MonashHealth

Rapid Review

Risk factors for in hospital falls

Citation	Fiona Clay, Gillian Yap and Angela Melder. 2018. Risk factors for in hospital falls: Evidence Review. Centre for Clinical Effectiveness, Monash Health, Melbourne, Australia
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Executive Summary

Background

The Falls Committee has requested CCE provide a review of the evidence on risk factors for falls sustained in hospital. The high prevalence of falls and injury rate co-occur with substantial healthcare costs. [1] Moreover, older adults often experience a decline in functional status and social activities after a fall and report a reduced quality of life. [2]

The purpose of this is review is to better understand drivers for the increasing falls rate at Monash Health.

Objective

To identify the risk factors associated with an increased risk of falls in the hospital setting.

Search Strategy

Scientific and grey literature databases were searched to find synthesised evidence on risk factors for falls that occur to patients while in the hospital setting. Articles were screened and selected according to the inclusion/exclusion criteria in Table 1. Only articles published in English from 2013 onwards were considered.

Results

Eight systematic reviews met the inclusion criteria for the review and form the basis of this evidence synthesis. Three reviews focused on medication [1,3,4] , one on the built environment [5], one on hearing loss [6], one on polypharmacy [7]. The remaining two reviews focused broadly on the major risk factors associated with a patient sustaining a fall in hospital [8,9]. Two relevant guidelines were identified [10,11]. They are included as overviews and for their recommendations around risk factors.

From the evidence included, factors can be divided into two broad categories; intrinsic and extrinsic

Intrinsic risk factors are specific to the individual and includes factors that relate to: patient characteristics; co-morbidities and medication related issues.

Broadly intrinsic factors are associated with an increased risk of falls fell into four categories, namely, those relating to mental status, those relating to mobility, those involving urinary issues and finally general factors including fatigue and a history of falls.
(Further details Tables 2-4)

Extrinsic factors

Extrinsic factors are specific to:
(i) Environmental factors, such as building design, flooring condition, and lighting
(ii) Organization and people factors such as shift change, staff turnover, communication breakdowns.
(iii) Socioeconomic factors, such as income, education, social interaction level and health status [12]
(Further details Table 5)
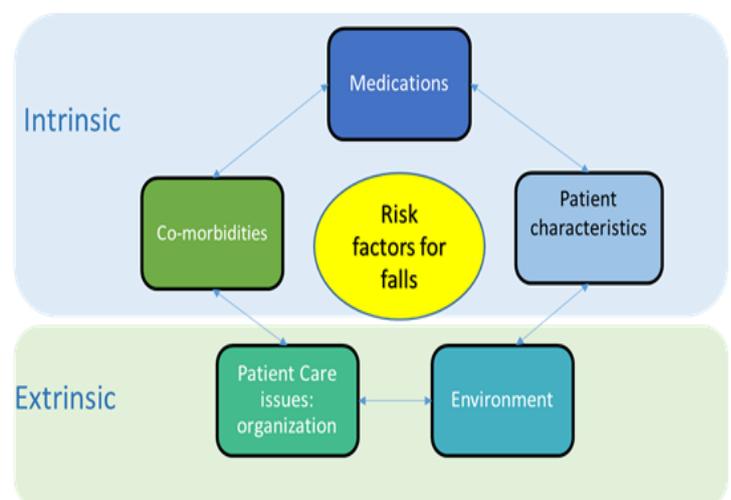
Rapid Literature Review – Risk Factors for Falls in hospital.

Implications for practice

While there was a large body of evidence on falls risk in hospital settings; only one systematic review was based in a residential care setting [2]. There was no evidence identified on paediatric, adolescent and adult falls risk in hospitals.

The review highlights four broad categories of key factors associated with the risk of falls in the hospital setting. These include medication, co-morbidities, extrinsic and intrinsic factors. These factors are often inextricably linked.

Early identification of falls risk factors enables hospitals to tailor care and respond to each patient's individual needs. Given that the systematic reviews have shown that risk factors for patient falls in hospital are multivariate, therefore a comprehensive multifactorial approach is likely to be necessary in targeting these multiple risk factors to mitigate fall risk. In turn, the simultaneous visualisation of multifactorial considerations can generate discussions surrounding the complexity and potential interactions of solutions in fall prevention management [5]. Moreover, identifying, exploring and addressing individual risk factors for falls will be of benefit to the older person.

