with at least three of the following: restlessness, poor concentration, irritability, sleep disturbance, and muscle tension.

H

Hip Protector Pads

designed to minimise the risk of falls injury, specifically hip fracture. Hip protector pads absorb the impact of a fall and reduce the risk of fracture by 'shunting' energy away from the hip region. They are generally formed of a pad or shell that is worn under the clothing, covering the hip and held in place by specially designed underpants. There is also a type that is worn over the clothing and held in place by straps. Research has shown that hip protectors can be useful in preventing fractures if they are worn as recommended.

Hypotension

an abnormal condition in which blood pressure is not adequate for normal perfusion and oxygenation of the tissues, low blood pressure.



Hypoxia

inadequate oxygen at the cellular level, characterised by tachycardia, hypertension, peripheral vasoconstriction, dizziness, and mental confusion.

I

Iatrogenic Event

due to the activity of a physician or a therapy. Inadvertently caused by a physician or surgeon or by a medical or surgical treatment or a diagnostic procedure.

Immobilisation

prevention of movement, presumably to allow for natural healing to take place. Side effects may include disease, atrophy, deconditioning of muscles and stiffness.

Impaired Judgement

the inability to make logical rational decisions and decide whether the given action is right or wrong eg. Needs assistance to transfer or to get out of bed but still reports independence; needs walker or crutches to ambulate but continues to use furniture to mobilise.

Impulsive

behaviour that is sudden and often lacks insight.

Impaired Mobility

weakness; impaired gait or balance, or inability to walk straightforward without support.

Incident Monitoring

a method of collecting detailed qualitative data about any unintended incident which could have or did harm someone.

Incident Report

a document, usually confidential, describing any incident or deviation from policies or orders, involving a patient, employee, visitor or student on the premises of health care facilities.

Incontinence

the involuntary inability to control excretions (urination and/or defecation) which becomes a social problem.

Insomnia

chronic inability to sleep or to remain asleep through out the night; wakefulness.

Internal Risk Factor

related to the individual. The characteristics are inherent to each individual and may be a result of changes related to medication, disease or ageing.

J

Judgement

the ability to make considered decisions or come to sensible conclusions.

M

Major Injury

fracture, joint dislocation, soft tissue injury, and/or laceration requiring sutures. May involve major surgery.

Malnourished

any disorder of nutrition, it may result from an unbalanced, insufficient or excessive diet or from impaired absorption, assimilation or use of foods.

Mental Status

degree of competency shown by a person in intellectual, emotional, psychological and personality functioning as measured by psychological testing with reference to a statistical norm.

Minor Injury

contusion, abrasion, sprain, laceration without sutures.

Multi-factorial

having several different factors or reasons.

N

Narcotics

substances which may induce drowsiness, sleep, stupor or insensibility.

Nocturia

urination, particularly excessive urination at night.

Nocturnal Confusion

confusion occurring during the night.

Non Steroidal Anti-Inflammatory Drugs (NSAID)

medication which produces, analgesic and anti-inflammatory effects. They act by modifying the complex chemical process that mediates inflammation in musculoskeletal conditions.

O

Osteoarthritis

often described as degenerative disease, it covers a variety of signs and symptoms, including osteophyte formation, stiffness, deformity (eg Heberben's nodes) and pain.

Osteoporosis

condition in which the total amount of bone density is reduced. Common cause of fractures, particularly crush fractures of the spine and neck of femur fractures.

P

Parkinson's Disease

neurodegenerative disorder, characterised by tremor, rigidity, bradykinesia, gait disturbance, and postural hypotension.

Physical Restraint

any manual method, physical or mechanical device, material, or equipment attached or adjacent to the patient that the individual cannot remove easily which restricts freedom of movement or normal access to one's body.

Post Falls Syndrome

exaggerated tendency to clutch and grab while walking and an inability to walk without assistance following a fall incident.

Postural Hypotension

the fall in blood pressure produced by standing up. It is also a side effect of medications. Symptoms include dizziness, fainting, and unsteadiness. Blood pressure and psychiatric medications are amongst the causes of this problem.

Psychotropic

drugs that effect the psychic functions, behaviour, or experience of a person using them. A side effect may be an increased risk of falls.

Q

Quality of Care

a term which includes efficiency, effectiveness, accessibility, patient satisfaction, appropriateness of care, and patient safety.

R

Recurrent Falls

a person who has fallen twice or more in the last three months.

Rehabilitation

recovery from injury, with emphasis on return to pre-injury physical and emotional state of well being.

Resistance Training

the resistance against which a muscle generates force is increased progressively over time to benefit muscular strength.

Risk Assessment Tool

form developed for clinical staff to assess the potential risk a patient/resident has of falling. The risks are normally calculated into low/medium/high risk groups.

Risk Factor

includes: characteristics of the faller (general, cognitive impairment, decreased mobility, visual impairment), characteristics of the fall (environmental hazards, energy, surface, protective responses), protective factors (weight, exercise, dietary, calcium intake). Risk factors may be intrinsic or extrinsic.

Risk of Fall

probability of fall, factors contributing to risk of falling.

S

Safety

the extent to which the probability of preventable unintended injury or complication which may result in disability, death or prolongation of hospital stay, caused by health care management rather than the patient's disease, is minimized.

Sedative

substance, procedure, or measure that has a calming effect. An agent that decreases functional activity and diminishes irritability. The risk of falling may be increased as a side effect.

Sensory Deficit

a defect in the function of one or more of the senses.

Standardisation

to conform to something similar.

Strength

the ability of a muscle to produce or resist a physical force.

Stress Incontinence

the escape of urine following an increase in intra-abdominal pressure, may be caused by different actions eg. Cough, sneeze, laugh, stand, exercise.

Stroke

the result of damage to part of the brain, usually associated with weakness, numbness or paralysis. Also known as Cerebral Vascular Accident (CVA).

Syncope

a brief lapse of consciousness caused by transient cerebral hypoxia.

T

Tranquillisers

drugs prescribed to calm anxious or agitated people, ideally without decreasing their consciousness. The risk of falling may be increased as a side effect.

Transfer

to move a person or object from one side to another.

U

Urge Incontinence

feel urge, however, can't get to the toilet in time to pass urine or faeces in the toilet, often due to detrusor muscle instability.

Urinary Frequency

a higher than normal need to pass urine.

Acronyms

ABS	Australian Bureau of Statistics	QISU	Queensland Injury and Surveillance Unit
AIN	Assistant in Nursing	RM	Risk management
AIPN	Australian Injury Prevention Network	RN	Registered Nurse
APAC	Australian Pharmaceutical Advisory Council	SI	Stress Incontinence
BMI	Body Mass Index	STI	Soft Tissue Injury
BMR	Basal Metabolic Rate	SW	Social Worker
CEO	Chief Executive Officer	TPP	Time, Place and Person
CERA	Centre for Education and Research on Ageing	UI	Urge Incontinence
CNC	Clinical Nurse Consultant	UTI	Urinary Tract Infection
CVA	Cerebrovascular Accident	VA	Visual Acuity
DG	Director General	WH&S	Workplace Health and Safety
DM	District Manager		
DON	Director of Nursing		
EBM	Evidence Based Medicine		
ELO	Ethnic Liaison Officer		
EN	Enrolled Nurse		
Fx; #	Fracture		
GCS	Glasgow Coma Scale		
GP	General Practitioner		
HACC	Home and Community Care		
HCFA	Health Care Financing Administration		
IADL	Instrumental Activities of Daily Living		
ICD-10	International Classification of Diseases version 10		
IDC	Indwelling Catheter		
JCAHO	Joint Commission on the Accreditation of Health Care Organisations		
MMSE	Mini-Mental State Examination		
MO	Medical Officer		
MSQ	Mental State Questionnaire		
MSU	Mid Stream Urine		
NESB	Non English Speaking Background		
NHMRC	National Health and Medical Research Council		
NIPAC	National Injury Prevention Advisory Council		
NOF	Neck of Femur		
NPC	Nurse Practice Coordinator		
OBRA	Omnibus Budget Reconciliation Act		
OHS	Occupational Health and Safety		
OT	Occupational Therapy		
PADL	Personal Activities of Daily Living		
PCA	Patient Care Assistant		
PIG	Patient Instruction Given		
PT	Physiotherapy		
QA	Quality Assurance		
QAS	Queensland Ambulance Service		
QHIN	Queensland Health Information Network		
QHEPS	Queensland Health Electronic Publishing Service		
QIEP	Quality Improvement and Enhancement Program		

Resources

There are a number of documents and websites pertaining to the area of falls prevention, with a specific relevance to the implementation of falls prevention programs. The following list outlines some documents that may be used in conjunction with the Best Practice Guidelines for falls prevention. The falls prevention team acknowledges that this list is not exhaustive, and Districts may need to consider other documents, including local documents, as an adjunct to implementing a falls prevention program: -

Documents

- Literature review: QIEP - Falls Prevention in Public Hospitals and State Government Residential Aged Care Facilities. Available on QHEPS (Queensland Health Electronic Publishing Service).
<http://www.health.qld.gov.au/quality/fpbpg.htm>
- National Falls Prevention for Older People Initiative:
 - Report to the Commonwealth Department of Health and Aged Care Injury Prevention Section by National Ageing Research: 'An analysis of research on preventing falls and falls injury in older people; community, residential aged care and acute care settings' August 2000.
 - Report to the Commonwealth Department of Health and Aged Care Injury Prevention Section by National Ageing Research: 'Falls prevention activities for older people: a national stocktake' July 2000.
 - A Study Into the Information Needs and Perceptions of Older Australians Concerning Falls and Their Prevention
Phone: 1800 020 103 ext. 8654,
E-mail: phd.publications@health.gov.au
<http://www.health.gov.au/pubhlth/strateg/injury/index.htm>
- Qld Health integrated risk management framework for clinical and corporate services
<http://qheps.health.qld.gov.au/Hssb/risk/dmp/15232dmp.pdf>
- Patient Handling Guidelines – Qld Health 2001. Patient Handling Project, c/o Eventide Nursing Home, Brighton Terrace, Sandgate 4017.
Phone: (07) 3866 0480.
- The Australian Health Care Agreements
<http://www.health.gov.au/haf/docs/hca/index.htm>
- Health Outcomes Plan Injury Prevention and Control: 2000 – 2004.
http://www.health.qld.gov.au/hop/injury_full.pdf
- National Injury Prevention Plan: Priorities for 2001 – 2003.
Phone: (02) 6289 8074
<http://www.health.gov.au/pubhlth/strateg/injury/>

- Statewide Action Plan: Falls Prevention in Older People: 2001 – 2006.
<http://www.health.qld.gov.au/phs/Documents/shpu/13693.pdf>
- APAC (Australian Pharmaceutical Advisory Council) Guidelines
APAC, MDP 83, GPO Box 9848, Canberra ACT 2601
Phone: (02) 6289 7491
- CERA (Centre for Education and Research on Ageing) 'Putting Your Best Foot Forward' Preventing and Managing Falls in Aged Care Facilities – Manual.
Phone: (02) 9767 7670,
E-mail: cera@medicine.usyd.edu.au
- FRAT Pack – A guide to falls prevention strategies in aged care facilities.
Produced by the Peninsula Falls Prevention Service. Mt Eliza Aged Care and Rehabilitation.
Phone: (03) 9788 1260.
- Falls and Fractures: Beating the Odds. Falls Prevention Kit.
Arthritis Foundation of New South Wales. Phone: 1800 011 041/(02) 9683 1622.
- Evidence-Based Health Promotion: Resources for Planning. No. 3 Falls Prevention. Public Health Division. National Ageing Research Institute.
Phone: (03) 9637 4023.
<http://www.dhs.vic.gov.au/phd/cbhp/03falls.htm>

Websites

- <http://www.health.qld.gov.au/quality/> - Strategic Plan/Quality Improvement and Enhancement Program (QIEP).
- <http://www.cdc.gov/ncipc> – National Centre for Injury Prevention and Control.
- <http://www.geron.org> - Gerontological Society of America.
- <http://www.nari.unimelb.edu.au> - National Ageing Research Institute.
- <http://www.osteoporosis.org.au> - National Osteoporosis Foundation.
- <http://www.ahcpr.gov/clinic/ptsafety> - Making Health Care Safer: a Critical Analysis of Patient Safety Practices – Evidence Report/Technology Assessment: Number 43.
- <http://www.senioract.com> - Senior ACT – Activities for a Geriatric Setting.
- <http://www.minimental.com> – Mini Mental Exam.
- <http://www.elderweb.com> – Eldercare Finance, Law, Housing, Health and Research Information.
- <http://www.joannabriggs.edu.au> – The Joanna Briggs Institute for Evidence Based Information.

