MOH NURSING CLINICAL PRACTICE GUIDELINES 1/2005

Prevention of Falls in Hospitals and Long Term Care Institutions

Ministry of Health

NMRC National Medical Research Council

SingHealth

National Healthcare Group

Singapore Private Hospitals Nursing Administrators Group

Nanyang Polytechnic

Institute of Technical Education

December 2005

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STATEMENT OF INTENT

This set of guidelines serves as a guide for caregivers of adults at risk of falls in hospitals and long term care institutions

Recommendations are based on the best available evidence at the time of guideline development. New research studies are ongoing thus the contents are subject to updates as scientific knowledge unfolds. Due to the unique variations in each individual circumstance, adopting this set of guidelines does not guarantee effective client outcomes in every instance.

Every practitioner must exercise clinical judgement in the nursing management of patients at risk of falls. Practitioners must assess the appropriateness of the recommendations in the light of individual client's condition, overall treatment goal, resource availability, institutional policies and viable treatment options before adopting any of them for their own practice.

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FORWARD

One patient fall is one too many. Falls that result in injury may lead to an extended length of stay and increased hospitalisation costs.

Preventing falls among patients in healthcare institutions requires a multifaceted approach. The recognition, evaluation, and prevention of patient falls are significant challenges for all who seek to provide a safe environment for the patient.

I am pleased to present the nursing clinical practice guidelines on the "Prevention of Falls in Hospitals and Long Term Care Institutions". The main aims of these guidelines are to enhance appropriateness, effectiveness and efficiency of care, and to reduce unacceptable variation in clinical practice. I hope that these guidelines will be incorporated into the routine care of patients in our healthcare institutions.

PROFESSOR K. SATKU
DIRECTOR OF MEDICAL SERVICES

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1 INTRODUCTION

1.1 Background

Preventing inpatient falls is a challenge faced by many healthcare institutions. Falls are among the most common yet most often preventable, adverse events involving the patient or resident. Falls often result in fractures, soft tissue or head injuries, post-fall syndrome of anxiety, depression and reduced mobility due to fear of further falls. Inpatient falls have also been associated with longer lengths of hospital stay and higher rates of discharge to long term care institutions. (Oliver *et al*, 2000) The morbidity, mortality and financial burdens attributed to patient falls in hospitals and other healthcare settings are among the most serious risk management issues facing the healthcare service. Having a fall prevention programme enables the institution to incorporate fall monitoring into their system and at the same time, proactively create an environment of patient safety and injury prevention amongst their staff.

1.2 Definition of a Fall

A fall is a sudden, unintentional change in position causing an individual to land at a lower level (either on an object or on the floor) other than as a consequence of sudden onset of paralysis, epileptic seizure or overwhelming external force.

(Feder *et al*, 2000; Tinetti *et a*l, 1997).

1.3 Scope of the Guidelines

This set of clinical practice guidelines is a tool to assist health care providers involved with clinical care in managing falls in long term care and acute care institutions. These guidelines provide a simple and readable reference for developing a fall prevention programme in the institution. The guidelines cover most aspects of fall prevention, from assessment of patients to intervention, education and audit.

This set of guidelines is applicable to both long term care and hospital settings. Differences in approaches will be specified if indicated by the available evidence. For both settings, we have chosen the multifactorial

approach to fall prevention. Although the research and evidence done in the acute setting is limited, there is enough evidence from research done in the community and nursing home settings to suggest the best approach.

Three interventions which were not discussed within our recommendation but merit mention are the bed alarm system, the use of restraints and hip protectors.

The bed alarm device aids in alerting the healthcare workers on a high-risk faller's unsafe activity, e.g. getting out of bed without assistance. Two small trials to test its efficacy in hospital patients showed some differences between those on bed alarm and the control. However, the results were not statistically significant for the workgroup to make recommendations regarding its use in the guideline. More trials will be needed to test the efficacy of such alarms. (Tideiksaar *et al*, 1993)

In current practice, restraints have been used as a fall prevention tool. There has been evidence that implementation of programmes to reduce use of physical restraints have not increased the rates of falls in healthcare institutions (Capezuti, 1998). While it has been shown that some falls do occur despite restraint use, the evidence available is not straightforward and not conclusive (Evans *et al*, 1998). Part of the problem arises from the definitions of restraints and the methodology of the studies which consist of mainly case control studies. The definitions of restraints run the gamut from non-contact restraints e.g. bed rails, to close body contact restraints e.g. vest, pelvic restraints. Some have also included chemical restraints. Hence, the workgroup is unable to make specific recommendations on its use as a fall prevention measure.

