

TOPIC 1



HEALTH QUALITY & SAFETY
COMMISSION NEW ZEALAND
Kupu Taurangi Hauora o Aotearoa

Falls in older people: the impacts

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FOR LONGER**

PREVENT FALLS & FRACTURES

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Why have this programme about reducing harm from falls?

On the International Day of Older Persons in 2012, Ban Ki-moon, then United Nations Secretary-General, reminded us:

Longevity is a public health achievement, not a social or economic liability... let us pledge to ensure the well-being of older persons, and to enlist their meaningful participation in society so we can all benefit from their knowledge and ability. (World Health Organization 2012)

Ideally, no older person would come to harm as the result of a fall. We can help accomplish this if everyone including the older person and every service involved in the care of older people take every possible step to prevent falls and reduce harm from falls. The result would be a health service achievement, and a social and economic contribution.

Unfortunately, most people who injure themselves in falls do so in the community – at home or when out and about (De Raad 2012). To achieve a real difference requires a whole-of-health-system approach across primary care, aged residential care (ARC) and hospital care.

By adopting a population-health perspective as part of our 'duty of care' approach, we are committed to supporting older people in positive actions (such as active lifestyles and [appropriate exercise programmes](#) to 'stay on their feet'). Preventing falls and falls-related injuries in the community gives a [good return on investment](#) by reducing hospital admissions for falls-related injuries and admissions to ARC, while helping older people maintain their independence and quality of life (Robertson and Campbell 2012).

If we acknowledge falls are everyone's business, do you consider older people on the liability side of the ledger or falls prevention for older people as a worthwhile investment? ♦



What the 10 Topics cover

The 10 Topics in this series are:

- **Topic 1:** Falls in older people: the impacts
- **Topic 2:** Which older person is at risk of falling? Ask, assess and act
- **Topic 3:** Falls risk assessment: a multifactorial approach
- **Topic 4:** Addressing risk factors in an individualised care plan
- **Topic 5:** Safe environment and safe care are essential to prevent falls
- **Topic 6:** After a fall: what should happen?
- **Topic 7:** Why hip fracture prevention and care matter
- **Topic 8:** Medicines: balancing intended benefits and increased falls risk
- **Topic 9:** Improving strength and balance to prevent falls
- **Topic 10:** An integrated approach to falls in older people: what part can you play?

You can also find an evidence resource page with many of the key guidelines, systematic reviews, meta-analyses, and toolkits and guides [here](#).



How you can use Topic 1

Use Topic 1 as:

- an information resource that explains the evidence of, and rationale for, preventing older people from falling
- a 60-minute professional development exercise (see [60 minutes of professional development](#) in this resource).

Key messages in Topic 1

- Many more people are living longer in generally good health, yet the risk of falling increases with age.
- The burden that falls and falls-related injuries impose on an older person, their family/whānau, carer, health services and the national economy can be severe.
- By helping to prevent a significant proportion of these falls, we can reduce falls-related costs, the number of falls-related injuries (such as fractures and head injuries), and psychological impacts.
- The nationwide reducing harm from falls programme helped reduce the number of hip fractures in hospitals in 2013–16.
- Yet most hip fractures occur in the community – estimated at 30 hip fractures for every one hip fracture in a hospital setting. We need to try harder to help reduce harm from falls in older people, whether they are in ARC facilities, at home, or out and about.
- The 10 Topics in reducing harm from falls set out a systematic and evidence-based approach to both assessing risk and implementing care plans tailored to each older person. This approach aims to prevent harm from falls in all settings.

Key evidence sources for all 10 Topics can be found at the [evidence resource page](#).



What Topic 1 covers

Topic 1 outlines how a fall can be a life-changing event for an older person, impacting on their independence and wellbeing, with implications for their family/whānau and significant others. The burden that falls and falls-related fractures impose on an older person, their family/whānau, carer, health services and the national economy can be severe. It is possible to prevent a significant proportion of these falls. Topic 1 also introduces the remaining nine topics, which explain what interventions to put in place to prevent harm from falls.