- <http://www.nisu.flinders.edu.au/aipn/>- Australian Injury Prevention Network.
- <http://www.health.gov.au/>- Australian Department of Health and Aged Care.
- <http://www.nih.gov/nia/>- National Institute on Ageing (United States of America).
- <http://www.iccwa.org.au> - Injury Control Council of Western Australia.
- <http://www.dhs.vic.gov.au/> - Preventing Falls Among Older People – Victoria.
- <http://www.ozemail.com.au/~hipsaver/>- Community Hip Protector Study.
- <http://www.bsra.org.uk> – British Society for Research on Ageing.
- <http://www.asgm.org.au> – Australian Society of Geriatric Medicine.
- <http://www.cera.usyd.edu.au> – Centre for Education and Research on Ageing.
- <http://www.ebn.bmjournals.com> – Variety of Information and Articles.
- <http://www.qualityhealthcare.com> – Interdisciplinary Health Issues.
- <http://www.safetyandquality.org> – Australian Council for Safety and Quality in Health Care.
- <http://www.archi.net.au> – Australian Resource Centre for Hospital Innovations.
- <http://www.rnplus.com> – Restraint Reduction, Fall Prevention and Patient Safety.

Injury Surveillance

- National Injury Surveillance Unit
- Australian Institute of Health and Welfare
- Monash University Accident Research Centre/Victorian Injury Surveillance System
- Queensland Injury Surveillance Unit

Videos

- “Tai Chi for Arthritis Sufferers” and “Tai Chi for the over 55s” by Dr Paul Lam. East Action Videos. Phone: 02) 95344311.
- “Don’t Come a Cropper”. Charleville Healthy Aging Program. 1999. Phone: 07) 46547950.
- “A Matter of Attitude: Older people confronting the fear of frailty”. Families, Youth & Community Care. Queensland. Phone: 07) 32247959 or Fax 07) 32242019.



Evaluation Framework

This evaluation framework has been provided to assist facilities to evaluate the implementation of the Falls Prevention Best Practice Guidelines in Public Hospitals and State Government Residential Aged Care Facilities at a local level. The evaluation framework is a suggested guide only.

Specific Objectives	Strategies	Indicators	Outputs
Implementation of a risk identification/assessment process for identifying patients/residents at risk of falling.	Establishment of a risk identification/assessment process that is reflective of the facilities needs' and population serviced.	Evidence of risk identification/assessment process in Qld Health facilities.	<ul style="list-style-type: none"> • Reporting • Chart audit
Implementation of fall prevention strategies following assessment of high-risk patients/residents.	Implementation of fall prevention strategies aimed at minimising an individual patient's/resident's risk of falling.	Evidence of use of fall prevention strategies as identified in the Best Practice Guidelines for Falls Prevention in Public Hospitals and State Government Residential Aged Care Facilities.	<ul style="list-style-type: none"> • Reporting • Chart audit
Implementation of injury prevention strategies following assessment of high-risk patients/residents.	Implementation of injury prevention strategies aimed at minimising individual patient's/resident's risk of injury following a fall.	Evidence of use of injury prevention strategies as identified in the Best Practice Guidelines for Falls Prevention in Public Hospitals and State Government Residential Aged Care Facilities.	<ul style="list-style-type: none"> • Reporting • Chart audit
Staff education/cultural change.	Staff training <ul style="list-style-type: none"> • Risk identification/assessment process • Fall prevention strategies • Injury prevention strategies • Patient education • Reporting of incidents • Reporting environmental hazards. 	Staff actively participate in a fall prevention program: - <ul style="list-style-type: none"> • Identifying patients at risk • Providing effective treatment/interventions to minimise the individual patient's resident's risk of falling • Reporting of incidents • Reporting on environmental hazards. 	<ul style="list-style-type: none"> • Staff knowledge via a survey • Evidence of staff training eg. orientation to the ward

Acknowledgments

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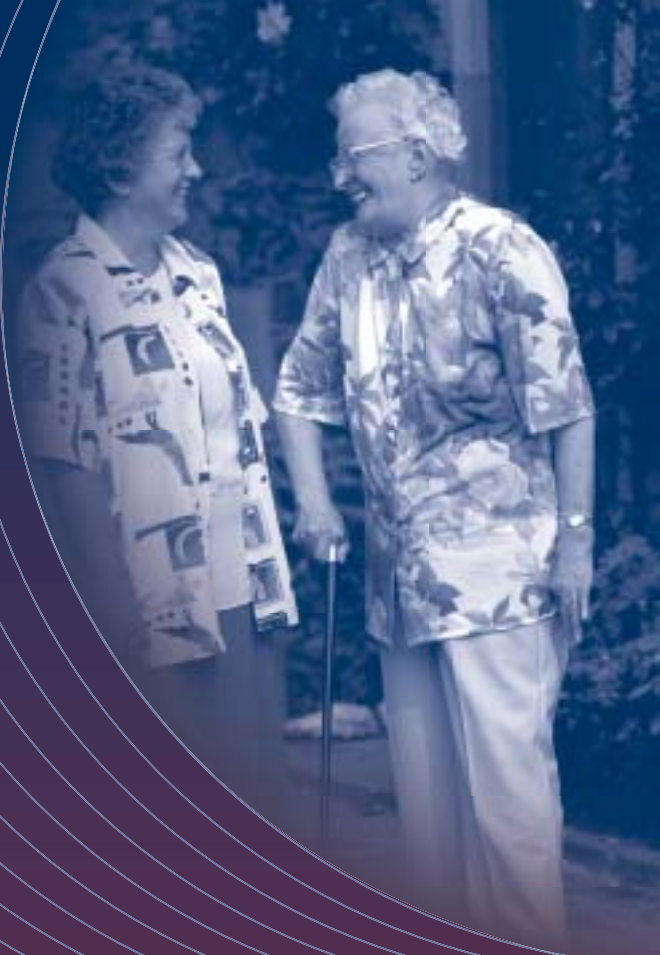
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The falls team would like to extend thanks to the following trial site coordinators who assisted with components of the guideline development.

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Falls Prevention

Best Practice Guidelines

Community integration supplement

2003

Quality Improvement
and Enhancement Program



Queensland Government
Queensland Health



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S.0 Community Integration Supplement

S.1 Introduction

Prevention of falls and fall-related injuries are national and state health priority areas. Falls in people aged 65 years and over are of particular concern due to their frequency, associated morbidity and mortality, and cost to the individual, community and health care system. At an organisational level there is a duty of care to act on available falls prevention information and there is a subsequent risk of litigation associated with inaction.

This *Community Integration Supplement* to the *Best Practice Guidelines* is intended to help bridge the gap between the community, health care facilities and residential aged care facilities. Valuable information on falls prevention risk factors, strategies and education is contained in the earlier parts of this document.

This edition also includes information on health promotion and falls prevention interventions of a more global nature that require further attention. For ease of use, the references are included at the end of the supplement in alphabetical order.

This supplement should be used by Queensland Health staff as a basis for best practice in preventing falls and fall-related injuries in people over 65 years of age who are living in community dwellings.

It is assumed that health care professionals will use their clinical knowledge and judgment in applying the general principles and specific recommendations contained in this *Community Integration Supplement* to the assessment and management of individual clients.

This supplement supports the *Health Outcomes Plan – Injury Prevention and Control 2000-2004*; the *National Injury Prevention Plan: Priorities for 2001–2003*, the *Statewide Action Plan: Falls Prevention in Older People 2002-2006* and Queensland Health's *Integrated Risk Management Framework for Clinical and Corporate Services*.

S.2 Falls assessment and management guideline

The Falls assessment and management guideline (S.2.1) is current, evidence-based best practice in the management of a person who has fallen or is at risk of falling.

The guideline has been developed from a review of current falls prevention literature. The main references are included in the guideline. The guideline has undergone extensive consultation at Queensland Health zonal falls prevention forums; a statewide falls prevention work group and community health forums. Modifications and additions were made to the algorithms as suggested in the literature, so they can be applied across the health care continuum.

The origin of the guideline is current, evidence-based best practice sought from internationally accepted literature and authors [1, 10, 22]. If the literature recommendations were to be context specific, they needed to be modified.

The guideline should be viewed as a mechanism by which a person at risk of falling or those who have already fallen should move through the continuum of care.

The implications of attempting to perform falls evaluations on everyone who falls or is at risk of falling are both financially and logistically challenging. These challenges have been considered. Achievement of best practice requires the determination of all possible causes of falling and intervention to reduce a person's risk of falling in the future.