In long term care institutions, hip protectors may be considered in patients at high risk for falls, as wearing hip protectors has been proven to marginally reduce the risk of sustaining hip fractures after a fall. However, it is noted that acceptability and compliance with wearing the hip protectors were reported as problems in all of the studies. Commonly cited reasons for non-compliance were discomfort and poor fitting. (Parker et al, 2005) Further trials on the use of hip protectors within local settings will be required in order to determine its effectiveness in preventing hip fractures due to falls.

2 DEVELOPMENT OF GUIDELINES

2.1 Training and Guidance

Members of the workgroup attended a two-day interactive training workshop to learn about and discuss the theory and practical issues of developing evidence-based guidelines under the guidance of Dr Edwin Chan & Dr Miny Samuel of the Clinical Trials & Epidemiology Research Unit. The practical training revolved around topic selection and the development of "mock" evidence-based guidelines which developed into these present guidelines.

2.2 Strategy and Literature Review

We reviewed two pre-existing guidelines (JBI, 1998; RNAO, 2005), a Joanna Briggs Institute review (Evans *et al*, 1998) and a Cochrane review (Gillespie *et al*, 2001). The members felt that an updated literature search on the specific topics addressed on the electronic databases (MEDLINE, EMBASE, The Cochrane Library, SPRINGNET and CINAHL) would suffice. Literature from 1994 to March 2005 was reviewed.

2.3 Evaluation of Evidence and Grading of Recommendations

We adopted the revised Scottish Intercollegiate Guidelines Network (SIGN, 2001) which gives clear guidance on evaluating the design of individual studies, grading each study's level of evidence (see 2.3.1 and 2.3.2); and assigning a grade to the recommendation after taking into account external validity, result consistency, local constraints and expert opinion (see 2.3.3). The extensive reliance on the Joanna Briggs Institute (JBI, 1998) and Registered Nurses Association of Ontario (RNAO, 2005) guidelines is acknowledged and they are treated as very special cases of published expert opinion. For areas where available evidence was inconsistent or inconclusive, recommendations were made based on the clinical experience and judgement of the workgroup or expert committee reports.

The guideline statement with a rationale was modelled after the simple declarative style of the Dialysis Outcomes Quality Initiative guidelines (NKF-K/DOQI 2001) to provide a clear link between the recommendation and its justification. The word "should" is not to be taken to mean "must".

2.3.1 Individual study validity rating

All primary studies and reviews addressing a particular topic were appraised using a SIGN checklist appropriate to the study's design. In addition, they are individually rated for internal validity using the system below:

Rating	Description
++	**All or most** of the criteria have been fulfilled. Where they have not been fulfilled the conclusions of the study or review are thought very unlikely to alter.
+	**Some** of the criteria have been fulfilled. Those criteria which have not been fulfilled or not adequately described are thought unlikely to alter the conclusions.
–	**Few or no** criteria fulfilled. The conclusions of the study are thought likely or very likely to alter.

2.3.2 Levels of Evidence

The study design is designated by a numerical prefix

- "1" for systematic reviews or meta-analyses or randomised controlled trials (RCTs);
- "2" for cohort and case-control studies;
- "3" for case reports/series;
- "4" for expert opinion/ logical arguments/ "common" sense.

Each study is assigned a level of evidence by combining the design designation and its validity rating using the system below:

Level	Type of Evidence
1^{++}	High quality meta-analyses, systematic reviews of RCTs, or RCTs with a very low risk of bias.
1^{+}	Well-conducted meta-analyses, systematic reviews, or RCTs with a low risk of bias.
1^{-}	Meta-analyses, systematic reviews, or RCTs with a high risk of bias.
2^{++}	High quality systematic reviews of case-control or cohort studies; High quality case-control or cohort studies with a very low risk of confounding or bias and a high probability that the relationship is causal.
2^{+}	Well-conducted case-control or cohort studies with a low risk of confounding or bias and a moderate probability that the relationship is causal.
2^{-}	Case-control or cohort studies with a high risk of confounding or bias and a significant risk that the relationship is not causal.
3	Non-analytic studies e.g. case reports, case series.
4	Expert opinion.