In this first topic we'll set the scene for the [10 Topics](#), and explain why the national programme aimed to prevent falls and reduce harm from falls at [individual, health system and population levels](#) by encouraging the implementation of effective interventions. Overall, the Health Quality & Safety Commission (the Commission) works toward the New Zealand Triple Aim for health quality improvement, aiming for improved quality, safety and experience of care; improved health and equity for all population; and best value for public health system resources.

First we should explain reasons for the focus on 'older people' in this context.



Why we should make older people a priority

There are evidence-based and pragmatic reasons for making older people (generally those over 65) (Statistics New Zealand 2000; Woodhouse 2013) the priority in the national falls programme.

- Falls happen at all ages, but for older people, a high incidence of falls combines with: (1) high susceptibility to injury because of age-related physiological changes (such as slower protective reactions and loss of muscle mass); and (2) high prevalence of clinical conditions implicated in increasing risk of falling (such as postural hypotension) or risk of injury (such as osteoporosis) (Rubenstein 2006).
- Overall, studies of patient safety show that older people are much more at risk of adverse health events than the young and middle-aged (Leape et al 1991; Oliver 2012; Woodhouse 2013).
- Good evidence shows we can prevent older people from falling (Sherrington et al 2019; Hopewell et al 2018).

Why choose to focus on older people when people of all ages fall and sustain falls-related injuries?

... increasingly the story of patient safety in hospitals is in essence the story of older patients. (Oliver 2012)

Trends in improved health and more effective health care have seen an increase in the number of older people living longer. That group ranges from people who are generally healthy and active to people who are very frail or debilitated (Clegg et al 2013; Robertson and Campbell 2012). Given the increased number, more people will be at risk of falling and the burden of falls in our community is set to rise.

Although the incidence of falling increases with age, studies have found older people living in the community are 'unrealistically optimistic' about falling. A majority (88 percent) believe falls are a potential problem for their

age group, yet only a minority (37 percent) believe this risk applies to them (Dollard et al 2013). This view is despite many falls happening at home from standing height.

Older people living in ARC have even higher rates of falling and more serious falls-related injuries than older people living in the community, with 10–25 percent of falls resulting in fracture or laceration (Rubenstein 2006) and as many as 5 percent resulting in intracranial bleeding (de Wit et al 2020).

For older people admitted to hospital, the vulnerability of being unwell is increased by the unfamiliar environment and risks associated with treatment. Despite their right to safe care (Health and Disability Commissioner 2009), too many patients fall and suffer injuries when they are in our care. Falls are consistently one of the leading causes of serious injuries reported by hospitals to the Commission as **adverse events**. ♦



What the number of falls in older people tells us

Here is what the numbers tell us.

- Overall, around 30 percent of people aged 65 and over who live in the community will fall at least once a year. Most will not be seriously injured, but about 5 percent will have a fracture or require hospitalisation related to a fall.
- Each year about 4000 New Zealanders fall and **break a hip**.
- Thirteen percent of residents in New Zealand aged care facilities had a fall in the previous 30 days, and 55 percent had a fall-related physical injury (Carrier et al 2017).
- Falls account for 74 percent of trauma admissions in older people. Of these, 4 percent result in the person dying (Fairfax et al 2015).
- Falls and injury rates rise with age and the figures double for people aged over 75 who live in the community (Bergen 2016; Rubenstein 2006).
- In one New Zealand study of Māori over 80 and non-Māori over 85, 37 percent of people reported a fall in the preceding year, and 7 percent of those had four or more falls. Of the people who fell, 35 percent were injured and 10 percent sustained a fracture (LiLACS NZ 2014).
- Falls also occur in hospital. For example, one study noted a fall rate after surgery of 0.8–16/1000 person days, and 5–20 percent of these falls resulted in the person being severely injured (Kronzer et al 2016).
- Overall, the vast majority of falls occur in the community – estimated at 30 falls for every one fall in hospital (Accreditation Canada et al 2014; Jones et al 2016). ♦



Reducing harm from falls in New Zealand

A national programme, reducing harm from falls (2013–15), saw the Commission (as the lead agency) partnering with the ACC and other stakeholders across the health sector. The programme implemented quality and safety markers as a way to help drive change by giving providers feedback about the uptake of two care processes known to be effective in preventing falls: risk assessment and care planning.

