TOPIC 3

Health Quality & Safety Commission New Zealand
Kupu Taurangi Hauora o Aotearoa

Falls risk assessment: a multifactorial approach

How you can use **Topic 3**

Use Topic 3 as:

- an information resource that explains the evidence and reasons for assessing an older person's risk factors for falling
- a 60-minute professional development exercise (see 60 minutes of professional development in this resource).

LIVE STRONGER FOR LONGER
PREVENT FALLS & FRACTURES

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Key messages in **Topic 3**

- When you **ask** an older person about falls and their reply indicates they may be at risk of falling, offer them a thorough multifactorial **assessment** of their risk factors. Then put an individualised care plan into **action** in partnership with them and their family/whānau that focuses on any modifiable risk factors.
- Several factors contribute to the risk of falling. These include poor balance and strength, medication that increases the likelihood of a fall, or a history of previous falls. Cognitive impairment, pain, poor vision, depression and several other patient-specific health conditions are associated with falls.
- Assessment of an older person's environment by a trained health professional, using information from family/whānau and examining information in the shared health record are all part of a full assessment for risk factors.
- Remember that every older person is different and this means their risk factors for falling will vary.
- The overall message is to **ask**, **assess** and **act** to reduce the risk of an older person falling or being harmed should they fall.

What **Topic 3** covers

Topic 3 explains how to identify a person's risk factors for falling. Topic 4 outlines how to take action by addressing identified risk factors in an individualised care plan. Topics 2, 3 and 4 go together to explain the process of asking, assessing and acting to reduce harm from falls.

Interventions for falls prevention work but they must be chosen with the particular person in mind. Topic 3 explains how we should systematically check for modifiable falls-related risk factors. This allows us to provide tailored interventions for the individual, as well as general interventions like strength and balance, and environment modification that benefit most older people.

Published guidelines recommend not using tools that predict the risk of falling. The reading required to complete the professional development activity for Topic 3 explains why.

It is possible to modify or manage many risk factors for falling. The key is to explore with the older person and their family/whānau which interventions and supports will work best for them and so that older people and their families/whānau understand why preventing falls is important and how the interventions work.

Which older person needs a risk assessment?

Guidelines recommend that all older people who live in the community and access primary and community health care are routinely screened for their risk of falling (see Topic 2). Some guidelines extend routine screening to any setting (Kenny et al 2011; National Institute for Health and Care Excellence 2013). The ask, assess, act concept and supporting resources outline evidence-based screening questions to identify the older people at risk of falling who will benefit from multifactorial assessment and interventions. Topic 3 now covers this multifactorial assessment.

80% of falls in hospital occur in people aged 65 and over (Healey and Darowski 2012)

We should not view a multifactorial assessment of the risk factors for falls as an 'extra' or separate process. Risk factors can negatively influence the general wellbeing of older people, and addressing risk factors for falls can lead to making changes that improve an older person's quality of life. Such factors can include a history of falling, muscle weakness, sedative medicines, postural hypotension, poor sleep, agitation and confusion, and urinary incontinence or frequency.

Recognise the vulnerability of inpatients

The recommendation to **regard** all older inpatients as being at risk of falling – and to **consider** multifactorial assessment and intervention – recognises the vulnerability of older people in hospital (Healey and Darowski 2012; Leape et al 1991; National Institute for Health and Care Excellence 2013). More important than any age cut-off is the imperative for clinical judgement. Inpatients at any age may be considered at risk as they are acutely unwell. Conversely, older inpatients without underlying conditions may not have any specific modifiable risk factors (Hendrich et al 2003; National Institute for Health and Care Excellence 2013).

Predict or assess the risk of falls: which is recommended?

Falls risk prediction tools are those that aim to calculate a person's risk of falling in a numerical score, either in terms of 'at risk/not at risk', or 'low/medium/high risk' (Ganz et al 2013; National Institute for Health and Care Excellence 2013). However, the reason to establish risk is to know when to intervene and to take the right **actions** to reduce individuals' risks of falling and falls-related injuries (Blake 2013; Oliver 2008; Oliver and Healey 2009). We know that no risk assessment tool is sufficiently predictive in acute hospital settings (Matarese et al 2015).