A minimum standard of best practice would include:

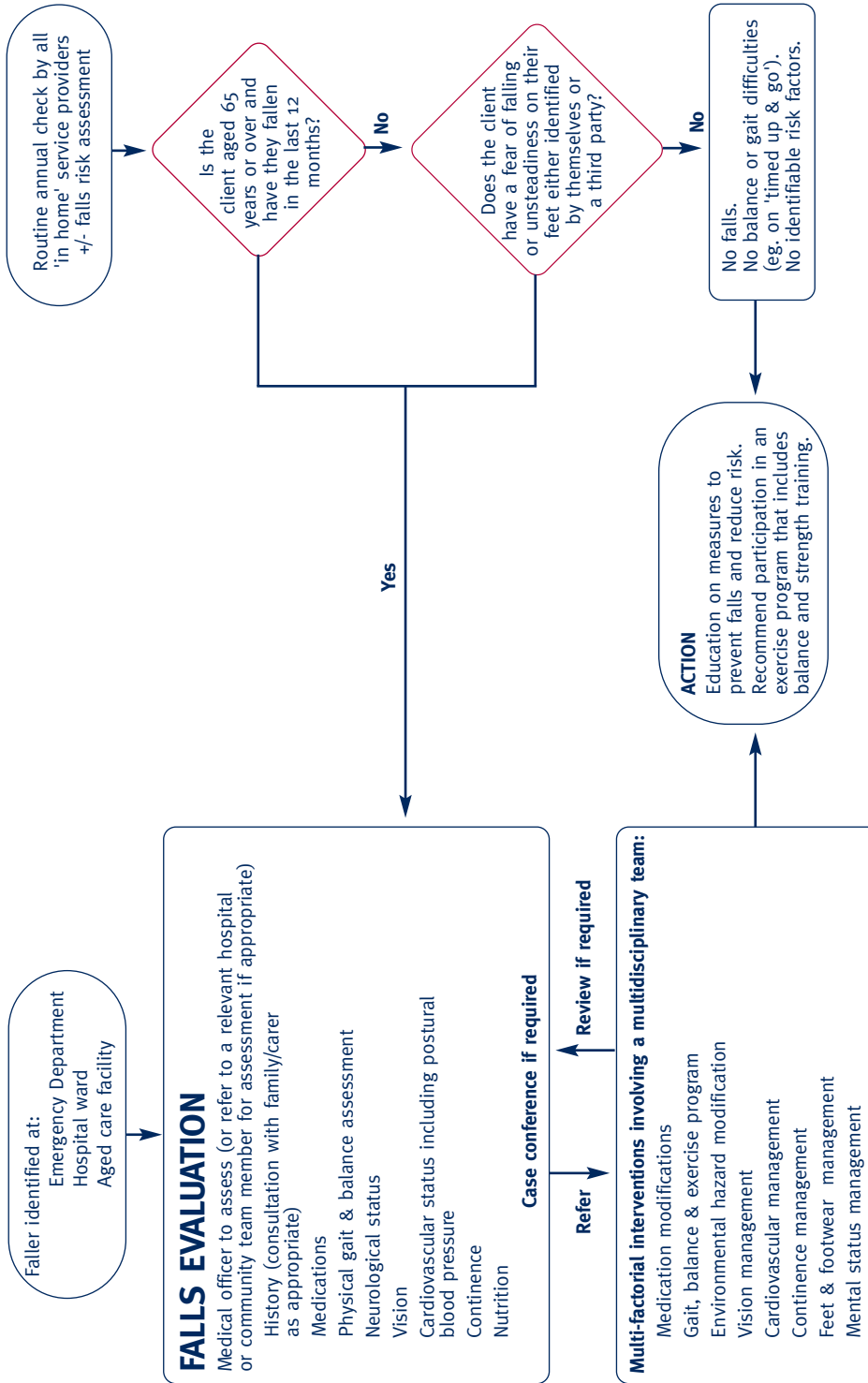
- identification of falls risk
- performance of a falls evaluation
- action based on the results of the evaluation.

On the reverse side of the guideline is the Falls assessment and management guideline – Resource list (S.2.2). This can be used for recording key agencies and contacts that may be required in the management of someone who has fallen or is at risk of falling. This can form part of the multidisciplinary management plan. To allow the user to keep an updated list, laminated copies are also available which can be written on with a white board marker (QH Falls-12).

Consultation:

Queensland Health (2003) QIEP falls prevention forums – Southern, Central and Northern Zone delegates' comments.
Queensland Health, Falls in older people working group. 2003.

S.2.1 Falls assessment and management guideline



References:

American Geriatrics Society, British Geriatrics Society, American Academy of Orthopaedic Surgeons Panel on Falls Prevention (2001) Guidelines for the prevention of falls in older persons. *Journal of the American Geriatrics Society*. 2001; 49:664-672.

Chen Gatti, J. Cochrane Abstract. Which interventions help to prevent falls in the elderly? *American Family Physician*. 2002; 65(11):2259-2261.

Tinetti, M.E. Preventing falls in elderly persons. *New England Journal of Medicine*. 2003; 348 (1):42-49.

Queensland Health. Falls prevention: Best practice guidelines for public hospitals and state government residential aged care facilities. 2002.

Consultation:
Queensland Health (2003) QIEP falls prevention forums - Southern, Central and Northern Zone delegates' comments.
Queensland Health, Falls in older people working group. 2003.

This guideline was developed as part of the Quality Improvement and Enhancement Program's Falls Prevention for Public Hospitals and State Government Residential Aged Care Facilities Project.

Ver 05/2003 QH Falls-12

S.2.2 Falls assessment and management guideline – Resource list

Falls risk factor requiring action	Local contact / Resource	Contact Detail (Tel/fax/e-mail)
General Practitioner		
Medication modifications		
Gait, balance and exercise program		
Environment hazard modification		
Vision management		
Cardiovascular management		
Continence management		
Feet and footwear management		
Mental status management		
Nutrition management		
Speech and communication management		

Additional information: _____

This tool was developed as part of the Quality Improvement and Enhancement Program's Falls Prevention for Public Hospitals and State Government Residential Aged Care Facilities Project.



S.3 Assessment information

Review of current literature and consultation with community-based organisations and academic institutions suggests that there is no definitive and valid falls risk assessment tool or environmental assessment tool that is suitable for application across the broad spectrum of community health.

Many agencies and individual health professionals prefer to modify an existing tool or develop their own tools that are context specific. Therefore this guideline provides:

- tools suitable for immediate implementation:
 - Falls risk assessment tool – Community
 - Falls prevention: Risk assessment action plan
 - Falls prevention: Environmental audit - Community
 - Falls prevention: Environmental audit action plan
 - Falls prevention: Your safety checklist and guide, designed for client use
- references for additional falls risk assessment tools
- references for additional environmental audit tools
- information required to develop a tool using the risk management framework.

These tools are targeted for use and distribution by health care professionals.

S.3.1 Falls risk assessment tool - Community

The Falls risk assessment tool – Community (S.3.1) is designed for use by health care professionals. It uses a rating scale and specific criteria against risk factors in an attempt to quantify falls risk. It is not a scientifically validated tool but rather an assessment upon which to base intervention and treatment planning.

The Falls prevention: Risk assessment action plan – Community (S.3.2) on the reverse side should be used to plan actions against the risk factors. Priority should be given to those risk factors that score more highly on the risk assessment.

Below are some explanatory notes on how to interpret the criteria on the fall risk assessment tool.

(A) Medicines

It is recommended that *MIMS* [17], *Australian Medicines Handbook* [20] or similar reference guide be used to access information on the medicines that clients are taking. However, for ease of reference, an explanation of some medicines most associated with

an increase in falls risk is outlined below. Be aware that this list is a guide and is not comprehensive. The examples provided are limited lists that were current at time of publication (June 2003).

It should be remembered that the risk of falls increases with the number of medicines being taken. Sometimes an effect may only manifest or become more pronounced with increasing age and associated debility or during times of illness.

As a clinician, remember to ask: “*Do you take four or more medicines?*” and “*Have you had your medicines reviewed in the last 12 months?*”

Medicines affecting the CNS (Central Nervous System)

The effects/side effects of this group of medicines may predispose a person to falling. Possible effects/side effects include, but are not limited to, confusion, dizziness and reduced reaction times.

Some examples of medicines in this category are listed below.

Opioid analgesics are taken for pain and can cause sedation and or cognitive impairment.

Codeine (also present in Panadeine Forte®)
Morphine (MS Contin®, Kapanol® or Ordine®)
Oxycodone (Endone®, Oxycontin® or Oxynorm®)
Tramadol (Tramal®)

Anti-depressants may cause postural hypotension, sedation and/or cognitive impairment due to anticholinergic effects, which can contribute to a fall.

Amitriptyline (Tryptanol® or Endep®)
Citalopram (Cipramil®)
Dothiepin (Dothep® or Prothiaden®)
Doxepin (Deptran® or Sinequan®)
Fluoxetine (Prozac®, Lovan® or Zactin®)
Sertraline (Zoloft®)

Anti-psychotics/neuroleptics may cause postural hypotension, cognitive impairment, sedation or Parkinsonian type effects (may present as slight rigidity or instability).

Chlorpromazine (Largactil®)
Trifluoperazine (Stelazine®)
Haloperidol (Serenace®, Thioridazine, Melleril® or Aldazine®)
Olanzapine (Zyprexa®)
Risperidone (Risperdal®)
Quetiapine (Seroquel®)

Anti-histamines (in particular the older anti-histamines) have anticholinergic effects and also cause CNS sedation which can contribute to a fall.

Dexchlorpheniramine (Polaramine®)
Promethazine (Phenergan®) – similar effects as anti-psychotics

Anticonvulsants can cause ataxia or confusion.

Carbamazepine (Tegreto® or Teril®)
Phenytoin (Dilantin®)
Sodium Valproate (Epilim® or Valpro®)

Anti-Parkinsonians can cause postural hypotension.

Levodopa (Madopar® or Sinemet®)

Benzodiazepines can impair balance centrally and peripherally leading to increased body sway. They can cause CNS depression leading to reduced reaction times. Risk is increased when multiple benzodiazepines are prescribed.

Diazepam (Antenex® or Valium®)
Temazepam (Normison®, Temaze® or Euhypnos®)
Nitrazepam (Mogadon® or Alodorm®)
Oxazepam (Serepax® or Alepam®)

Non-steroidal anti-inflammatories may cause light-headedness especially when commencing a course of this medicine.

Ibuprofen (Brufen®, Rafen® or Nurofen®)
Naproxen (Naprosyn® or Inza®)
Piroxicam (Feldene® or Mobilis®)

Cardiovascular medicines

By reducing blood pressure, this group of medicines may increase the risk of postural hypotension, which may in turn be associated with an increased risk of falls. Diuretics may cause electrolyte imbalances or dehydration that will then predispose a patient to falling. They also cause urgent diuresis resulting in incontinence.

If the person becomes febrile or dehydrated, these effects may become more noticeable or problematic.

Some examples of current medicines in this category are listed below.

Anti-hypertensives and/or anti-arrhythmics increase the risk of falls by reducing blood pressure, which may in turn be associated with postural hypotension.

Amlodipine (Norvasc®)
Atenolol (Tenormin® or Noten®)
Digoxin (Lanoxin®)
Diltiazem (Cardizem®, Coras® or Vasocardol®)

Irbesartan (Karvea® or Avapro®)
Lisinopril (Zestril® or Prinivil®)
Metoprolol (Betaloc® or Minax®)
Perindopril (Coversyl®)
Verapamil (Isoptin® or Anpec®)

Anti-anginals work by causing the blood vessels to dilate and reducing the oxygen requirement of the heart. However, their action may increase the risk of postural hypotension, which may result in a fall.

Glyceryl Trinitrate (Anginine®, Nitro-Dur Patch®, Transiderm-Nitro Patch® or Nitro-Lingual Spray®)
Isosorbide Mononitrate (Imdur®)

Diuretics may cause electrolyte imbalances or dehydration, which may then predispose a person to falling. They may also cause urgent diuresis resulting in the need to rush to the toilet or possible urinary incontinence.

Fruzemide (Lasix® or Uremide®)
Hydrochlorothiazide (Dichlotride®)
Indapamide (Natrilix®)

If there are any concerns regarding a client's risk of falls or potential for medicine misadventure, a referral to their general practitioner requesting a *Home Medicines Review* should be considered. This is a Commonwealth funded initiative that involves a specially trained pharmacist visiting the client's home to review their medicines. Further information can be obtained from a pharmacist or general practitioner.