2.3.3 Grades of Recommendation

The detailed results of each study and mitigating local circumstances were considered in the formulation of each recommendation which was then graded using the system below:

Grade	Recommendation
A	At least one meta-analysis, systematic review, or RCT rated as 1^{++}, and directly applicable to the target population; or A body of evidence, consisting principally of studies rated as 1^{+}, directly applicable to the target population, and demonstrating overall consistency of results.
B	A body of evidence, including studies rated as 2^{++}, directly applicable to the target population, and demonstrating overall consistency of results; or Extrapolated evidence from studies rated as 1^{++} or 1^{+}.
C	A body of evidence including studies rated as 2^{+}, directly applicable to the target population and demonstrating overall consistency of results; or Extrapolated evidence from studies rated as 2^{++}.
D	Evidence level 3 or 4; or Extrapolated evidence from studies rated as 2^{+}.

2.3.4 Interpretation of the D/4 grading

The grading system emphasises the quality of the experimental support underpinning each recommendation. The grading D/4 was assigned in cases where

- it would be unreasonable to conduct a RCT because the correct practice is logically obvious;

- recommendations were derived from existing high quality evidence-based guidelines. We alert the user to this special status by appending the initials of their source e.g. [D/4 – JBI, 1998].

2.4 Guidelines Review and Revision

A set of the draft guidelines was circulated to selected healthcare institutions, nursing homes and clinical experts for peer review and evaluation of the validity, reliability and practicality of the recommendations.

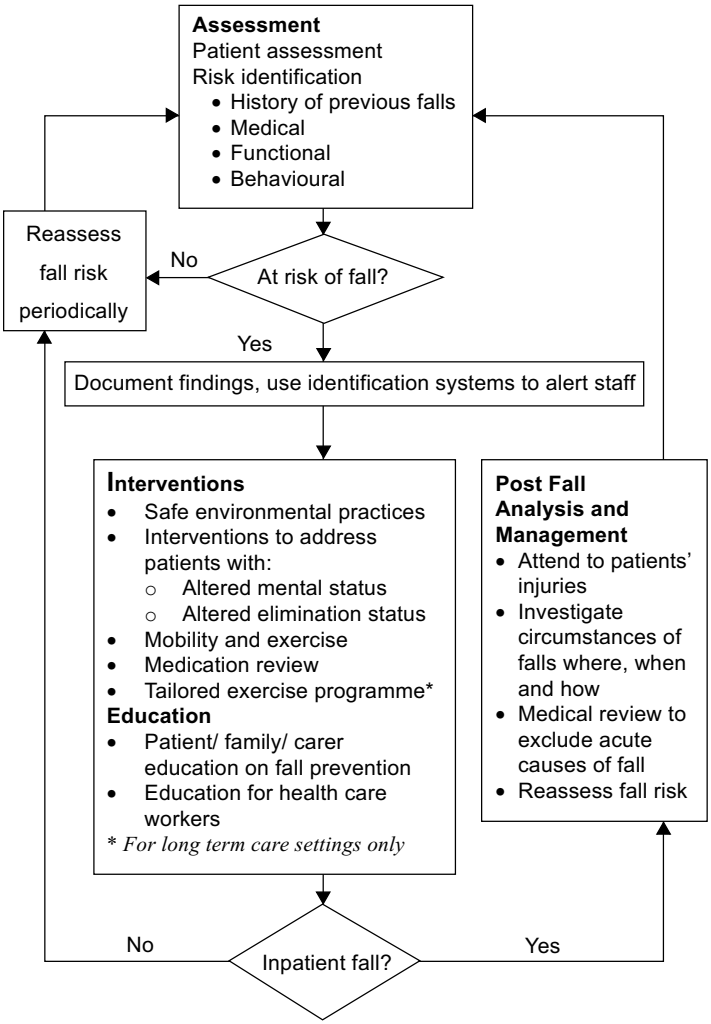
This set of guidelines will be reviewed and revised periodically to incorporate the latest relevant evidence and expert clinical opinion.

2.5 Limitations

This set of guidelines offers recommendations based on current scientific evidence and professional judgement and it is not intended as legal standard of care.

Users of this set of guidelines should determine what the safe and appropriate patient care practices are, based on assessment of the circumstances of the particular patient, their own clinical experiences and the knowledge of the most recent research findings.

3 ALGORITHM FOR PREVENTION OF FALLS



4 ASSESSMENT

4.1 Assessment of Fall Risk

All patients admitted to hospitals or long term care institutions should undergo falls risk assessment at the point of admission, within 24 hours, to identify those at higher risk of falls.