In clinical practice, clinicians need to know who are the most vulnerable patients in the hospital and develop comprehensive interventions to mitigate fall risk. This could be achieved by:

1. Prioritizing and targeting interventions to common/high risk factors described in this report.
2. Use the list outlined in this report as a way to target or enhance analyses and review of falls sustained in hospital (which could then enable enhance the work associated with prioritizing and developing interventions as per option 1)

Full Report

Background

The Falls Committee has requested CCE provide a review of the evidence on risk factors for falls sustained in hospital. The high prevalence of falls and injury rate co-occur with substantial healthcare costs. [1] Moreover, older adults often experience a decline in functional status and social activities after a fall and report a reduced quality of life. [2]

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Table 1. Inclusion/Exclusion criteria

Table 1. Inclusion/Exclusion criteria	
Population	Include: All types of hospital patients
	Exclude: Community, Primary Care, Nursing Homes not with Monash Health
Concept	Include: Risk factors for falls in the hospital setting
	Exclude: Interventions to address falls in the hospital setting
Setting	Include: Hospitals, subacute (including residential care facilities)
	Exclude: Pre-hospital settings
Types of evidence	Include: Peer-reviewed, grey literature (synthesised)
	Exclude: All other types of information, qualitative systematic reviews
Limits	Language: Published in English
	Date: 2013 – current
Databases	Medical: Pubmed Clinical queries, Medline Ovid
	Grey Literature: Trip Database, Epistemonikos, Joanna Briggs Database, Google

Study selection: Search was performed according to terms listed in Appendix. Titles and abstracts identified were exported to EndNote X7 (Thompson, Reuters, Carlsbad, California, USA). Papers identified were screened using inclusion and exclusion criteria established *a priori.* Searches of Medline, the internet (using Google) and guideline websites were screened by one reviewer in consultation with colleagues as necessary. Literature was included based on the above criteria

Results

Eight systematic reviews met the inclusion criteria for the review and form the basis of this evidence synthesis. Three reviews focused on medication, [1,3,4] one on the built environment [5], one on hearing loss [6], one on polypharmacy [7]. The remaining two reviews focused broadly on the major risk factors associated with a patient sustaining a fall in hospital [8, 9]. Two relevant guidelines were identified [10,11]. They are included as overviews and for their recommendations around risk factors.

The majority of the included evidence related to the aged population admitted to hospital settings, while only one systematic review was based in a residential care setting [2]; none were on paediatric, adolescent, adult falls in hospital.

Summary of findings

The risk factors are summarised according to hospital or residential aged care settings.

Hospital Setting

Figure 2. Risk factors that contribute to falls risk in hospitals. Each factor is further explained below.
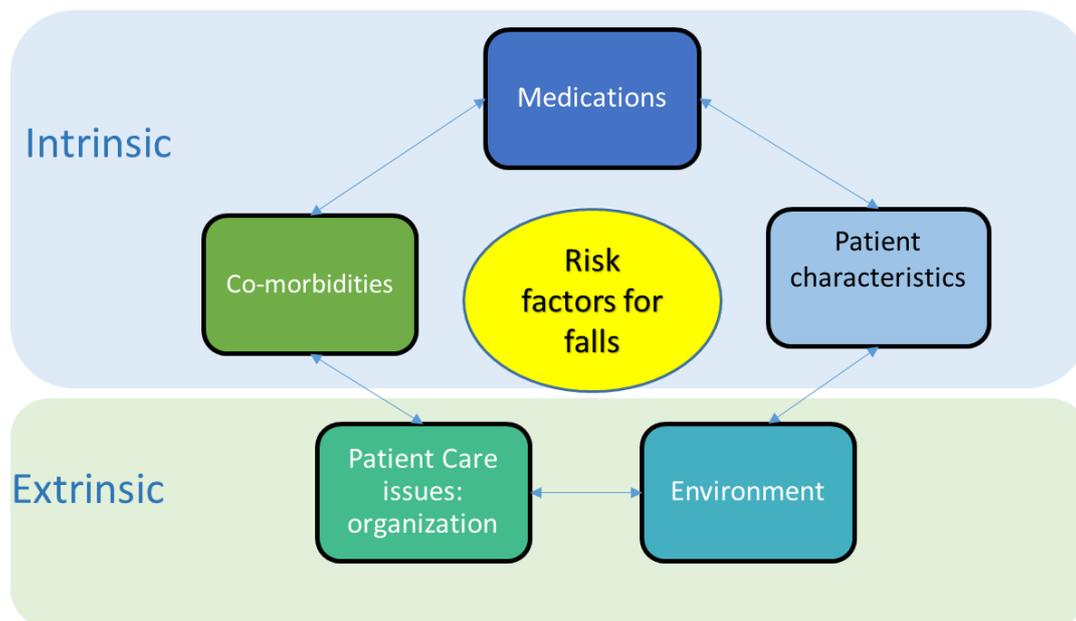
Intrinsic factors