The National Institute for Health and Care Excellence (NICE) 2013 clinical guideline's recommendation is: 'Do not use fall risk prediction tools to predict inpatients' risk of falling in hospital'. NICE further recommends using multifactorial risk assessment instead of using one-size-fits-all interventions. Evidence indicates that multifactorial interventions (based on assessment of the particular risks of each individual) may reduce the rate of hospital falls, particularly in sub-acute care (Cameron et al 2018). ◆

When to do a multifactorial assessment by risk factors

Multifactorial interventions may be effective in preventing an older person from falling, so we should systematically check for falls-related risk factors that we can do something about. Assessing by risk factors lets us take appropriate actions for the older person. It is an ongoing process, because new risk factors may present as an older person's condition changes.

Always assess the risk factors after an older person has screened positive for risk of falling in any care setting: in the community, aged residential care or in hospital (see Topic 2). All older inpatients aged 75 years and older (Māori or Pacific peoples aged 55 years and older) should have an assessment of risk factors for falling while in hospital. This is a quality and safety marker.

Frameworks or checklists covering common risk factors can support a consistent and standardised approach, ensuring risk factors aren't missed and the older person is reviewed through a 'falls prevention lens'.

In the aged residential care setting the interRAI tool can be used to support a standardised approach to screening for falls risks. interRAI provides a comprehensive clinical assessment of a person's medical, rehabilitation and support needs and abilities.

In practice, multifactorial risk assessment and interventions involve 'systematically checking for and acting on falls-related risk factors that could be treated, modified or better managed (Healey and Darowski 2012). It is important to link identified risk factors to interventions (and vice versa) in an individualised plan of care, while considering interventions that might be appropriate for everybody, such as education or strength and balance exercises, at the same time as ensuring all older people find themselves in a safe care environment (Healey and Darowski 2012).

What a multifactorial risk assessment should consider

Multifactorial risk assessment should consider:

- balance, strength and gait (Crandall et al 2016; Rimland et al 2016; Stubbs et al 2015)
- mobility and muscle strength (Crandall et al 2016)
- feet and shoes (Wylie et al 2019)
- medicines/polypharmacy (addressed in Topic 8) (Narayan and Nishtala 2015)
- dizziness/postural hypotension (Mol et al 2019)
- cognitive decline
- visual or hearing impairment (Zhang et al 2015)
- continence (Batchelor et al 2013)
- other health and social problems, including: diabetes and hypoglycaemia, surgery, cancer, heart failure, arrhythmia and low blood pressure, as all are known to increase falls, sleep quality (Chen et al 2017), hyponatraemia (Corona et al 2018), previous fragility fractures, malnourishment (Trevisan et al 2019), social isolation and loneliness (Petersen et al 2020), pain, depression and psychotropic medicines (Hoffman et al 2017)
- home safety and environment safety (addressed in Topic 5) (Ambrose et al 2015; Crandall et al 2016)
- risk of injury including osteoporosis/fragility fractures and anticoagulation.
- an action plan to address the risk factors identified. ◆

What are some reasons and resources for assessing common risk factors?

The pocketcard is a useful screening tool that gives guidance for identifying risk factors for falls, and what to ask about. It is arranged around three themes: mobility; underlying medical conditions; and environmental factors. A full list of 50 risk factors for falls can be found here (Sousa et al 2016).

As well as specific risk factors, good care of the older person means looking for signs of frailty and assessing and managing them. Recommendations for frailty screening (including sarcopenia) are a theme of recent reviews and guidelines (Crandall et al 2016; Hubbard et al 2015). Frailty is associated with falls, and is partly reversible by managing the older person's health, including through nutrition and exercise (Beaudart et al 2017; Ritt et al 2016). The results of assessment for frailty may result in referral to a falls prevention programme.