[*acute care* - D/2^{+}]
[*long term care* – B/1^{++}]

Risk assessment should be multidimensional and include medical, functional and behavioural assessments of patients. No one risk screening tool alone will identify all persons at risk or risk factors.

[D/4]

The falls risk assessment tool should be practical, easy to administer, require minimal or no equipment, linked to an action plan and useful in the local clinical setting.

[D/4]

Rationale:

a) Assessment, which identifies patients with risk factors for falls, has been shown to be beneficial in the prevention of patient falls. (Skelton *et al*, 1995; AGS *et al*, 2001)

b) Assessment will help to determine when and what intervention should be implemented and serves to better tailor individual multi-factorial interventions as different risk factors increase the risk of falls differently. (Jenson *et al*, 2002)

c) There are a few falls risk assessment tools mentioned in the literature which are used to identify patients at high risk of falls. However, they have not been validated in multiple settings and suffer from low specificity as risk factors change with the unit or ward, which in turn also differs from the initial validated cohort, thus limiting their usefulness. (Oliver *et al*, 2004, Myers 2003)

4.2 Risk Factors Contributing to Falls

4.2.1 A falls risk assessment should include the following elements:

Medical

- History of falls
- Medications associated with increased fall risk
- Secondary or specific diagnoses known to affect falls risk (e.g. stroke, Parkinson's disease)
- Postural hypotension
- Seizures, dizziness, vertigo

Functional

- Altered mental status
  (e.g. confusion and disorientation)
- Altered elimination status
  (e.g. urinary/bowel incontinence or frequency)
- Impaired/ deterioration of activities of daily living (ADL)
- Impaired mobility or gait
- Poor visual acuity

Behavioural

- Poor safety awareness
- Lack of insight into own health condition
- Risk taking behaviour

[B/2^{++}]

4.2.2 Previous history of falls

All residents in long term care settings should be assessed on a previous history of falls.

[A/1^{++}]

Rationale:

- The cause of a fall is often an interaction between patient's risk, the environment and patient's risk behaviour. Although risk factors may change with the casemix, there are some common risk factors identified in most studies reviewed as mentioned above. (Perell *et al*, 2001; Evans *et al*, 1998; Oliver *et al,* 2004)

- While no comparisons have been made between the different possible assessment tools, it has been consistently shown that a previous history of falls is an important factor. (Evans *et al*, 1998; Ray *et al*, 1997)

- Medications implicated in contributing to falls can be largely classified into two main categories – those that can cause drowsiness such as psychotropic medications (e.g sedative/ hypnotic, neuroleptic, antidepressants), anticonvulsants, antihistamines and narcotic analgesics and those that can cause hypotension, such as anti-hypertensive medications and diuretics (Dorset HA Hospital Wards Working Group, 2002; Leipzig *et al*, 1999).

- Five factors, namely previous falls, poor mobility status, agitation, requiring frequent toileting or visual impairment were found to predict falls in a hospital setting. Patients presenting with more than two of these risk factors were found to have higher risk of falls. (RNAO, 2005)

4.3 Reassessment

In acute care settings, reassessment of fall risk should be carried out at least twice a week and when there is a change in the patient's status or environment.

[D/4]

In long term care settings, reassessment of fall risk should be done at regular intervals, at least every 3 months and when there is a change in the patient's status or environment.

[D/4]

Rationale:

- Changes in medical status and function may alter the individual's fall risk. A patient's risk of fall changes when his/ her condition deteriorates e.g. following a fall or if the environment changes. It is recommended that residents in nursing homes be assessed at least every 3 months as they usually stay for longer periods (Dorset HA Residential Care Working Group, 2002). Reassessment for patients in acute care settings should be done more frequently as changes in their health status are likely to occur within a shorter period of time.

5 INTERVENTION

5.1 Multifactorial Fall Prevention Approach

A fall prevention programme should comprise multifactorial interventions incorporating both general and individual-specific/ tailored strategies.

[*acute care* - D/2^{+}]
[*long term care* – A/1^{++}]

The fall prevention programme should involve all members of the multi-disciplinary healthcare team.