(B) Balance

There are a number of different ways to assess balance. The Timed Up and Go (TUG) is recommended as the most appropriate tool based on its ease of use in the community setting [2, 16, 18].

The TUG is a sensitive and specific measure for identifying community-dwelling adults who are at risk of falling [18, 21].

How to do the TUG [18]

The instructions given below are a guide and may need to be modified when performing the assessment in a client's home. To ensure reliable re-test results, always use the same chair, footwear and walking aid when testing.

- Equipment required: Stopwatch, standard height armchair, marked three-metre course.
- Method:
 - the client begins seated in a standard height armchair with their back against the backrest and arms resting on the armrests
 - the client is tested using their usual footwear

- the client has their walking aid (if required) within reach
- a marker is placed on the floor three metres from the chair
- one practice trial is given to become familiar with the test
- the standardised instruction is given: *“On the word ‘go’, I want you to walk at a comfortable and safe pace to the marker on the floor, turn, walk back to the chair and sit down again”*
- the test is timed from the instruction “go” until the subject achieves sitting again
- if the subject cannot complete the test without assistance they should be recorded as a ‘3’ on the fall risk assessment tool.

Normative data:

Age group	Lower limit (sec)	Upper limit (sec)
41-50	5.1	10.1
51-60	5.3	10.8
61-70	5.3	11.9
71-80	5.9	12.1

Times higher than the upper limits indicate a possible mobility deficit.

(C) Mental state

(based on the Mental Status Questionnaire)

Ask these questions when assessing mental state as a risk factor for falling on the falls risk assessment tool

- orientation to place:
 - What town is this?
 - What place is this?
- orientation to time:
 - What is today’s date?
 - What month is this?
 - What year is this?
- orientation to person:
 - How old are you?
 - What year were you born in?
 - What month were you born in?

(D) Vision

In simple terms:

- age-related maculopathy is when central vision is impaired
- glaucoma is when peripheral vision is impaired
- cataracts cause general blurred vision.

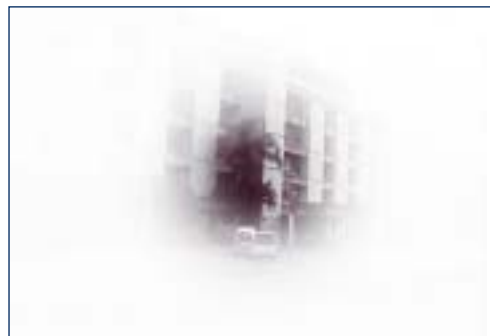
Normal



Age-related maculopathy



Glaucoma



Cataracts



(E) Incontinence

In simple terms:

- nocturia is a need to toilet at least twice during the night
- stress incontinence is that which occurs with a cough, sneeze or other increase in intra-abdominal pressure
- urge incontinence occurs when the need to toilet is felt and access to a toilet is required immediately.

For more information refer to section 2.4 Continence Management of the *Falls Prevention Best Practice Guidelines for Public Hospitals and State Government Residential Aged Care Facilities* [19].

(F) Foot pain and footwear

Hallux valgus, often referred to as “a bunion” is a deformity of the big toe. The big toe tilts over towards the smaller toes and a bony lump appears on the medial aspect of the ball of the foot. Pressure of a shoe over the deformity can cause discomfort or pain. Pain under the ball of the foot (“metatarsalgia”) may also result. Sometimes arthritis develops in the deformed joint, causing pain in the joint [6].

(G) Speech and communication

Select a risk score from the rating scale based on the criteria. Dysphasia refers to a language problem caused by brain damage, which is associated with complete or partial loss of the ability to understand, speak, read and/or write [5].

(H) Client’s perceived risk of falling

This can be used as a subjective measure of the client’s own perception of their risk of falling and can be reassessed at subsequent consultations.

S.3.2 Falls prevention: Risk assessment action plan – Community

The action plan uses a risk management framework for planning and evaluating the effectiveness of interventions. Some people who are familiar with this framework will find it quite simple to work with. For others it will take some practise.

To ensure high quality of care be sure to undertake thorough assessment, planning, implementation, evaluation and modification of a client’s management. This can be done using the risk management framework as outlined in this document. The process of clinical reasoning follows a similar quality cycle. When it is performed in conjunction with thorough and accurate documentation it is also an excellent way of achieving high quality care.

The action plan is located on the reverse side of the risk assessment tool. Each of the risk factors has a separate row.

How to use the Falls prevention: Risk assessment action plan – Community:

The action plan should be seen as an adjunct to case conferences and multidisciplinary teamwork. Alternatively, it may identify factors that require referral to another practitioner or service.

The first time the client is assessed, document the risk score and the actions required to reduce the risk of falling. Document who is responsible for the action, the date it is expected to be achieved and the date the assessment will be re-evaluated.

At subsequent reviews, document the effect the actions had in reducing falls risk. Copies of the action plan should be made if required.

At the end of the process a sequence of events will emerge that reflects assessment, planning, implementation, evaluation and modification of management. The ultimate aim is a reduced risk of falling.

S.3.1 Falls risk assessment tool – Community

Risk factors		Rating Scale			Date / /		
		0	1	2	3	Score	Score
<p>Falls history</p> <p>0 – 19 years</p> <p>Takes no medicines that affect either CV or CNS function</p> <p>Less than 10 seconds without a walking aid</p> <p>Oriented to time, place & person</p> <p>Lives with others. Requirement for home modifications unlikely</p> <p>Appears nourished. Normal sleep pattern</p> <p>Normal</p> <p>None</p> <p>No foot pain or hallux valgus. Shoes are well fitting with flat heel (<2.5cm), firm sole and firm heel counter</p> <p>Normal</p> <p>None</p>		<p>Single Fall in last 6 months</p> <p>20 – 59 years</p> <p>Takes medicines for cardiovascular function (eg. heart, BP medicines)</p> <p>Less than 10 seconds with a walking aid</p> <p>Oriented to place & person</p> <p>Lives alone. Requirement for home modifications unlikely</p> <p>Reduced appetite &/or sleep disturbance</p> <p>Wears glasses</p> <p>Increased frequency</p> <p>No foot pain or hallux valgus. Wears slippers or ill fitting footwear occasionally</p> <p>Speech deficit but understood</p> <p>1 chronic condition</p>	<p>Single Fall in last 3 months</p> <p>60 – 70 years</p> <p>Takes medicines that affect CNS (eg. for insomnia, depression)</p> <p>10-20 seconds</p> <p>Oriented to person only</p> <p>Lives with others. Home modifications required</p> <p>Underweight &/or severe sleep disturbance</p> <p>Maculopathy, blurred vision, cataract or glaucoma</p> <p>Nocturia or stress incontinence</p> <p>Foot pain / hallux valgus not affecting mobility. Wears slippers or ill fitting footwear when mobilising</p> <p>Dysphasia/language/communication barrier</p> <p>> 1 chronic condition</p>	<p>Single Fall in last month or multiple falls in last year</p> <p>> 70 years</p> <p>Takes medicines that affect both CV & CNS. Takes 4 or more medicines</p> <p>Greater than 20 seconds &/or unable to complete independently</p> <p>Disoriented &/or impaired judgement &/or impulsiveness &/or depression</p> <p>Lives alone. Home modifications required</p> <p>Obviously underweight. Unintentional weight loss &/or postural hypotension</p> <p>Severe visual disturbance or blindness</p> <p>Urge incontinence</p> <p>Foot pain or hallux valgus affecting mobility &/or wears slippers or ill fitting footwear when mobilising</p> <p>Severe deficit. Severe language/communication barrier</p> <p>Multiple illnesses &/or recent acute episode</p>	<p>Date / /</p> <p>Score</p>	<p>Date / /</p> <p>Score</p>	

How to use this tool: Refer to S.3.1 of the Falls Prevention Best Practice Guidelines. Community Integration Supplement.

Surname:
 First Name/s:
 U.R. No:
 Date of Birth:
 (Please affix ID label here if available)

Client's perceived falls risk: 1 **No falls risk** 10 **High falls risk**

This tool was adapted from Eventide Nursing Home, Prince Charles Hospital Health Service District, as part of the Quality Improvement and Enhancement Program's Falls Prevention in Public Hospitals and State Government Residential Aged Care Facilities Project.



S.3.2 Falls prevention: Risk assessment action plan – Community

Falls prevention: Risk assessment action plan Community		Surname: First Name/s: U.R. No: Date of Birth: (Please affix ID label here if available)				Due for review on
Risk factor	Risk score	Action required	Effect of these actions in reducing falls risk	Who is responsible	Date due	
Medications causing loss of balance						
Gait and balance deficits						
Mental state deficits						
Environment						
General health, nutrition &/or cardiovascular disorder (including postural hypotension)						
Visual deficit						
Incontinence resulting in urgency to toilet						
Foot pain &/or inadequate footwear						
Speech &/or communication difficulties						
Chronic illness						
Other						

Comments: _____ Completed by: _____

This tool was developed as part of the Quality Improvement and Enhancement Program's Falls Prevention for Public Hospitals and State Government Residential Aged Care Facilities Project.





S.3.3 References to other risk assessment tools and literature

- EFST – Elderly falls screening tool [12]
Cwikel, J; Fried, V; Biderman, A. and Galinsky, D. Validation of a fall-risk screening test, the elderly fall screening test (EFST), for community dwelling elderly. *Disability and Rehabilitation*, 1998; 20:161-167.
- FRAT – Falls risk assessment tool [15]
Hines, M; MacAvoy, S. and Skinner, T. Falls risk assessment tool (FRAT). *Applied Nursing and Research*, 1996; 9(4): 213-218.
- SAFER – Safety assessment of function and the environment for rehabilitation (SAFER) tool [3, 7]
Blathwayt, J; Brackley, C; Oliver, R. and Tamaki, T. Development of the safety assessment of function and the environment for rehabilitation (SAFER) tool. *Canadian Journal of Occupational Therapy*, 1993; 60(2): 78-82.

Burtney, J; Letts, L; McKean, M; Marshall L. and Scott, S. The reliability and validity of the Safety Assessment of Function and the Environment for Rehabilitation (SAFER Tool). *British Journal of Occupational Therapy*, 1998; 61(3): 127-132.
- Overview of falls risk assessment across the continuum of care [13]
Goldman, S.L; Luther, S.L; Perrell, K.L; Prieto-Lewis, N; Nelson, A. and Rubenstein, L.Z. Falls risk assessment measures: an analytic review. *Journal of Gerontology*, 2001; 56(12): 761-766.

S.3.4 Individual environmental audit tool and action plan - Suitable for immediate use

S.3.4.1 Falls prevention: Environmental audit – Community

The Falls prevention: Environmental audit – Community is a checklist for identifying environmental factors that can contribute to a fall. The requirement to complete the tool could be flagged in the Falls prevention: Risk assessment action plan – Community (S.3.2) – ‘environment’ risk factor.

This tool guides the assessor through the dwelling and includes a basic assessment of the following categories: bedroom; furniture; mobility aids; bathrooms and toilets; floor surfaces; lighting; passageways and external areas. Answering ‘no’ to a question indicates action is required.