> Risk assessment is meaningless without action (Oliver and Healey 2009)

Assess for problems in mobility, balance or strength

To assess balance, strength and gait in community-dwellers, use these evidence-based resources:

- the timed up and go (TUG) test
- the 30-second chair stand test
- the four-stage balance test.

A 2017 systematic review and meta-analysis confirms the utility of using these tests, showing they are currently among the most evidence-supported functional measures for identifying people at high risk of falling (Lusardi et al 2017). However, these tests are underused (Bassett et al 2018). Consider using more than one of these functional measures, as well as other kinds of assessment, because no single test provides sufficient information on risk of falling. The tests can be used in sequence, and assessment can stop once one test (eg, TUG more than 12 seconds) indicates the older person has screened positive for increased risk for falls.

Consider whether the older person might be at risk of vitamin D deficiency. This may be associated with mobility problems and more falls. See the information box in Topic 4 that explains who might require vitamin D supplementation.

Assess the older person for underlying medical conditions associated with falls

Underlying medical conditions, and the medicines the older person is taking for them, may be associated with a fall. Conditions include cognitive impairment, impaired vision, continence problems, diabetes, depressive disorders and chronic pain.

Medicines

Medicines have many physiological effects that can increase the risk of an older person falling. These effects include the impact of medicines on blood pressure, gait/movement, cognition and toileting needs. The risk of falls can increase if medicines are not reviewed regularly to ensure therapeutic safety when the older person's health conditions, physiology, routines or lifestyle change. Also consider alcohol use. Alcohol can affect balance, gait, mobility and cognitive function and may make falls more likely.

Cognitive impairment (dementia or delirium)

We know that cognitive impairment affects falls (Mitchell and Bateman 2012). People with dementia suffer more falls, more fractures and higher post-fracture mortality than people without dementia. Yet they are under-assessed for falls risk factors and are less likely to receive treatment for osteoporosis.

WHAT ARE SOME REASONS AND RESOURCES FOR ASSESSING COMMON RISK FACTORS? *continued*

Older patients who have suffered a fall or a fracture often have some form of cognitive impairment, including dementia. Yet they do not routinely receive a cognitive assessment. This means an opportunity for a diagnosis of dementia is often missed.

A longitudinal cohort study from the United Kingdom found that, over 12 months, 66 percent of participants with dementia fell once compared with 36 percent of age-matched people in the control group (Allan et al 2009). This study also reported on the frequency of falling in the two groups over the period. Most notably, older people with dementia fell eight times more often.

A retrospective cohort study from the United Kingdom evaluated hip fracture incidence among patients with Alzheimer's disease (AD) compared with age- and gender-matched controls for the period 1988–2007 (Baker et al 2011). The incidence of hip fracture among patients with AD was almost three times higher than for those without AD. Mortality was also significantly higher for AD patients who had fractured their hip than for those with hip fractures who did not have dementia. For those with cognitive impairment, additional risk factors for falls identified in a systematic review include verbally disruptive and attention-seeking behaviour, visual perception problems and caregiver burden (Fernando et al 2017).

Auckland City Hospital's orthogeriatric service identified cognitive impairment among 43 percent of patients with a hip fracture (Fergus et al 2011). Guidance recommends assessment of cognitive function prior to hip fracture surgery, yet only 35 percent of those who fracture their hip in New Zealand get this assessment (ANZHFR 2019). Assessment of risk factors in those with cognitive impairment is important, in hospital, in the community and in aged care, and details can be found in the Health Quality & Safety Commission's review on falls interventions for those with cognitive impairment. In particular, pain is a risk factor for falling and may be under-diagnosed and under-treated in those with cognitive impairment.

Impaired vision

Older people with visual impairments are about twice as likely to fall as those with good vision (Crews 2016). Older people with visual impairments may limit their activity because they fear they will fall, which further increases their risk of falling. Particular problem areas are stairs, wet floors, uneven pavements and changes in otherwise familiar environments (Campbell et al 2010). We know that success in reducing home hazard-related falls in people aged 75 and older who have significant visual impairment is possible (La Grow et al 2006). Topic 4 lists some possible strategies for tackling impaired vision.