[D/4 – RNAO, 2005]

Rationale:

- Falls have multifactorial aetiology. In nursing home settings, fall prevention programmes with multifaceted interventions showed significant outcomes. (Jenson *et al*, 2002; Oliver *et al*, 2000; Becker et al, 2003)

- A multifacactorial interventions programme should include some of the following strategies:

  - **General Interventions**
    - Environmental safety
    - Equipment checks
  - **Individual-specific interventions**
    - Increased observation for "at risk" patients
    - Provide assistance for patients at fall risk
    - Interventions for patients with altered mental status and elimination
    - Medication review
    - Tailored exercise programme *
    - Post falls analysis
  - **Education**
    - Patient/family/carer education on falls prevention in the wards
    - Education for health care workers

* *for long term care settings only*

Note:

The exact components of the fall prevention programmes were varied between each of the research studies. General interventions, such as environmental safety practices as described in section 5.2 of these guidelines, are to be applied to all patients regardless of fall risk. Individual-specific interventions, such as increased observation for "at risk" patients and other interventions, such as those described from sections 5.3 to 6 in the guidelines, are to be implemented based on the fall risk assessment of the individual patient.

5.2 Environmental Safety

Institutions should provide a safe physical environment as part of a general strategy to reduce the risk of falls:

Flooring and lighting

- Clear obstacles and clutter at bedside and along passageways
- Provide night lights at bedsides, hallways and toilets
- Provide grab bars in toilets and on slopes
- Use non-slip flooring and keep floor dry
- Highlight the edge of steps and slopes

Furniture and equipment

- Lock wheels of furniture
- Place frequently used items and mobility devices within reach of the patient
- Keep regular maintenance of equipment and ensure that they are correctly used
- Keep bed at lowest practical height when the patient is in bed
- Use half-length bed rails to assist the patient in getting out of bed.

Chair and wheelchair

- Use safety belts on wheelchairs when transporting patients.
- Use sturdy chairs which have arm rests and are of appropriate height for rising and sitting, e.g. geriatric chairs
- Use non-slip mats in chairs

[D/4 – JBI, 1998]

Rationale:

- Environmental risk factors have been identified as risk factors for falls. Increase in hazards in the environment increases the risk of falls. (Evans *et al*, 1998; Kerse *et al*, 2004; Kiernat, 1991)

- Studies have shown that environmental modifications of chair and bed height, room clutter, grab bars and lighting as components of multifaceted fall prevention programmes to be effective in reducing total number of falls. (Jenson *et al*, 2002; Becker *et al*, 2003, Evans *et al*, 1998)

- Older persons use touch to get a "position fix" as they move about. Wide open spaces- spaces that provide no opportunity for holding onto or touching something along the way are not seen as user-friendly. It is helpful if there are rails or objects to hold onto between the bed and the bathroom. (Kiernat, 1991)

- Good ergonomic and safety features can prevent patients from falling off wheelchairs/chairs.

5.3 Identification Systems

Staff should be informed of patients at risk of falls through an identification system which may include:

- coloured stickers behind beds
- coloured stickers on clinical/nursing notes
- distinctively coloured identification bracelets

[D/4]

Rationale:

- The use of identification systems for patients at high risk for falls, as part of a fall prevention programme, is an inexpensive method of alerting staff, caregivers and patients to take extra care as these patients move about.

5.4 Interventions for Patients with Altered Mental Status

Patients with altered mental status should be managed with the following interventions:

- Orientate patients to the hospital environment
- Re-orientate patients if necessary
- Monitor patients closely (e.g. moving patients near to nurses station, involving family members to sit with patients)
- Nurse patients on low bed
- Reinforce activity limits and other safety needs to patients and their family

[D/4 - JBI, 1998]

Rationale:

- Involving relatives in the care, orientating all patients to the hospital environment, and nursing these patients in a low bed had been found to be useful in reducing falls. (Evans *et al*, 1998)

- Activity limits refer to the restrictions put in place in terms of the type of activities, location of activities and the duration as well as the frequency of activities, in order to ensure patient safety.

- Multi-component targeted interventions have been shown to reduce duration and severity of delirium in hospitalised older people. (Inouye, 1999; Milisen *et al*, 2001)

5.5 Interventions for Patients with Altered Elimination Status

Interventions to minimise risk for falling associated with altered urinary or bowel function include:

- enquiring about their elimination needs routinely, and offer appropriate toileting aids (e.g. urinal or commode).
- placing patients with urgency nearer to the toilets.
- instructing male patients with dizziness to sit while voiding using the urinal.
- checking on patients receiving laxatives and diuretics for their elimination needs.