Intrinsic risk factors are specific to the patient. Broadly intrinsic factors associated with an increased risk of falls fell into four categories, namely, those relating to mental status, those relating to mobility, those involving urinary issues and finally general factors including fatigue and a history of falls. Multiple terms were used to describe mobility issues and problems with mental status.

Table 2. Intrinsic factors associated with falls in hospitals - related to the patient [2,5-11]

General	History of falls	Old age, extremes of age
	Hostel/nursing home pre-admission	Greater care dependency/Loss of functional status
	Sleep disturbances, fatigue, insomnia	
Mental status	Altered mental status	Agitation
	Cognitive problems	Amnesia
	Impaired judgement	Delirium
	Sedated mental status	Disorientation or Confusion
Urinary issues	Urge	Frequency
	Incontinence	Night-time frequency
	Requires help to toilet at night	
Mobility issues	Mobility: decreased, impaired, change in activity	Need for mobility assistance
	Problems with gait	Needs a wheelchair
	Balance issues	Postural hypotension/sway
	Muscle weakness – lower limbs	Dizziness

Co-morbidities

Health conditions associated with an increased risk of falls in hospital include sensory impairments (hearing and vision), neurological conditions, conditions affecting mobility (fractures, respiratory problems, neuropathy, active cancer) (Table 2). Three or more comorbid health conditions increases the risk of falls [2,8-9]. No review considered the risk associated with underlying osteoporosis.

Table 3. List of comorbidities associated with an increased risk of falls in hospitals.

Active Cancer	Hypertension	Visual Impairment
AIDS	Liver Disease	Hearing Impairment
Anaemia	Respiratory Problems	Neurological Problems
Ataxia	Spinal Cord Injury	Neuropathy
Cerebrovascular Accident	Stroke	Parkinson's Disease
Delirium	Urinary Tract Infections	Fractures
Dementia	Endocrinology/Metabolic Disease	

Medications

Seppala and De Vries et al, 2018 carried out a systematic review and meta-analysis [1,3,4]. The review included 660 studies of medication and falls risk in a variety of settings, one of which being in hospital.

Table 4. List of medications categorised according to a person's associated risk of sustaining a fall while consuming these medications. A strong association with an odds ratio >1.5 means the odds of sustaining a fall while in hospital is 1.5 times greater for a person on this medication compared to a person not taking the medication. [1,3,4]

Odds ratios <1.0	Odds ratios >1.2	Odds ratio >1.5	Odds ratio >2.0
May reduce risk of falls	Moderate association	Strong association	Very strong association
Beta-Blocking Agents	Tricyclic Antidepressants	Polypharmacy	Digioxin
Statins	Benzodiazepines	Antipsychotics	Selective Serotonin Reuptake Inhibitors
	Loop Diuretics	Antidepressants	
		Long-Acting Benzodiazepines	
		Anti-epileptics	
		Digitalis	

Polypharmacy

Polypharmacy is consistently associated with an increased risk of falls [1,3,4,8-11]. In the above table, the association is strong with an odds ratio of >1.5. Different definitions of polypharmacy exist. The following medication factors under the umbrella term of polypharmacy are important risk factors for patient falls in hospital.