Continence problems

Consider continence problems when assessing an older person's risk of falling. Problems of urinary urgency or incontinence can make falls more likely. One-third of falls in hospital relate to toilet needs (Mion et al 2012).

Orthostatic hypotension

Orthostatic hypotension increases the risk of falls by 73 percent (Mol et al 2018). It is very common with a prevalence of one in four in aged care facilities and one in five in the community (Saedon et al 2020). Yet only 16 percent of 4,846 UK inpatients had a lying and standing blood pressure recorded within 48 hours of admission. Health professionals should measure lying and standing blood pressure, record the results in the clinical notes and take steps to investigate and address any postural blood pressure drop. The Royal College of Physicians has produced standardised and pragmatic guidance for how and when to measure standing and lying blood pressure (O'Riordan et al 2017).

Recognise other health problems that merit special mention

Diabetes

Patients with diabetes are particularly at risk of falls due to, for example, hypoglycaemia, foot complications and lower-extremity pain, peripheral neuropathy, and obesity (Gravesande and Richardson 2016; Malabu et al 2014; Yang et al 2016).

WHAT ARE SOME REASONS AND RESOURCES FOR ASSESSING COMMON RISK FACTORS? *continued*

Depression

A 2015 meta-analysis shows that falls are more likely in patients with a diagnosed major depressive disorder (Stubbs et al 2016). A link is also apparent between using some types of antidepressants and falling. Depression is common in older people and often remains undiagnosed. Consider screening older people for depression. The PHQ-2, PHQ-9 or Cornell Scale for Depression in Dementia tools may assist with screening efficiently. The PHQ-2 has two simple questions: Over the past two weeks have you been bothered by little interest or pleasure in doing things? Or, have you been feeling down, depressed or hopeless? An answer of 'yes' to either question requires further evaluation.

Pain

A meta-analysis found that pain is associated with adults who fall regularly. We should routinely assess and address pain when assessing for falls (Stubbs et al 2014). The chronic musculoskeletal pain associated with osteoarthritis is a significant risk factor for falls because it affects mobility, gait and balance (Leveille et al 2009).

Assess the older person's environment

Assessing the older person's environment is a key component of a multifactorial risk assessment, and we must act upon identified environmental risks. A referral to an occupational therapist for home hazard assessment and modification is effective for those at high risk of falls.

Search for supplementary information about risk factors

Information already in the electronic record may help you compile information about risk factors for individual older people. TrendCare and interRAI are already used for this. For example, both the frail group in residential care and those receiving home and community support services in their own homes may have risk factors that trigger a falls clinical action protocol (CAP) from an interRAI assessment.

Many innovative methods are available to assess the risk factors for falls. Some studies have explored the use of various health record data that is collected routinely to help identify which older people to refer to a multidisciplinary, multifactorial falls service (Baus et al 2016). Such screening and a comprehensive geriatric assessment has the potential to target unmet need on a large scale (Parry et al 2016).

Consider measuring the older person's quality of life

Consider asking about, or measuring, the older person's quality of life. Simple, validated tools such as the EQ-5D will help you do this. Being able to monitor the person's quality of life before and after a fall allows us to investigate strategies for improving important outcomes (such as mobility, self-care, life participation, pain and mood) in the future.

Use effective teamwork

Framing the older person only as a potential faller misses the point that managing underlying conditions well reduces their risk of falling. Multifactorial assessment and interventions require teamwork to ensure coordinated interdisciplinary attention across primary and secondary services. Each discipline has specific expertise and appropriate referrals can ensure follow-up is appropriate.

However, a coordinated approach is needed when assessing an older patient for risk of falling. Ideally the person is assessed once rather than many times where the same questions are repeatedly asked of patient and family/whānau. Consider referring the older person for a comprehensive geriatric assessment to address complex interrelated problems of the 'geriatric syndrome' in a coordinated way.

The key issue is not about predicting correctly, but taking action. We should always be asking: 'How well are we doing at assessing and supporting older people who risk falling?' ◆

60 MINUTES OF PROFESSIONAL DEVELOPMENT

This learning activity equals 60 minutes of your professional development.