[D/4 - JBI, 1998]

Rationale:

- A high percentage of falls occurred when patients were attending to their elimination needs, particularly patients with urinary or faecal incontinence or urgency. The risk of falls may be reduced when patients' elimination needs are met in a timely manner. (Evans et al, 1998)

Note:
Altered elimination status refers to urinary or bowel incontinence or frequency. Urgency, also known as urge incontinence, is defined as the involuntary loss of urine associated with a strong desire to urinate (MOH, 2003).

5.6 Mobility and Exercise

5.6.1 Safe mobilisation and exercise

Patients at risk of falls should be assisted with transfers and mobilisation.

Patients should use well-fitted, non-slip footwear when ambulating.

Patients with impaired mobility should be referred to physiotherapy for gait, balance and strength training as well as prescription of walking aids if necessary.

Complete bed rest should not be imposed on patients unless ambulation is contraindicated.

[D/4 - JBI, 1998]

Rationale:

- Advice on the appropriate use of walking aids and transfer techniques and gait re-education as part of a multifactorial programme has been shown to reduce the number of recurrent falls in nursing homes. (Ray *et al*, 1997)

- Complete bed rest should not be imposed as prolonged immobility decreases muscle power and bone density. These factors can reduce the patients' mobility and predispose them to falls. (Creditor, 1993)

5.6.2 Exercise programmes

In long term care institutions, residents should undergo an exercise programme of the following characteristics:

- It should comprise individualised progressive intensive strength and balance training.
- It should be ongoing.
- It should be supervised by qualified personnel.

[B/2^{++}]

Rationale:

- Individually tailored programmes comprising muscle strengthening and balance exercises have been shown to reduce the rate of falls in community dwelling ambulant elderly. (Gillespie *et al*, 2001; RNAO, 2005)

- Exercise has been shown to improve strength in the elderly in nursing homes. It was also shown that strength gained was lost four months after the cessation of exercise programmes. (Gillespie *et al*, 2001, Meuleman *et al*, 2000; Mulrow *et al* 1994, Fiatarone *et al*, 1994)

5.7 Medication Review

Formal periodic medication review by physicians for elderly patients should be considered as part of routine inpatient care.

[D/4]

Patients residing in long-term care / nursing home facilities should have their medications regularly reviewed by a physician, particularly if they are

- prescribed four or more medications
- on psychotropic drugs.

[B/2^{++}]

Rationale:

- Medication is a risk factor for falls. Elderly patients on polypharmacy are especially at risk. (Evans *et al*, 1998)

- Psychotropic medications have been linked to increased incidence of falls. Withdrawal of these medications had been shown to reduce the risk of falling by as much as 30% when used as part of a multifactorial programme. While it is recognised that these drugs are essential for a specific group of patients, appropriate prescribing is necessary to keep the use to a minimum among older patients. (Leipzig *et al*, 1999; Campbell *et al*, 1998)

- Studies have shown that gradual withdrawal to minimum dosage or complete discontinuation of psychotropic medications in nursing homes can be achieved without adversely affecting the overall behaviour and functioning of the residents. (Avorn *et al*, 1992)

5.8 Education

Education programmes should be targeted at health-care providers, patients and care-givers.

5.8.1 Staff Education

Contents of staff education programmes should include:

- importance of fall prevention
- risk factors for falls and assessment
- multidisciplinary strategies to reduce falls
- safe transfer and safe mobility techniques (including hands-on practice)

[D/4 – RNAO, 2005]

5.8.2 Patient and Family Education

Education programmes for patients and family/caregivers should include:

- risk factors for falls
- safe mobilisation and limitations to activities
- safety precautions in the ward and ward orientation
- importance of staying active and being mobile unless contraindicated

[D/4 – JBI, 1998; RNAO, 2005]

Rationale:

- A local study showed that education alone reduced the rate of falls but was not significant. However, other studies demonstrated that when used in conjunction with a nursing assessment protocol, education could significantly reduce the rate of falls. (Evans *et al,* 1998; Lieu *et al*, 1997)

6 POST-FALL ANALYSIS AND MANAGEMENT

All patients who experience an inpatient fall should undergo a post-fall assessment.

[*acute care* - D/4]
[*long term care* – B/1^{+}]

The post-fall assessment should be accompanied by:

- attention to patients' injuries.
- medical review to exclude acute causes of fall.
- investigation into the circumstances of fall to determine any underlying root cause.