- Medication side effects
- Number of different medications
- Multiple drug use
- Number of medications (for 1 drug increase)
- In appropriate or potentially inappropriate prescribing

Extrinsic factors

Extrinsic factors are specific to
(i) Environmental factors, such as building design, flooring condition, and lighting
(ii) Organization and people factors such as shift change, staff turnover, communication breakdowns.
(iii) Socioeconomic factors, such as income, education, social interaction level and health status [12]

Table 5. Extrinsic factors associated with falls in hospitals [2, 5, 8-11]

Environmental factors	*Workspace*	*Patients personal workspace*
	− Unit type and layout (visibility) − Clutter (tripping hazards) − Bathroom location/ distance to bathroom − Flooring more falls on linoleum as compared to other − surfaces, floor transitions (thickness change) − Wet or slippery floor − Lack of space for family within the room − Doors in patient rooms not open/out of the way (due to space conflicts) − Shared rooms and bathrooms/no bathrooms − Cords and tubing − Architecture of the units blocking the visibility of beds − Hazards in the wards	− Bathroom layout (i.e., sidewall toilet vs. directly across from the entry) − Call system inaccessibility − Bedside commodes − Lack of/poorly positioned permanent assistive devices (e.g., grab bars) − Poor lighting (toileting at night) − Inappropriate flooring − Noise (e.g. alarms that hampers sleep)
	Products	
	− Furniture (generic) − Bed size − Bed rails (used as restraint) − Bed height (high beds) − Unstable/unmovable furniture − Inability to put beds in low positions − Bed/chair alarms—movement alert (i.e. Unavailable, inaudible, deactivated, irregularly used)	
Organization and people factors	*Staffing and systems:* − Patients left unattended − Higher staffing levels correlated to more falls − Turnover (staff/leadership) − Unscreened falls risk on admission − Scheduled tasks that require closing the curtains or leaving the bed edge area to perform other activities − Shift change − Response time to the call of lights − Adoption of protocols and safety culture − Level of use of personnel, nursing care, and computerized systems − Communication breakdowns − Cognitive overload/workload − Reflex injuries during patient assistance	*Maintenance:* − Contamination of surfaces—ice, rain, urine − Wet or slippery floor − Hazards in the wards *Patient care issues* − Footwear − No walking aids − Lack of familiarity with the space − Unassisted transferring/toileting − Getting out of bed − LOS >21 days − Needing radiation therapy − CT scans
Socioeconomic factors	− Low English literacy − Low Health Literacy − Greater care dependency	

Residential aged care setting

One systematic review included in this evidence synthesis reported on risk factors for falls both in hospitals and in nursing homes. The risk factors with the strongest associations with patient in hospital falls are included in the table below. The higher the number (odds ratio), the greater the risk. The strongest risk factors were a history of prior falls, vision impairment, incontinence and Parkinson's disease. [2]

Table 6. Risk factors for falls in residential care

Odds ratios >1.2	Odds ratio >1.5	Odds ratio ≥2.0
Number of medications (for 1 drug increase)	Antidepressants (yes vs. no)	History of falls (yes vs. no)
Sedatives (yes vs. no)	Walking aids (use vs. no use)	Vision impairment (yes vs. no)
	Disability (moderate vs. none)	Incontinence (yes vs. no)
		Parkinson's disease (yes vs.no)

Discussion

The topic of factors associated with patient falls risk in hospital is a vast, complex and multifactorial daily problem.

Coming to hospital takes the patient away from the familiar surroundings of their own home. While in hospital, they are faced with new experiences in unfamiliar settings. Problems with mobility and bathroom habits that may be managed well at home are at risk because of the lack of familiarity with new spaces.

Falls while in hospital are associated with increased length of stay, use of health resources and increased rates of discharge to residential care facilities [2]. Some inpatient groups have fall risk profiles which differ from adult patients in the general hospital population. These groups include children, mental health patients and obstetric patients.

Existing risk factors for a fall maybe exacerbated by a variety of new factors faced on admission to hospital. Individuals who were not initially at risk of a fall may develop a falls risk. Patients who were identified at increased risk of falling during their admission may continue to be at increased risk of falling after discharge [2].

While in hospital, cognitive functioning can become impaired and pre-existing cognitive problems may worsen. This can severely affect a patient's capacity to judge and manage their own falls risk including recall of advice and education from staff about their falls risk and how to manage safely while in hospital. English as a second language may limit the ability to affectively engage with staff over falls risk.

History of falls
The association for history of falls was very strong. The odds of a fall while in hospital was 3 - 4 times higher for someone who had previously had a fall than for someone who had never had a fall [2,8-9]. History of falls may mask the influence of factors causing these earlier falls. It may be an indicator of an underlying problem, e.g. impaired balance, which is the real causal agent. Repeated falls and their consequences often result in initial admission to a nursing home and falls continue to affect the residents' remaining independence, once they are living in a facility [2].