S.3.4.2 Falls prevention: Environmental audit action plan - Community

The user then needs to go to the ‘Falls prevention: Environmental audit action plan - Community’ and complete the relevant sections in a similar way that would occur in the ‘Falls prevention: Risk assessment action plan - Community’ that was outlined above. The probable course of action would be referral to an occupational therapist.



S.3.4.1 Falls prevention: Environmental audit – Community

<p>Falls prevention: Environmental audit - Community</p> <p>Ticking 'no' indicates that action is required</p>	<p>Surname:</p> <p>First Name/s:</p> <p>U.R. No:</p> <p>Date of Birth:</p> <p>(Please affix ID label here if available)</p>			
Bedrooms	Please tick appropriate box	Yes	No	N/A
<ul style="list-style-type: none"> • Is the bed at the lowest height for safety of client (ie. so they can sit and touch the floor with their feet with their legs at 90 degrees)? • Is there a personal alarm/telephone within easy reach of client? • Is the mattress firm to provide support when moving in the bed? • Does the client have a bedside table that they can put things on safely without undue stretching or twisting? • Can the client store their walking aid so they can reach it without getting off the bed? • Is the bed stable and unlikely to move when the client stands and sits? • Can the client get in/out of bed safely and independently? • Does the client have easy access to night-lights? • Can the client turn and manoeuvre their walking aid freely in the room? • Is the room free of clutter? • Is the room free of cords and other hazards on the floor? • Is the room free of loose rugs on the floor? 				
Furniture	Please tick appropriate box	Yes	No	N/A
<ul style="list-style-type: none"> • Are the client's chairs the correct height (ie. allow the client to have feet on ground and legs at 90° angle)? • Do chairs have sturdy armrests to assist client getting in and out of them? • Are chair legs positioned under the seat rather than sticking out and being a hazard? • Are the pieces of furniture secure enough to support a client should they lean upon them or grab them if they lose their balance? • Can the client rise/sit with ease? • Can the client safely move and reach any footstools before transferring? 				
Mobility aids	Please tick appropriate box	Yes	No	N/A
<ul style="list-style-type: none"> • The client has been educated regarding safety with aid (walker/wheelchair) • Is the mobility aid the appropriate height for the client (elbow approximately 15° bent)? • Is the aid kept within easy reach? • Walking sticks: The stopper is in good condition (not worn through etc.) Stick does not fall over when the client leaves it by the bed/chair Walking sticks are unlikely to fall on floor when not in use. • Wheelchair/wheelie frame: Brakes are in good working order Tyres are pumped up and aid is easy to manoeuvre Footplates of wheelchair are easy to move. 				
Bathrooms and toilets	Please tick appropriate box	Yes	No	N/A
<ul style="list-style-type: none"> • Are there properly positioned and secure handrails next to the toilet, shower and bath? • Have floors been treated with a non-slip preparation, which has been redone in the past two years? • Are non-slip mats used in the bath and shower? • Are areas immediately around the bath and sink marked in contrasting colours? • Is there a raised toilet seat that is well fitted and secure? • Do the toilets have surrounds to provide support when getting on and off the toilet? 				





S.3.4.1 Falls prevention: Environmental audit – Community (continued)

Bathrooms and toilets (continued)	Yes	No	N/A
• Are there receptacles for soap, shampoo and washers which are easy to reach and do not require the client to bend over?			
• Does the client have 'soap on a rope' to avoid dropping the soap and having to bend down and pick it up?			
• Is the shower chair the correct height and does it have armrests and rubber stoppers on the legs?			
• Is there room for a seat in <i>and</i> near the shower?			
• Is the shower base step-less?			
• Is a personal alarm or telephone within reaching distance if the client falls?			
• Are doors lightweight and easy to use?			
Floor surfaces Please tick appropriate box	Yes	No	N/A
• Are carpets low-pile firmly attached and a constant colour rather than patterned?			
• Are walls a contrasting colour to the floor?			
• Is non-skid wax used on wooden and vinyl floors?			
• Do floors have a matt finish, which is not glary?			
• Does water on the bathroom floor drain and dry easily?			
• Are ramps used whenever possible rather than stairs?			
• Do steps have a non-slip edging in contrasting colour to make it easier to see?			
• Are floors routinely cleaned?			
Lighting Please tick appropriate box	Yes	No	N/A
• Is lighting in all areas at a consistent level so that the client is not moving from darker to lighter areas and vice versa?			
• Do staircases have light switches at the top and bottom of them?			
• Does the client have easy access to night-lights?			
• Are all light switches accessible by the client (ie. not too high etc.)?			
• Are the hallways and rooms well-lit (ie. 75 watts)?			
• Is glare absent from windows?			
• Are all switches marked with luminous tape for easy visibility?			
Passageways Please tick appropriate box	Yes	No	N/A
• Are all passageways kept clear of clutter and hazards?			
• Are firm and colour-contrasted handrails provided in passageways and stairwells?			
• Is there adequate space for mobility aids?			
• Are ramps used whenever possible rather than stairs?			
• Do steps have a non-slip edging in a contrasting colour?			
• Is there enough room for two people to pass each other safely?			
External areas Please tick appropriate box	Yes	No	N/A
• Are pathways even, with a non-slip surface?			
• Are pathways clear of weeds, moss and leaves?			
• Are steps marked with a contrasting colour and non-slip surface?			
• Are there handrails beside external steps and pathways?			
• Are there any overhanging trees, branches and shrubs?			
• Are there sensor lights that provide light at night?			
• Are there sufficient numbers of outdoor seats for regular rests?			

Completed by: _____ Date: _____

This Falls Prevention Environmental audit - Community was originally developed by the Centre for Education and Research on Ageing (CERA) and was first published in *Putting Your Best Foot Forward*. It has been adapted and reproduced with the permission of CERA, as part of the Quality Improvement and Enhancement Program.



Queensland Government
Queensland Health



S.3.4.2 Falls prevention: Environmental audit action plan – Community

Falls prevention: Environmental audit action plan - Community		Surname: First Name/s: U.R. No: Date of Birth: (Please affix ID label here if available)				
Risk factor	Risk score	Action required	Effect of these actions in reducing falls risk	Who is responsible	Date due	Due for review on
Bedrooms						
Furniture						
Mobility aids						
Bathrooms and toilets						
Floor surfaces						
Lighting						
Passageways						
External areas						
Other						

Comments: _____ Completed by: _____

This tool was developed as part of the Quality Improvement and Enhancement Program's Falls Prevention for Public Hospitals and State Government Residential Aged Care Facilities Project.





S.3.5 References to other environmental assessment tools

- Westmead Home Safety Assessment [11]
Clemson L. *Home fall hazards: A guide to identifying fall hazards in the homes of elderly people and an accompaniment to the assessment tool, the Westmead Home Safety Assessment (WeHSA)*, Coordinates Publications, West Brunswick, Victoria, 1997.
 - HOME FAST [8, 9]
Byles, J; Higginbotham, N. and MacKenzie, L. Designing the home falls and accident screening tool (HOMEFAST) Selecting the items. *British Journal of Occupational Therapy*, 2000; 63(6): 260-269.
- Byles, J; Higginbotham, N. and MacKenzie, L. Reliability of the home falls and accident-screening tool (HOME FAST) for measuring falls risk for older people. *Disability and Rehabilitation*, 2002; 24(5): 266-274.

S.3.6 Guidelines on how to develop a risk assessment tool

The risk management approach can be used to develop falls prevention risk assessment tool. It has five basic steps:

1. Hazard identification – Of the risk factors associated with falling, which ones are associated with the client/community (medicine, balance, environment, vision, footwear, age, incontinence, cognitive status, other)?
2. Risk assessment – score and prioritise each risk factor for the individual
3. Risk control – what strategies can be used to reduce the risk of falling
4. Implementation – implement the strategies
5. Evaluation and modification – evaluate the effect of the strategies by reassessing then make modifications accordingly.

The basic risk factors associated with falls are well known and are outlined in chapters one and two of the *Best Practice Guidelines*. However there are often individual risk factors not accounted for in the literature. A risk assessment tool is designed to assist with hazard identification and risk assessment. It is a subjective process used to calculate the level of risk and scores will vary, sometimes considerably, between those who use it.

After scoring the risk factors, prioritise them on an action plan. An example is contained in this document (S.3.2). Determine appropriate interventions, responsibilities and time frames by which the intervention is to be undertaken and when it is to be reviewed for its effectiveness.

Remember that the risk management process is a continuous process of assessment, intervention, implementation, evaluation and modification. It is similar to the cycle of clinical reasoning and can be used as an adjunct to this process.

S.4 Health promotion

What is health promotion?

Health promotion can be defined as:

“The process of enabling people to increase control over, and to improve their health. Health promotion represents a comprehensive social and political process, it not only embraces actions directed at strengthening the skills and capabilities of individuals, but also action directed towards changing social, environmental and economic conditions so as to alleviate their impact on public and individual health. Participation is essential to sustain health promotion action ” [23].

Five key areas of action to guide health promotion process and practice have been identified (in the *Ottawa Charter for Health Promotion* [24]):

1. Building healthy public policy (eg. establishing a referral pathway policy to appropriately manage individual risk factors; advocating for the reduction of environmental risk factors through local Government planning processes/policies)
2. Creating supportive environments (eg. preventing exposure to home hazards through home assessment and hazard identification; collaborating with local councils, retailers and transport authorities to improve safety and accessibility of public environments for older people)
3. Strengthening community action (eg. supporting local community representatives/organisations to increase availability and access to gentle exercise opportunities for older people)
4. Reorienting services (eg. enhancing coordination/integration across the continuum of health care; recognising the role/responsibility for, or commitment to, falls prevention by key stakeholders)
5. Developing personal skills (eg. increasing knowledge of falls risk factors and encouraging attitudes that support healthy and safe behaviours in older people; providing falls prevention information that is accessible and appropriate).

Good practice

It can be seen that good practice in health promotion does not rely on one strategy used in isolation.



Instead, multi-strategic action is required across all five action areas. Good practice in health promotion recognises the following:

- Knowledge and information are not enough to change behaviour. Many authors identify that health promotion based solely on providing knowledge and information is relatively unsuccessful. Although it is necessary, knowledge and information alone are not enough to produce long term behaviour or lifestyle changes.
- Avoid health promotion strategies based solely on changing an individual's behaviour or lifestyle. Many variables influencing behaviour, lifestyle and risk factors can be seen to be outside an individual's control and choice. Thus, an individual is not solely responsible for their health, as the outside effects of social structure, culture, economic resources and political forces all work together to shape and limit individual choices.

Does health promotion work?

There is an increasing body of evidence that health promotion is effective. In some cases, it has taken time to prove, given a time interval between the process and outcome of health promotion.

Who is responsible?

All staff can incorporate health promotion into their work practices. The responsibility of staff to be committed to health promotion is reinforced in Queensland Health's Corporate Plan and Health 2020, which identify that prevention, health promotion and early intervention are necessary for the better health and wellbeing of Queenslanders.

Falls prevention

Injury prevention and control is one of seven National Health Priority Areas. Given its incidence and the financial, personal and social impacts of falls in older people, combined with increasing numbers of older people in the population, falls prevention in older people is an injury prevention priority now and in the future.