[D/4]

Rationale:

- A fall may be a marker for serious underlying illness. Patients who have had a fall should be re-assessed as a fall is often a presentation of a change in health status. It has been shown in long term care settings that assessment within seven days of a fall was effective at preventing subsequent hospitalisation and reducing length of hospital stays. (Rubenstein *et al*, 1990; RNAO, 2005)

- Determining the underlying root cause of falls will assist healthcare providers in evaluating and subsequently, improving their fall prevention programmes. (Smith, 2005)

7 QUALITY ASSURANCE

Hospital and institution administrators should incorporate these guidelines in their in-house quality assurance programmes. Nurses should critically review the implications of these guidelines on their routine care, patient teaching and education needs. Audits can be performed on randomly selected individual episodes of care and retrospective review of reported falls.

7.1 Indicators

In fall prevention, the quality indicators of nursing should include:

7.1.1 Fall rate

This can be calculated using the following formula

$$\frac{\textit{Number of patient falls}}{\textit{Number of patient bed days}} \times 1000$$

This will give the incidence rate of falls in terms of per 1000 patient bed days but not the patients who have fallen.

For health care settings with patients who experience multiple falls, it is important to complement the above statistic with the following to indicate the patients who had fallen (Morse and Morse, 1988):

$$\frac{\textit{Number of patients who fell}}{\textit{Number of patients at risk}} \times 1000 \text{ per time period}$$

7.1.2 Falls injury rates

Injury rates related to falls are calculated as

$$\frac{\textit{Number of falls that resulted in injury}}{\textit{Number of patient falls}} \times 100$$

Classifying injuries may also give us an idea of the severity of injuries sustained and improvement measures to prevent serious injuries.

7.1.3 Process indicators

In the prevention of falls, the process indicators may include:

- Frequency of fall risk assessment
- Use of fall prevention programmes
- Provision of continuing education programmes on patient fall prevention for nursing staff
- Provision of patient and family education on fall risk and prevention
- Use of post-fall analysis and evaluation of fall prevention programmes

7.1.4 Outcome Indicators

Outcome indicators are factors expected to change or improve with consistent and appropriate use of the guidelines and include:

- Decreased number of falls
- Decreased number and severity of fall-related injuries

7.2 Management Role

Administrators together with quality assurance teams should ensure that outcome indicators are met.

Most fall prevention programmes rely on incident reporting as a method to track falls. There are inherent biases with this method of tracking as filing an incident report has always been viewed as a negative reflection on the standard of care provided and implies an inquiry into care provided by the staff.

However, if personal responsibility for a fall is removed and the objective is viewed as a method to evaluate the programme, then the reporting rates may be improved. This requires a change in the mindset of staff as well as management.

8 IMPLEMENTATION OF GUIDELINES

It is expected that these guidelines should be adopted after discussion involving clinical staff and management. They may review how these guidelines may complement or be incorporated into their existing institutional protocols.

Feedback may be directed to the Ministry of Health for consideration in future reviews.

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WORKGROUP MEMBERS

Chairman:

Dr Noor Hafizah Binte Ismail
MBBS, MRCP, FAMS
Consultant Geriatrician, Tan Tock Seng Hospital (TTSH)

Secretary:

Sim Kiak Kong
RN, CCRN, Adv Dip (Admin. Mgmt), MSc(Healthcare Mgmt)

Members:

Audrey Saw
RN, BHSc(Nursing), Post-Grad Dip (Critical Care),
Adv Dip in Nursing (Critical Care)

Dr Sitoh Yih Yiow
MBBS, MRCP, FAMS
Director, Age-link Specialist Clinic for Older Persons, TTSH

Lee Ching Hoon
Dip (Occupational Therapy), BHSc (Occupational Therapy)

Lim Beng Hee
RN, Post-Basic Cert (Gerontology)

Lina Ma
RN, BHSc (Nursing), MHSc (Education), Cert DN (UK)

Ng Kok Ping
BSc (Hon) (Physiotherapy)

Soh Eng Mui
RN, RM, BHSc (Nursing)

Tan Poh Hoon
RN, Adv Dip in Nursing (Med/Surg)

Valerie Tan
BSc (Hon) Pharmacy

Secretariat:

Chen Yee Chui (till 31 Aug 05)
RN, BNursing (Hon), Cert DN, MBA

Avril Elizabeth Chew (From 1 Sep 05)
RN, BSc (Hon) Nursing Studies

External Consultants:

Dr Edwin Chan Shih-Yen
PhD, BSc, BVMS,
Head of Evidence-based Medicine
Clinical Trials & Epidemiology Research Unit

Dr Miny Samuel
PhD, MSc
Evidence-based Medicine Analyst
Clinical Trials & Epidemiology Research Unit

External Reviewers:

Chapter of Geriatricians Specialty Board, College of Physicians, Singapore

Singapore Physiotherapy Association

SELF ASSESSMENT

Each question may have more than one option as the correct answer.