You can add it to the personal professional record you keep to check off your competence framework requirements.

To complete this learning activity, first read the whole topic and the two required readings, then assess your learning with the 10 self-test questions.

Learning objectives

Reading and reflecting on Topic 3 and the materials in this teaching and learning package will enable you to:

- describe which older person needs a multifactorial risk assessment for falls
- understand the importance of individualised risk factor assessment to identify risk factors to address in an older person
- choose a standardised approach to assessing an older person for risk factors for falls
- discuss the difference between (1) using risk prediction for falls to obtain a score; and (2) using risk factors as a basis for assessment
- reflect on the capabilities of you and your team for multifactorial risk assessment, when someone has screened positive for risk of falling.

Teaching and learning package

Gather up the resources you'll need. Use the hyperlinks in this topic, or download or print the reference material.

Required reading

These two readings will help you form evidence-informed perspectives about how to assess a person who is at risk of falling, and what actions to take when they do.

1. Oliver D. 2008. Falls risk-prediction tools for hospital inpatients. Time to put them to bed? *Age and ageing* 37(3): 248–50. Full text here.
2. Phelan EA, Mahoney JE, Voit JC, et al. 2015. Assessment and management of fall risk in primary care settings. *Med Clin North Am* 99(2): 281–93. You'll find it here.

ADDITIONAL RESOURCES

Promotional posters (A2): ask, assess, act

Informational poster (A3): ask, assess, act resource for health professionals

Pocketcard: ask, assess, act resource for health professionals

Helpsheet: about ask, assess, act resources

Patient letter: advises older people at risk of referral

NICE CG161 Falls: baseline audit tool

10 QUESTIONS

TOPIC 3 Professional development: questions to test your knowledge

PROFESSIONAL DEVELOPMENT ACTIVITY

ANSWER these questions to check you have retained the knowledge reviewed in this topic and readings

ANSWER

1 Guidance from the UK National Institute for Health and Care Excellence states falls risk prediction tools (used to predict inpatients' risk of falling in hospital) have a 'Do Not Do' recommendation.
☐ true ☐ false

2 In the required reading **Falls risk-prediction tools for hospital inpatients. Time to put them to bed?** the author argues that:
☐ risk-prediction tools have been shown to perform consistently across all settings
☐ some effective falls prevention programmes have not used these tools
☐ using these tools assures everyone that a patient's falls risk is being managed properly
☐ all of the above ☐ none of the above.

ASSESS your capability to ask older people about falls. Assess that capability (1) personally and (2) as a team

ASSESS

3 Outline the skills needed for your role.

4 What is your plan for upskilling to meet any gaps in your skillset?

5 Review your team's approach to doing multifactorial assessment and intervention processes when older people screen positive for risk of falling. Use the **NICE baseline audit tool**. Select the recommendations relevant to your service:
Preventing falls in older people:
1.1.1 1.1.2 1.1.3 1.1.4 1.1.5
1.1.6 1.1.7 1.1.8 1.1.9 1.1.10
Preventing falls in hospital:
1.2.1 1.2.2 1.2.3 1.1.4 1.1.5
Does your team meet all the relevant recommendations?
☐ yes ☐ no

6 What would need to change to improve your team's multifactorial assessment and intervention processes?

7 How would you know that multifactorial assessment and intervention processes had improved?

Outline three learnings or insights and how you will APPLY them in your practice

APPLY

8 My first learning/insight is:

I will apply it in practice by:

9 My second learning/insight is:

I will apply it in practice by:

10 My third learning/insight is:

I will apply it in practice by:

LEARNER	NAME:	PROFESSION:	DESIGNATION:
DATE:		REGISTRATION ID:	WORKPLACE:

Validation that learner has completed this professional development activity		Signature:
NAME:	PROFESSION:	CONTACT:
DATE:	REGISTRATION ID:	WORKPLACE:

For answers to the above self-assessment questions click here.

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