Queensland Health has developed the *Statewide Action Plan: Falls Prevention in Older People 2002-2006* to provide strategic direction across the continuum of care. These *Falls Prevention Best Practice Guidelines* are a practical tool to assist in addressing risk factors and injury prevention strategies for falls. Assessment tools are provided to help determine a person's risk of falling and to perform a safety audit on the person's environment. Importantly, the Falls Assessment and Management Guideline illustrates an evidence-based

process of how a person who has fallen, or is at risk of falling, should be cared for in our health care system.

Need for partnerships

Actions to prevent falls are not the sole responsibility of the health sector, due to the varied risk factors for falls and the various settings within which falls occur. Collaborative partnerships are required with key stakeholders (including local Government, other State Government departments, non-Government organisations, industry and older people themselves).

For assistance, advice and support in health promotion practice, contact your local Public Health Unit.

S.5 Interventions requiring further attention

Consistent with the principles of evidence-based practice, new information on falls prevention is continually emerging in the published literature. Three areas that require brief discussion include falls clinics, patient sitter programs and response systems. Although the literature on these areas is limited at present, they are areas that appear promising for the future direction of falls prevention.

S.5.1 Falls clinics

Falls clinics are "*specialist multidisciplinary services, which focus on the assessment and management of clients with falls, mobility and balance problems. Clinics commonly provide time limited, specialist intervention to the client and advice and referral to mainstream services for ongoing management. They provide education and training to clients, to carers and to health professionals*" (Victorian Department of Human Services (in [14]).

Falls clinics target older people with established balance dysfunction or people who are at increased risk of falls. Referrals are typically received from general practitioners, medical specialists and other health professionals.

A core team consisting of a geriatrician, physio-therapist and an occupational therapist typically staffs the clinic. Other team members may include registered nurses, social workers, psychologists, podiatrists, dieticians and pharmacists.

A comprehensive multidisciplinary assessment is undertaken, following which, ongoing management issues are identified. The client is provided with an individually tailored falls prevention program. Interventions often include gait aid recommendations, home exercise programs and injury prevention



strategies (such as hip protector pads and personal alarms). Home hazard assessments are often conducted by occupational therapists in the client's home. Medical interventions, including medication management and further investigations, are often referred back to the client's general practitioner for continued management. Review by other medical specialists (eg. neurologists) may be arranged. Activities such as supervised exercise programs are generally referred to existing community agencies for ongoing input.

Although literature regarding falls clinics is limited at present, the results of existing research appear promising.

S.5.2 Patient sitter programs

Some facilities have introduced patient sitter programs [4]. These programs use volunteers, families or paid staff to sit with patients or residents who are at high risk of falling. The sitters are rostered to spend between two and eight hours with a patient/resident at a time. The role of the sitter is to provide company for the patient/resident and to notify the appropriate staff when the person wishes to undertake an activity where they may be at risk of falls (such as transferring or mobilising).

The literature regarding patient sitter programs is not conclusive. However, this may be a viable strategy in certain settings, in an effort to reduce the risk of falls for selected patients/residents. Further research is needed.

S.5.3 Response systems

Response systems are usually a form of monitor, incorporating an alarm that sounds when a person moves. There are a number of response systems commercially available. In some systems, an alarm is activated when a person starts to move from a bed or chair. The alarm is caused by the resulting lack of pressure on the surface the person was sitting or lying on. In other systems, an alarm sounds when any part of a person's body moves within a space monitored by the alarm. Another style of system activates when a person falls, but does not get up.

The limitations of response systems include the capital investment required in purchasing the system and reliance on a third party (staff or the person's carer) to intervene when the alarm sounds.

Falls clinics, patient sitter programs and response systems are emerging in the published literature as areas with potential to form part of a multifaceted falls prevention program. Although no

solid recommendations can be made on these programs at present, these areas warrant further attention, as we strive for best practice in falls prevention.

S.6 Falls prevention brochure series

The falls prevention brochures depicted on the following pages are available from:

Goprint
Locked Bag 500
Coorparoo DC
Queensland 4151 Australia

Telephone +61 7 3246 3500
Facsimile +61 7 3246 3607
Website www.goprint.qld.gov.au

Brochures included in this supplement include:

QH Falls-03

Medicines: Information to help prevent falls

QH Falls-04

Exercise and balance: Falls prevention. How to help yourself

QH Falls-05

Vision: Information about your vision and how to prevent falls

QH Falls-08

Hip protector pads: Information to help you choose hip protector pads

QH Falls-09

Bladder and bowel problems. How to prevent falls related to bladder and bowel problems

QH Falls-10

Falls prevention: For community-dwelling older people

Please note:

The following brochures are contained within the preceding *Falls Prevention Best Practice Guidelines for Public Hospitals and State Government Residential Aged Care Facilities*:

QH Falls-06

Falls prevention: Information about how you can reduce your chance of having a fall while you are in our facility

QH Falls-07

Don't go head over heels: Information to help you choose footwear for comfort, foot care and falls prevention

S.6.1 Medicines: Information to help prevent falls

Medicines

Information to help prevent falls

- Can you give me any information about this medicine? Most medicines have **Consumer Medicines Information**, which is specially written to help consumers/patients.

Keep a list

- Keep a list of all your medicines. Your doctor or pharmacist can print one for you. Remember to add any medicines you have from a supermarket, health food shop or 'natural' medicines. It is a good idea to include the strength, dose and directions.

Read the label on your medicines. The label may include a warning that the medicine may cause dizziness or that it should not be taken with alcohol.

Do not use other people's medicine. Other people's medicine can affect you differently.

Remember:

If you take 4 or more medicines, if you have had a fall in the last 12 months, feel unsteady on your feet or are afraid of falling, make an appointment to see your Doctor.

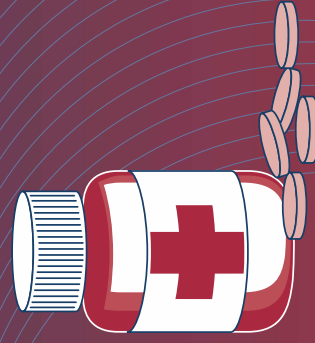
They will try to find the cause of your symptoms and will check your medicines. If you agree, they can arrange to have a Pharmacist (Chemist) visit you at home for a free **Home Medicines Review**.

This brochure was developed as part of the Quality Improvement and Enhancement Program's Falls Prevention for Public Hospitals and State Government Residential Aged Care Facilities Project.

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QH Falls - 03



Falls

Falls are the most common accident among older people. About one third of people aged over 65 years will have a fall each year. Some of these people will have more than one fall.

Many falls result in serious injury that requires medical attention or even admission to hospital. Some falls are less serious but can cause loss of confidence in your ability to walk, which can affect your independence.

This brochure will explain how certain medicines can increase your risk of falls.

Reasons for falls

Loss of balance due to:

- Reduced strength as a result of reduced physical activity
- Some medical conditions (such as stroke, Parkinson's Disease, arthritis, diabetes and epilepsy) and **medicines**
- Painful feet or inadequate footwear (such as slippers)
- Hazards around the home (such as loose mats, extension cords, poor lighting and broken or missing handrails)
- Incontinence while hurrying to the toilet

Side effects of medicines

One of the major causes of falls is taking medicine with side effects that increase the risk of falling. These side effects include:

- Feeling drowsy or tired
- Feeling dizzy, light-headed or faint
- Being unsteady on your feet
- Vision problems (such as blurred vision)
- Confusion

Medicines that can increase the risk of falling

Some medicines that are more likely to increase the risk of falling are medicines used for treating:

- Sleeping problems (insomnia), anxiety, depression or nervous conditions
- Blood pressure, fluid retention, angina and heart conditions
- Cold and flu, allergies and hay fever
- Nausea, vomiting and travel sickness
- Inflammation and arthritis
- Pain, migraine and headache
- Stomach ulcers, reflux and heartburn

The risk of falling is greater when you:

- Take more than one of the above medicines
- Take any of the above medicines with alcohol
- Begin taking a new medicine
- Take four or more of any medicines (including medicines from supermarkets and health food shops)

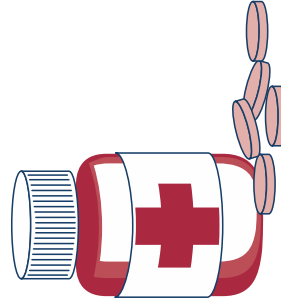
What can you do?

Have your medicines checked.

- Talk to your doctor or pharmacist about your medicines and ask them to review your medicine regularly. Always do this if you have a fall or feel unsteady on your feet.
- Make an appointment with your doctor especially to talk about your medicines. Remember to bring all your medicines to the appointment.
- Ask your doctor or pharmacist to arrange a **Home Medicines Review**. This is when a specially trained pharmacist will visit you at home to discuss and review all your medicines. You will not have to pay for this service.

Ask about side effects and other medicines information. For example:

- What can I do to reduce the chance of side effects? Often a medicine has to be taken for a particular medical condition but there may be some ways to reduce the side effects and the risk of falling. Sometimes you can be prescribed a different medicine.



S.6.2 Exercise and balance: Falls prevention. How to help yourself

Exercise and balance

Falls prevention
How to help yourself

Reference:
National Physical Activity Guidelines [Online], Available: <http://www.health.qld.gov.au/npag/> Accessed March 2003

Other brochures in this series include:

- Falls prevention: Information about how you can reduce your chance of having a fall
- Don't go head over heels: Information to help choose footwear for comfort, foot care and falls prevention.
- Hip protector pads: Information to help you choose hip protector pads.
- Falls prevention: Medicines.

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QH Falls - 04



Remember:

If you take 4 or more medicines, or if you have had a fall in the last 12 months, feel unsteady on your feet or are afraid of falling, make an appointment to see your Doctor.

They will try to find the cause of your symptoms and will check your medicines. They may arrange for you to see a physiotherapist. The physiotherapist will check your balance and give you an individual exercise program.



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Falls Prevention

in Older People

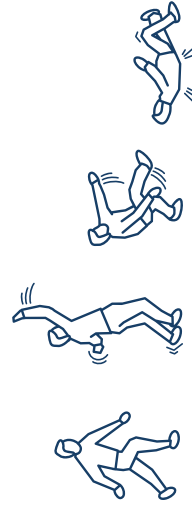
Who falls?

In the community:

- One third of people over 65 years old fall each year.
- Some of these people have multiple falls.
- One third of falls require medical attention.
- Many falls result in serious injury that requires medical attention or even admission to hospital. Some falls are less serious but can cause a loss of confidence in your ability to walk, which can affect your independence.

What can happen if you fall?

- Injuries sustained from a fall can be serious.
- You could break a bone and you might lose your confidence in walking.



Why do people fall?

- Balance problems can be a side effect of some medicines and medical conditions.
- Weakness and balance problems due to inactivity as you get older.
- Some falls happen when people hurry to the toilet.
- Stumbling over obstacles or pets can cause you to fall.
- Painful feet or wearing the wrong footwear can cause you to lose your balance.
- Hazards around the home (such as loose mats, extension cords, poor lighting and broken or missing handrails) can contribute to a fall.