Acute hospital

1. Which of the following statements are *correct*?
   a) Falls have multifactorial aetiology, hence fall prevention programmes should comprise multifaceted interventions.
   b) Regular review of medication can help to prevent inpatient falls.
   c) The risk of falling will be minimised when patient's elimination needs are met.
   d) The use of more than 2 medications is associated with increase risk of fall in the elderly

2. A multifaceted intervention programme should include:
   a) individually-tailored fall prevention strategies.
   b) education to patient/carer and health care workers.
   c) environmental safety.
   d) all the above.

3. Risk factors for falls in the acute hospital include the following *except*
   a) giddiness, vertigo
   b) previous fall history
   c) antibiotic usage
   d) impaired mobility from stroke disease

4. Which of the following statements is *true*?
   a) The cause of a fall is often an interaction between a patient's risk, the environment and the patient's risk behaviour.
   b) Increase in hazardous environments increases the risk of falls.
   c) The use of an identification system helps to highlight to staff those patients at risk for falls
   d) All of the above

5. Patients with impaired mobility should be:
   a) confined to bed.
   b) encouraged to mobilise with assistance.
   c) assisted with transfers.
   d) referred for exercise programmes or prescription of walking aids as appropriate.

6. Which of the following statements is not true?
   a) In current practice, restrainers have been used as fall prevention tools.
   b) For restraints to be used, there should be clear documentation of the reasons for using them and reviewed on a regular basis
   c) Healthcare workers should be trained on how to apply restrainers to prevent injuries
   d) Restraints reduction programme does not work as it leads to increased fall rates

7. The management of the acutely confused patient should include the following *except*
   a) moving patients away from the nursing station
   b) involving family members to sit with the patient
   c) orientating patients to the hospital environment
   d) reinforcing activity limits to patients and their families

Long term care

8. Which of the following statements is *false*?
   a) Falls prevention effort is solely the nurses' responsibility.
   b) A resident who is taking four or more oral medication is at risk of falling.
   c) A resident who is taking psychotropic medication is at higher risk of falling.
   d) Hip protectors should be considered for patients who are at high risk for falls and fractures.

9. In long term care, intervention programmes should include:
   a) staff education on fall precautions
   b) provision and maintenance of mobility aids
   c) post fall analysis and problem-solving strategy
   d) all the above

10. In the assessment of nursing home patients, which of the following statements is *false*?
    a) Nursing home residents should be assessed on admission, when there is a change in status, after a fall and at regular intervals.
    b) Medication review should be included in the assessment.
    c) All nursing home patients should have their ADL and mobility assessed.
    d) Environmental assessment is not important in the nursing home as it is all standardized.

11. Risk factors for falls in the nursing home residents include:
    a) Parkinson's disease
    b) Incontinence
    c) Previous history of falls
    d) All of the above

12. Exercise programmes for the ambulant elderly should:
    a) be very demanding.
    b) be unsupervised.
    c) be ongoing.
    d) include individualised strength and balance training.

13. Which of the following statements on education in fall prevention is *false*?
    a) Education programmes should target primarily at healthcare providers, patients and caregivers.
    b) Education programmes for staff should include: the importance of falls prevention, risk factors for falls, strategies to reduce falls and transfer techniques
    c) Safe mobility, with emphasis on high risks patients, should be educated to both patients and their families.
    d) Education should only be given at the start of the falls prevention programme

14. Which of the following is recommended to improve patient safety?
    a) Wheeled furniture should be locked when stationary
    b) Have non-slip flooring
    c) Place frequently used items (including call bell, telephone and remote control) within reach of the patient
    d) Bed should be in lowest practical height when the patient is in bed.

Answers

Please refer to section:

1. 5
2. 5
3. 4.2
4. 4.2, 5.2 & 5.3
5. 5.6
6. 1.3
7. 5.4
8. 1.3, 5.1 & 5.7
9. 5.6, 5.8 & 6
10. 4
11. 4.2
12. 5.6
13. 5.8
14. 5.2