Medication
A series of three systematic reviews with meta-analysis found consistent associations between the use of antipsychotics, antidepressants, and benzodiazepines with an increased risk of falls in older adults [1,3,4]. Seven medication classes (antipsychotics, antidepressants, TCAs, SSRIs, benzodiazepines, short-acting benzodiazepines, long-acting benzodiazepines) were associated with increased risk of falls in meta-analyses of adjusted data. These classes of medication involve potential depression of the central nervous system. In addition, first ever prescription of antidepressants and benzodiazepines appear to increase the fall-risk. Higher dosages of psychotropics also appear to be associated with a higher fall-risk.

Several cardiovascular drugs are associated with fall risk, in particular loop diuretics [1]. Digoxin and digitalis users may have an increased fall risk, whereas statins users may be associated with a reduced risk [1]. Beta-blockers seem to be protective [1]. It is important to note that the protective nature of betablockers and statins may not be as a result of the medications themselves but other factors related to these patients and the health services and hospital care associated with individuals prescribed these medications.

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Opioid and antiepileptic use and polypharmacy were significantly associated with increased risk of falling in the meta-analyses. Long-term use of proton pump inhibitors and opioid initiation may increase the fall risk.[3,4]

Terminology

Assessing the importance of risk factors for falls is complicated by the use of multiple different terms to assess the level of consciousness of patients including disorientation, confusion, dementia, organic mental disorder, cognitive impairment, delirium. Similarly several different terms were used to assess mobility issues including mobility change, decreased, impaired, change in activity, need for mobility assistance, dizziness, problems with gait, balance issues, muscle weakness, sway.

Intrinsic factors

The intrinsic factors broadly fell into four categories. Two of these categories relate to age related decline in balance and mental status. While age related decline is important, pathology affecting any of the systems involved in balance and mental status interact to strengthen the risk. Examples include glaucoma affecting vision, early onset dementia affecting cognition. It has been proposed that the more intrinsic risk factors, the greater the risk of falls, many falls are a result of both intrinsic and extrinsic factors.

Extrinsic factors [2,8-12]

Extrinsic factors include the environment contributing to falls (e.g., slippery surface, loose cords, poor lighting) or activities with a high risk associated with them (transferring to the toilet without assistance when assistance is recommended). In addition, extrinsic factors are related to the organization in this case hospital and its people including hazards in the wards, patients left unattended and workload. It is proposed that in many cases, extrinsic factors can be avoided. One of the strongest and most consistent factors associated with falls in hospital was admission to the geriatric unit [8]. This is likely to reflect the age and condition of the patients rather than the way the unit is operated or managed.

Reliability of the evidence

Overall the quality of the reviews was moderate to high. Four of the eight reviews included a meta-analysis [1-4]. Most of the reviews indicated the publications years searched. Only a few reviews included a specific methodological quality assessment of included studies.

Issues to note

The included reviews all commented on the use of different definitions of falls in studies. This affects interpretation and comparison of studies. There was wide variation in nomenclature, and a lack of consistency over falls and medication classifications systems. Across the reviews, there was inconsistency in methods of data collection.

Methodological limitations included
- Definitions of falls is variable or not provided
- Lack of medication classification system use
- Unclear about the method of fall ascertainment.
- Variability in definitions of short acting and long acting variability benzodiazepines
- Variable medication ascertainment at the time of fall for example by using pharmacy dispensing data
- Underreporting of the precise-uniform classification of target medication (Anatomical Therapeutic Chemical Classification)
- Heterogeneity did not disappear after stratification for population and healthcare setting.
- Use of multiple terms to describe mobility issues and mental health status. Adoption of a consistent nomenclature will aid analysis of falls as adverse events

Implications for practice

While there was a large body of evidence on falls risk in hospital settings; only one systematic review was based in a residential care setting [2]. There was no evidence identified on paediatric, adolescent and adult falls risk in hospitals.

The review highlights four broad categories of key factors associated with the risk of patient falls in the hospital setting. These include medication, co-morbidities, extrinsic and intrinsic factors. These factors are often inextricably linked.