Exercise and balance – the facts

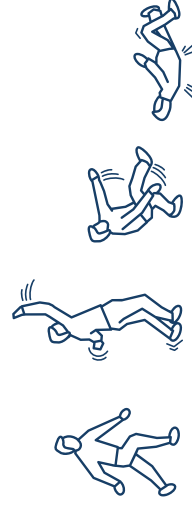
- Your balance can become worse from about the age of 40 years.
- Your balance can be improved with the right kind of exercise, no matter how old you are.
- Ways to improve your balance include Tai Chi, leg strengthening exercises and

an individual exercise program from your physiotherapist.

- The benefits of regular daily exercise continue well into your 90's and beyond.

What can you do?

1. Think of movement as an opportunity, not an inconvenience.
2. Be active every day in as many ways as you can.
3. Put together at least 30 minutes of moderate intensity physical activity on most, preferably all, days.
4. If you can, also enjoy some regular, vigorous exercise for extra health and fitness.
5. Contact your doctor, physiotherapist or community health care worker for advice on how you can improve your balance and be steady on your feet.



S.6.3 Vision: Information about your vision and how to prevent falls



- You can make changes to your home. Try to remove any clutter in your hallways and rooms, so that you are less likely to trip.
- You might want to mark the edge of your steps with brightly coloured tape.
- Lighting
 - Make sure your home has plenty of light. Turn on the lights, especially at night. A bedside light or sensor lights can also help at night.
 - Consider installing movement-activated lights in your hallways.
 - Automatic lights that turn on when it gets dark are also available. These are called photo-electric or light-activated lights.
 - We recommend using 75 watt light bulbs in all rooms, passageways and at your stairs. (Note that some light fittings only take a maximum of 60 watts.)

Ask your optometrist for advice on how you can make it easier to see. An occupational therapist at your local community health centre might also be able to give you advice on how to make your home safer.

Other brochures in this series include:

- Medicines: Information to help prevent falls (QH Falls-03)
- Exercise and balance: Falls prevention: How to help yourself (QH Falls-04)
- Falls prevention: Information about how you can reduce your chance of having a fall while you are in our facility (QH Falls-06)
- Don't go head over heels: Information to help you choose footwear for comfort, foot care and falls prevention (QH Falls-07)
- Hip Protector Pads: Information to help you choose hip protector pads (QH Falls-08)
- Bladder and bowel problems: How to prevent falls related to bladder and bowel problems (QH Falls-09)
- Falls prevention for community-dwelling older people (QH Falls-10)

This brochure was developed as part of the Quality Improvement and Enhancement Program's Falls Prevention for Public Hospitals and State Government Residential Aged Care Facilities Project. The following sources are acknowledged:

- School of Optometry, Faculty of Health, Queensland University of Technology.
- NHMRC Injury Partnership Grant – Prevention of Older People's Injuries, Queensland University of Technology.

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QH Falls - 05

Falls Prevention
in Older People

Vision

Information about your vision and how to prevent falls




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Did you know?

- a third of people aged over 65 years and one half of people aged over 80 years have a fall at least once a year
- some of these people have multiple falls
- one third of these falls require medical attention.

Problems with your vision can increase your chance of having a fall. Vision problems can make it harder to see obstacles, a spill on the floor or a crack in the footpath.

What can happen to your vision?

There are a range of conditions that can affect your vision. Three of the most common ones are listed below. They occur more frequently as you get older.

- **Cataracts**
A cataract is a cloudy area in the lens of your eye. This can make your vision appear blurry or dim and make you more sensitive to glare. It can become hard to see objects clearly, particularly under glary conditions, such as bright sunlight.
- **Maculopathy**
Maculopathy can cause the centre of your vision to be affected. It can make it harder to see things that you are looking straight at. Activities like reading, driving and recognising people's faces can become harder.

- **Glaucoma**

Glaucoma is caused by damage to the main nerve of your eye (called the optic nerve). This can cause gaps in your field of vision. These gaps usually start around the edges of what you are looking at. People with diabetes develop glaucoma more often than other people. Most people don't notice these gaps until they become quite large. This is one of the reasons why it is important to get your vision checked regularly.



- Some medical conditions (like changes in your blood pressure, or changes in your blood sugar if you have diabetes) can affect your vision. This can make it hard to see for a few minutes.

So what can you do?

- Some changes in your vision can happen gradually and you might not always notice them. Have your eyes tested by an optometrist. You can have a full test of your vision every two years. This test is free under Medicare. Medicare will give you back 85% of the test fees if you have a test more regularly.

What else can happen to your vision?

- As you get older, your vision can become less clear. This makes things like steps or the edges of the carpet harder to see.
 - Your eyes can take longer to adjust to light and dark. This can make it hard to see at first when you come inside on a sunny day or when you first go outside.
 - Glare can become a problem. Bright light, sunshine and car headlights can make it hard to see clearly and without discomfort.
 - Judging distances and depth can become harder. This makes it easier to bump into objects or misjudge steps.
 - It becomes harder to see an object against its background. For example, it can be hard to see the edge of a step, unless it is marked with bright coloured tape.
- If you have glasses, make sure that you wear them when you're meant to.
 - Bifocal and multifocal glasses make it hard to see when you walk or climb stairs. Talk to your optometrist about whether other options are available.
 - Keep your glasses handy. Wear them on a cord around your neck or keep them close by so that you can then find them easily. Make sure you clean your glasses regularly.
 - Give your eyes time to adjust when you go between light and dark areas. Stay still and hold onto a firm support until your eyes adjust.
 - Wear a hat and sunglasses to reduce glare and make it easier to see during the day.
 - Take extra care when you walk outside at night or at dusk.

S.6.4 Hip protector pads: Information to help you choose hip protector pads

Wearing regimen (all types)

Hip protector pads should be worn at all times, except during hygiene cares. As falls can happen during the evening and night, it is important that hip protector pads are worn both day and night.

Cleaning and maintenance

People should be given their own hip protector pads.

The covers for Type A hip protector pads can be cleaned in a washing machine. The foam inserts can be hand washed with detergent. Stretch pants used to hold hip protector pads and incontinence pads in place are disposable and should be discarded after use.

Type B and Type C hip protector pads are machine washable on low heat, according to the manufacturer's guidelines.

Note: Laundering procedures for each style of hip protector pads need to be established according to the individual facility's infection control requirements.

Certain private health insurance funds provide limited funding for hip protector pads. Check with your private health insurer for details.

The Department of Veterans Affairs may provide hip protector pads for eligible veterans.

For general information on hip protector pads and suppliers contact:

The Independent Living Centre
Cnr Goring & Cavendish Rd, Coorparoo Q 4151
Ph: 3397 1224

Suppliers:

Type A
Independent and In-Home Care
127 Nerang Street
Southport QLD 4215
Ph: 07 5591 3535

Type B
Abena-Sanicare
Unit 3/43 Links Avenue
Eagle Farm QLD 4009
Ph: 1800 655 152

Type C
Independent Living and Mobility
10/58 Deshon St
Woolloongabba QLD 4102
Ph: 1300 767 888

NB. The inclusion of information on hip protector pads and suppliers in this brochure does not indicate endorsement by Queensland Health. Available scientific literature on the effectiveness of hip protector pads in preventing hip injuries is not conclusive across all settings.

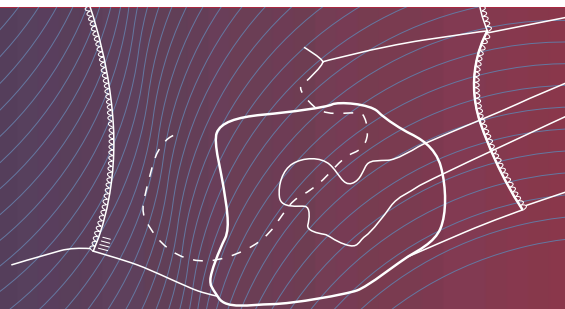
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Falls Prevention
in Older People

Hip protector pads

Information to help you choose
hip protector pads



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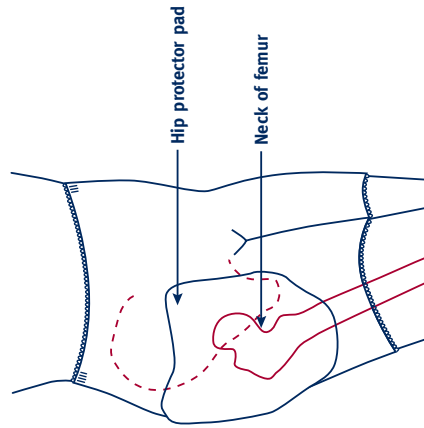
Type A - Foam pads (without briefs)

Foam-style hip protector pads are soft foam pads inside removable cotton covers. They can be held in place with disposable stretch pants or firm underwear.

Incontinence pads can also be worn with these hip protector pads. Napkin or pad style incontinence pads are preferred. One-piece incontinence pads (nappy style with tab fasteners) are not ideal, as the fasteners interfere with placement of the hip protector pads.

Positioning: Draw a line from the top of the pubic hair line horizontally across to each hip. The middle of the hip protector pad should be placed where this line meets the thighbone (femur).

If you're using incontinence pads, position the incontinence pad first and then fit the hip protector pads.



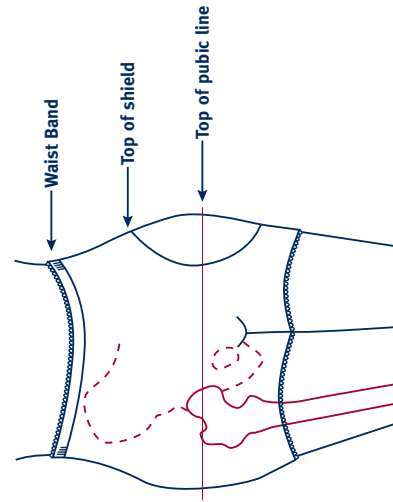
Type B - Hip protector briefs with padded shells

These underpants contain a padded plastic shell, which slips into a pocket sewn over each hip. The plastic shell can be removed from the briefs in some styles, but not in others.

If incontinence pads are required, stretch pants may be needed under the briefs to ensure that the pad is held firmly in place. Several pairs of briefs will be required per person.

Sizing: These garments come in a range of sizes for both men and women. Refer to the manufacturer's instructions for correct sizing.

Positioning: Draw a line from the top of the pubic hair line horizontally across to each hip. The middle of the padded pocket should be positioned where this line meets the thighbone (femur).

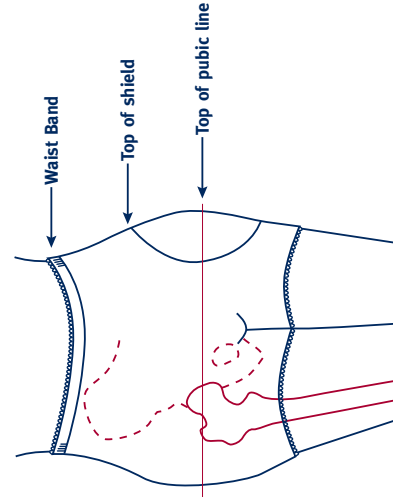


Type C - Hip protector briefs with foam pads

This style uses foam in a waterproof pouch, sewn into the underwear over each hip. There is a range of styles available for men and women.