Over three years this programme to target inpatient falls saw a nationwide reduction in hip fractures resulting from falls occurring in hospital – from 12 per 100,000 admissions to 8 per 100,000 admissions (Jones et al 2016). Following this success, the Ministry of Health's Healthy Ageing Strategy (2016) also called on hospitals to continue to improve their strategies to reduce the number of falls and harm from falls. Those strategies include using data to identify older people at risk and improving the quality of care for those admitted due to falls and fractures.

The success of the reducing harm from falls programme in reducing inpatient hip fractures shows it's possible to coordinate national-level interventions. But this early success notwithstanding, the overall evidence more strongly supports community interventions than those in hospitals and care facilities. In the community is also where more than 95 percent of falls occur. The 10 Topics elaborate on this evidence base and a range of clinical guidelines and standards, toolkits and guides are detailed in the **reducing harm from falls evidence base**.

Additionally, the Live Stronger for Longer initiative, supported by ACC and the Commission, is now in place and resources can be ordered, downloaded or shared online by visiting the website www.livestronger.org.nz. ♦



How to identify risk factors and hazards

Falls in older people are often categorised as being an ‘accident’ caused by an identified hazard in the environment, according to a review of studies looking at causes (Rubenstein 2006).

Yet the interaction between the hazard and the person’s accumulated age-related changes in functioning and disease processes causes the fall, not the hazard by itself. For instance, age-related vision, hearing or memory impairments increase the potential for tripping, slipping or stumbling. And an older person’s balance-correcting strategies are less effective or not effective in regaining balance (Rubenstein 2006).

We can improve both sides of this interaction: we can **remove or minimise environmental hazards**, and actively manage or support many **age-related impairments and conditions** to reduce an older person’s risk of falling (Miake-Lye et al 2013; Rubenstein 2006).

A review of controlled studies identified the following important **risk factors** for falls:

- muscle weakness
- deficits in balance, gait and vision
- limited mobility
- impairments in cognition and functional status
- postural hypotension (Robertson and Campbell 2012).

A fall is often the result of interactions between [person]-specific risk factors and the physical environment. (Miake-Lye et al 2013)

Other risk factors consistently found to increase the risk of falling include:

- the use of psychoactive medications
- the use of multiple medications (polypharmacy)
- depression
- dizziness
- limitations to activities of daily living
- arthritis
- diabetes mellitus
- urinary incontinence (Delbaere et al 2010)
- chronic pain.

An older person may have just one risk factor. Yet, as the above risk factors show, it’s quite likely that a person’s risk profile may have several interrelated factors (such as muscle weakness and impaired mobility) that compound their risk of falling. At the same time, an older person’s health or treatment profile may also reveal factors such as osteoporosis or anticoagulant therapy that increase the possibility of harm should they fall. ♦



Why two specific risk factors are important

Two important risk factors for falls and falls outcomes deserve special mention: frailty and cognitive impairment.

Risk factor 1: Frailty

Frailty is a key risk factor for falls (Hubbard et al 2015). In the first systematic review of studies examining **frailty as a predictor of falls in the community**, results pooled from 11 studies (incorporating 68,723 individuals) showed that frailty (assessed using a variety of methods) predicts an increased risk of falls (Kojima 2015). Frail people or those

Why not reduce the number of falls-related hospital admissions by helping older people ‘stay on their feet’?

nearing frailty were 1.84 times more likely to fall. This underscores the need to assess for frailty and provide falls prevention interventions tailored to each frail older person. A key goal of the 2016 [Healthy Ageing Strategy](#) is to slow or stop older people progressing toward frailty (Associate Minister of Health 2016). A [position statement](#) from the Australian and New Zealand Society for Geriatric Medicine offers guidance on identifying and managing frailty (Hubbard et al 2015), and the Commission has published a range of [frailty care guides](#) to assist with care of the frail elderly.

Risk factor 2: Cognitive impairment

Injury is the most common reason why people with dementia are admitted to hospital. Of hospitalised patients who suffer from dementia, 90 percent are hospitalised because they have fallen (Harvey et al 2016). An Australian study found that, compared with people without dementia, people with dementia are 4.3 times less likely to receive rehabilitation while in hospital. However, when the person does receive rehabilitation they achieve significant motor functional gain after being discharged from hospital (Harvey et al 2016).