Early identification of falls risk factors enables hospitals to tailor care and respond to each patient's individual needs. As systematic reviews have shown that risk factors for falls in hospital in patients are multivariate, a multifactorial approach is likely to be necessary in targeting these multiple risk factors to mitigate fall risk. In turn, the simultaneous visualisation of multifactorial considerations can generate discussions surrounding the complexity and potential interactions of

solutions in fall prevention management [5]. Moreover, identifying, exploring and addressing individual risk factors for falls will be of benefit to the older person.

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References

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Appendix

Figure 1.

This diagram indicates the flow of identified and included articles from the different sources searched.

The complete list of guideline databases searched and results screened are in Appendix 1 Table 3.

A total of 606 articles were identified from grey literature sources and scientific bibliographic databases. The title, abstract and summary of the articles were screened by one reviewer.
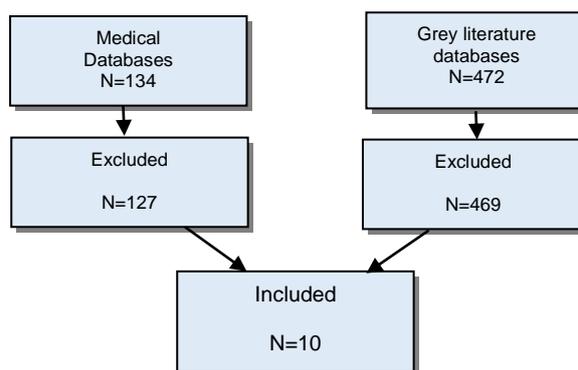
Search Strategy

Table A1. Database searches

Table A1. Database searches (Search term: "falls" and "risk factors")	
Source	**Results**
Medline	82
Joanna Briggs Institute	86
Pubmed clinical queries	52
Epistemonikos	266
Google	120

Table A2: Medline OVID search terms

Medline OVID search terms	
Accidental Falls/	20830
(falls or faller$).tw.	40341
or/1-2	49714
exp Residential Facilities/	49034
exp Long-Term Care/	24441
exp Hospitalization/	208501
exp Hospitals/	252740
exp Hospital Units/	97844
Subacute Care/	854
Institutionalization/	5153
exp Rehabilitation Centers/	13702
((long stay or acute or sub-acute or subacute or residential or hospital) adj3 (care or ward$1)).tw.	76511
((rehabilitation or geriatric) adj (ward$1 or hospital$1 or unit$1)).tw.	7494
(hostel$1 or nursing home$).tw.	27822
or/4-14	638629
3 and 15	5940
prognos$.tw.	513459
predict$.tw.	1342539
exp prognosis/	1429145
(predict* or associa* or prognos*).tw.	5046215
(risk adj (predict* or factor? or score)).tw.	512295
((prognostic or predict*) adj2 model?).tw.	76636
17 or 18 or 19 or 20 or 21 or 22	6040497
16 and 23	2863
limit 24 to english language	2672
limit 25 to yr="2013 - 2018"	1125
limit 26 to systematic reviews	90
limit 27 to humans	82

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Falls in older people: assessing risk and prevention NICE Clinical guideline [CG161] [10]

1.2.1 Predicting patients' risk of falling in hospital	1.2.1.1 Do not use fall risk prediction tools to predict inpatients' risk of falling in hospital. **[new 2013]** 1.2.1.2 Regard the following groups of inpatients as being at risk of falling in hospital and manage their care according to recommendations 1.2.2.1 to 1.2.3.2: • all patients aged 65 years or older • patients aged 50 to 64 years who are judged by a clinician to be at higher risk of falling because of an underlying condition. **[new 2013]**
1.2.2 Assessment and interventions	1.2.2.1 Ensure that aspects of the inpatient environment (including flooring, lighting, furniture and fittings such as hand holds) that could affect patients' risk of falling are systematically identified and addressed. **[new 2013]** 1.2.2.3 Ensure that any multifactorial assessment identifies the patient's individual risk factors for falling in hospital that can be treated, improved or managed during their expected stay. These may include: • cognitive impairment • continence problems • falls history, including causes and consequences (e.g. injury and fear of falling) • footwear that is unsuitable or missing • health problems that may increase their risk of falling • medication • postural instability, mobility problems and/or balance problems • syncope syndrome • visual impairment. **[new 2013]** 1.2.2.4 Ensure that any multifactorial intervention: • promptly addresses the patient's identified individual risk factors for falling in hospital • takes into account whether the risk factors can be treated, improved or managed during the patient's expected stay. **[new 2013]** 1.2.2.5 Do not offer falls prevention interventions that are not tailored to address the patient's individual risk factors for falling. **[new 2013]**
1.2.3 Information and support	1.2.3.1 Provide relevant oral and written information and support for patients, and their family members and carers if the patient agrees. Take into account the patient's ability to understand and retain information. Information should include: • explaining about the patient's individual risk factors for falling in hospital • showing the patient how to use the nurse call system and encouraging them to use it when they need help • informing family and carers about when and how to raise and lower bed rails • providing consistent messages about when a patient should ask for help before getting up or moving about • helping the patient to engage in any multifactorial intervention aimed at addressing their individual risk factors. **[new 2013]** 1.2.3.2 Ensure that relevant information is shared across services