Sizing: These garments come in a range of sizes. Refer to the manufacturer's instructions for correct sizing. Several pairs of briefs will be required per person.

Positioning: Draw a line from the top of the pubic hair line horizontally across to each hip. The middle of the padded pocket should be positioned where this line meets the thighbone (femur).



S.6.5 Bladder and bowel problems: How to prevent falls related to bladder and bowel problems

How can incontinence increase your chance of falling?

Incontinence (especially urge and functional incontinence) can increase your chance of having a fall. This is because you may need to rush to the toilet. You might not be able to walk safely when you are hurrying. You might not notice obstacles because you are only thinking about getting to the toilet in time. This can cause you to trip over an obstacle in your path. You can also slip over in a puddle of urine if you don't make it to the toilet in time.

What can you do?

You might have one or more of these conditions. They can often be improved or cured with help from your doctor or a properly trained health professional. They will try to find the cause of your bladder or bowel problem and can tell you how the problem can be treated.

It is important to talk to your doctor or health care professional about these problems, even if you feel embarrassed. They will be able to help you with these problems. They might also refer you to a specialist for expert advice.

You can also call the National Continence Helpline on 1800 33 00 66. This is a freecall number.

References:
Continence Foundation of Australia. (n.d.) Incontinence brochure series.

Other brochures in this series include:

- Medicines: Information to help prevent falls (QH Falls-03)
- Exercise and balance: Falls prevention. How to help yourself (QH Falls-04)
- Vision: Information about your vision and how to prevent falls (QH Falls-05)
- Falls prevention: Information about how you can reduce your chance of having a fall while you are in our facility (QH Falls-06)
- Don't go head over heels: Information to help you choose footwear for comfort, foot care and falls prevention (QH Falls-07)
- Hip Protector Pads: Information to help you choose hip protector pads (QH Falls-08)
- Falls prevention for community-dwelling older people (QH Falls-10)

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QH Falls - 09



Bladder and bowel problems

How to prevent falls related to bladder and bowel problems

Falls Prevention
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Did you know?

- a third of people aged over 65 years and one half of people aged over 80 years have a fall at least once a year
- some of these people have multiple falls
- one third of these falls require medical attention.

As you get older, you can develop problems with your bowel and bladder. Incontinence is a word used to describe certain problems with your bladder or bowel. Problems with incontinence can increase your chance of having a fall.

What are the types of incontinence?

There are a number of types of incontinence. Each type can have a range of causes and treatments available.

Types of bladder incontinence:

- Urge incontinence
Urge incontinence happens when you get a strong, sudden need to urinate and you need to get to the toilet in a hurry. This can be made worse by conditions such as a stroke, tumour, an enlarged prostate gland, multiple sclerosis or Parkinson's disease. It can also be caused by poor bladder habits that have developed over time.

• Overflow incontinence

Overflow incontinence happens when your bladder doesn't empty well when you try to go to the toilet. It can then empty all of a sudden, when you don't want it to. This can be caused by prostate problems in men or by weak bladder muscles or long-term constipation.

• Stress incontinence

Stress incontinence can happen when you laugh, cough, sneeze, strain or lift. When any of these things happen, you can get a leaking of urine. This type of incontinence happens more often in women. It can also happen in men, particularly men who have had prostate surgery or treatment.

• Functional incontinence

Functional incontinence happens when you can't get to the toilet in time because of:

- physical problems (eg. difficulty walking to the toilet or difficulty using your hands to undo your clothes)
- problems with your thinking (eg. trouble remembering where the toilet is or when the message to go to the toilet comes too late) or
- problems with your surroundings (eg. badly designed toilets).

• Reflex incontinence

Reflex incontinence is caused by damage to certain nerves that control your bladder. This type of incontinence is usually found in people with spinal injuries.

Other bladder and bowel conditions

• Nocturia

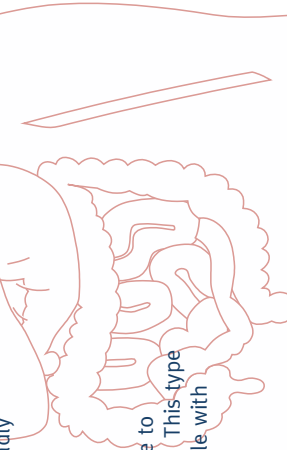
Nocturia happens when you need to go to the toilet at least twice during the night. It can cause you to feel sleepy during the day because you are not getting a good night's sleep. You could have a fall during the night when you try to get to the toilet. You might wet the bed if you don't wake up in time (especially if you are taking tablets to help you sleep).

• Constipation

Constipation is a term for less frequent bowel actions. It can add to loss of bladder control by further weakening the pelvic floor muscles. If you are constipated, your bowel may put pressure on your bladder, making you feel the need to go to the toilet.

• Faecal incontinence

Faecal incontinence relates to problems controlling your bowels. You might pass faeces at the wrong time or in the wrong place. Other problems might include staining on your underpants or having lots of wind (flatulence).



S.6.6 Falls prevention: For community dwelling older people

Falls prevention

For community-dwelling older people

Are you over 65 years of age?
Have you fallen in the last year?
Are you afraid of falling?



Other brochures in this series include:

- Medicines: Information to help prevent falls (QH Falls-03)
- Exercise and balance: Falls prevention. How to help yourself (QH Falls-04)
- Vision: Information about your vision and how to prevent falls (QH Falls-05)
- Falls prevention: Information about how you can reduce your chance of having a fall in our facility (QH Falls-06)
- Don't go head over heels: Information to help you choose footwear for comfort, foot care and falls prevention (QH Falls-07)
- Hip protector pads: Information to help you choose hip protector pads (QH Falls-08)
- Bladder and bowel problems: How to prevent falls related to bladder and bowel problems (QH Falls-09)

For more information on preventing falls, ask for a copy of the booklet:

- Falls prevention: Your safety checklist and guide (QH Falls-11)

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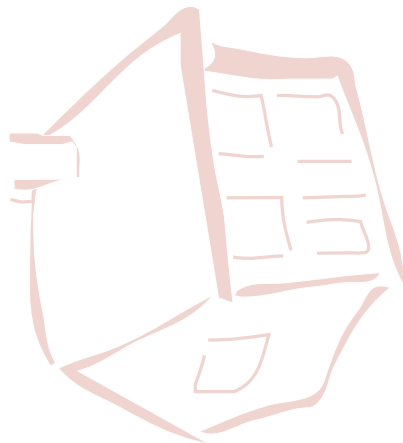
Falls Prevention
in Older People



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What is the most important thing to do now?

Research suggests that controlling medicines and doing exercise that improves balance are the two best ways to reduce your chance of falling. **Have your medicines checked** if you are unsteady on your feet and ask your doctor or physiotherapist how you can **do exercise to improve your balance.**



If you answered yes to any of those questions, we can help.

Who falls?

- One third of people over 65 years old fall each year.
- One tenth of these people have multiple falls.
- One third of falls require medical attention.

What can happen if you fall?

Injuries sustained from a fall can be serious. You could break a bone and you might lose your confidence in walking.

Why do people fall?

- Loss of balance can be a side effect of some medicines and medical conditions
- Reduced strength and balance due to reduced physical activity as you get older
- Hurrying to the toilet can cause a fall
- Obstacles on the floor or in hallways may cause a fall
- Painful feet or poor footwear can cause a loss of balance.

What can you do to reduce your chance of falling?

- See your doctor if you:
- Have fallen the last year
 - Get dizzy or feel unsteady

- Are afraid of falling
- Take four or more medicines.

You can also:

- Improve your balance, leg strength and walking
- Have your eyes checked every year
- Wear snug fitting shoes with a flat, thin sole that bends mainly at the toe
- Seek professional advice on managing incontinence, if needed.

If you have fallen in the last year and you are afraid of falling again, your doctor can review your medicines and assess your chance of falling. Your doctor may refer you to:

- A geriatrician who is specialist doctor for older people
- A physiotherapist for leg strengthening, balance and walking exercises
- An occupational therapist for home modifications and advice to reduce your chance of falling at home
- A podiatrist for feet and footwear management
- A dietician for management of your diet
- A specialist nurse or physiotherapist, if management of bowel or bladder problems (incontinence) is required
- A specialist falls prevention team, if there is one in your area.

What advice can you give to others to reduce their chance of falling?

You could tell them to:

- See their doctor if they have fallen in the past year or are afraid of falling
- See their doctor or pharmacist if they take four or more medicines
- Get regular exercise that helps with balance, strength and heart and lung fitness
- Ensure their home and footwear are suitable
- Maintain a good diet and don't smoke.

What else can you do?

- Remove mats, cords and other things you could trip over
- Always try to walk in well lit areas
- Try not to wear bi-focal or multifocal glasses when you are walking
- Stay balanced when you walk by:
 - Using a walking aid if you need it
 - Restraining pets so you don't trip over them
- Have hand rails and grab bars installed in your home
- Get someone to help with jobs that require climbing or reaching
- If you live alone, consider buying a personal alarm or 'walk-about' telephone
- Limit your alcohol intake so that you can walk safely.

S.7 Falls prevention: Your safety checklist and guide

The booklet entitled '*Falls Prevention: Your safety checklist and guide*' is intended for distribution by health care workers who have identified a person at risk of falling.

It contains questions related to known risk factors for falling and then suggests actions the person may take to reduce their risk of falling.

It is an amalgamation of work done by a number of organisations. Much of the content has been in use since 1995.

It can be ordered from:

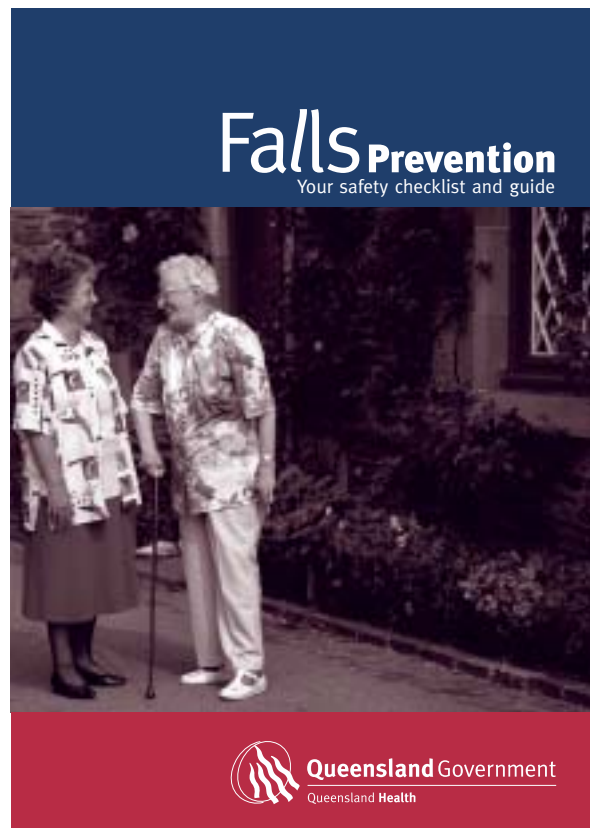
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- *National Physical Activity Guidelines* [Online], Available: <http://www.health.qld.gov.au/npag/> [Accessed May 2003].
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Notes