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Health Victoria report that the following patients should be considered as having a higher risk of falling. In each case, hospitals should undertake falls assessment and provide one to one patient education. [11]

1. aged 65 and over
2. aged 50 – 64 years and at higher risk of falling (according to clinical judgement) due to an underlying condition,
3. all inpatients admitted following a fall.

Assessment of falls risk and falls risk factors

Assessment of risk factors should include assessment for individual risk factors such as:

- past history of falls
- cognitive impairment
- delirium
- incontinence, indwelling catheters
- extended period of medical illness
- foot problems and footwear
- visual impairment
- poor balance
- problems with walking and self-care
- health conditions that may increase the risk of falling, such as stroke, Parkinson's disease, peripheral neuropathy and postural hypotension
- medication, including number and types of medication associated with falls, particularly sedatives, analgesics (opioids and antineuropathic pain medications) and antipsychotics
- musculoskeletal conditions, such as osteoarthritis of the knee and hip
- frailty
- significant weight loss and under nutrition leading to loss of muscle mass and strength
- prolonged bed rest.

Assessment for injury risk: Assessment for the risk of injury (e.g. fracture, head injury) also needs to be undertaken:

- conditions such as osteoporosis
- long term steroid use
- previous fractures
- conditions such as metastatic bone disease
- use of anticoagulants such as warfarin.

Assessment of the environment: Scan the ward environment for hazards such as:

- clutter
- poor lighting
- slippery surfaces
- equipment in need of repair
- equipment or gait aids without brakes locked appropriately

Table A3: Characteristics of included systematic reviews

First author	Year	No of studies	Research questions	Types of studies	Articles published between	Literature sources
Taylor	2016	27	To explore aspects of the built environment that contribute to falls		1998-2012	Medline Cinahl Web of science
Deandrea	2013	24	To review the risk factors for falls in older people in nursing homes and hospitals	Prospective studies	2002-2008	Medline
Hammond	2013	16	To review the literature on polypharmacy as a risk factor for falls in the elderly	Cohort, case control, cohort, longitudinal and systematic reviews	2000-9/2012	Medline Cinahl Healthsource
Zhao	2015	23	1. What is the fall prevalence in older adult patients in acute care settings? 2. What are the major risk factors for falls in older adult patients in acute care hospitals regarding patient characteristics and care settings? 3. What are the fall-related outcomes in older adult patients in acute care hospitals?	cross-sectional (70%), case-control (21%). two longitudinal studies	2004-2014	PubMed, Cochrane Library, CINAHL, MEDLINE, and PsycINFO
Jiam	2016	12	To evaluate the current evidence for an association between hearing loss and falls risk.	Cross-sectional and longitudinal studies	1950-7/2014	PubMed, CINAHL, Embase, Scopus, Web of Science, and Cochrane databases
Seppala,	2018	281	To provide a comprehensive overview between nonpsychotropic and noncardiovascular medications and falls risk in older adults	RCTs. Cohort, case control, cross sectional, case crossover	Onset to 10/2016	Medline Embase PsycINFO
Seppala,	2018	248	To provide a comprehensive overview between psychotropic and medications and falls risk in older adults	RCTs. Cohort, case control, cross sectional, case crossover	Onset to 10/2016	Medline Embase PsycINFO
De Vries	2018	131	To provide a comprehensive overview between cardiovascular medications and falls risk in older adults	RCTs. Cohort, case control, cross sectional, case crossover	Onset to 10/2016	Medline Embase PsycINFO