We should not view cognitive impairment as a barrier to falls prevention interventions for older people. A report on [interventions for reducing harm from falls in those with cognitive impairment](#) explains how. Individuals with cognitive impairment respond to many of the falls prevention strategies that those without cognitive impairment undertake. Often intervention actions just require close supervision and care. For example, a [systematic review](#) concluded that long-term exercise programmes reduce the number of falls in older people with cognitive impairment (Lewis et al 2017). Many of the same guideline-based fall and fracture prevention interventions apply to this group of people who have an even higher risk of falling.

We know that health professionals and carers vary in their ability to meet the needs of people with cognitive impairment and dementia, there are knowledge gaps, and additional training may be required (Bamford et al 2018; Francis-Coad et al 2019). [Close care with dignity](#) is important. Both frailty and cognitive impairment are discussed in more detail in the other nine topics. ♦



What are the impacts when an older person falls?

Impact 1: Fractures and head injuries

The most serious injuries resulting from falls are fractures and head injuries (Miu et al 2016).

Falls account for 85 percent of traumatic brain injury in elderly trauma patients. Mortality from these injuries increases with age (Hawley et al 2017); if a person is taking oral anticoagulants, the mortality doubles (due to the increased risk of bleeding) (Inui et al 2014). The incidence of intracranial bleeding after a ground-level fall in the older population may be as high as 5 percent (de Wit et al 2020).

Hip fracture is the most common fracture after age 75 and has serious implications (Rubenstein 2006). Outcomes following hip fracture have a high impact on independence – and implications for families/whānau. Half of all patients with a hip fracture will need ongoing support with daily living or getting and keeping mobile (Osteoporosis New Zealand 2012). The Australian and New Zealand Hip Fracture Registry indicates that 10 percent of those who fractured their hip in New Zealand had died within 120 days, of survivors only 79 percent had returned to their private residence, and only 21 percent had returned to their pre-fracture level of mobility (ANZHFR 2019).

Impact 2: Psychological harm and fear

Even without physical injury, a fall can create a loss of confidence and anxiety in the person and their family/whānau or caregiver. Fear of falling can create a downward spiral in which physical and social activities are restricted unnecessarily. This can lead the person to avoid activity, become physically deconditioned, suffer increased frailty and become psychologically distressed, depressed and isolated – all leading to a poorer quality of life (Delbaere et al 2010; Faes et al 2010).

The psychological impact of falling includes fear and anxiety – and even post-traumatic stress disorder – in the older frail who fall at home (Bloch 2017). Fear of falling affects more than 50 percent of older people in long-term care, and is associated with falls, functional impairments, depression and poor quality of life (Lach and Parsons 2013). Fear of falling is seen in 3–85 percent of older people living in the community who fall and up to 50 percent of older people who have never fallen (Parry et al 2016; Shoene et al 2019). Social support does not compensate for the negative impact when the older person's fall causes them to reduce or stop participating socially. An older person's fall affects not just their mobility, but body image, mental health and capacity to participate (Ehlers et al 2018). The importance of preventing falls is clear.

Impact 3: Costs

Falls have direct costs for the initial treatment of falls-related injuries and longer-term costs such as residential care. Further cost is incurred as older people typically take longer to recover, with inactivity and loss of condition contributing to an increased risk of further falls (Delbaere et al 2010; Rubenstein 2006).

More than 25,000 people across Australia and New Zealand break their hip each year, with the cost to the economy approximately \$1 billion annually (ANZHFR 2019).

An evaluation of the reducing harm from falls programme conducted in 2016 reported that it helped to prevent an estimated 67 fractured hips in hospitals over three years, saving \$2.8 million in total avoidable costs (Appleton-Dyer et al 2016). Given that about 30 times more falls occur in the community than in hospital (Accreditation Canada et al 2014; Jones et al 2016), there is great scope for scalability of these savings as we extend falls prevention successes outside hospitals. Economic evaluations indicate that a range of falls prevention strategies are cost-effective in New Zealand (and sometimes cost-saving), these include strength and balance exercise programmes (Deverall et al 2017), home safety assessment and modification (Pega et al 2016), and expedited cataract surgery (Boyd et al 2019). ♦



Psychological impact on patients: a patient's story

Betty is a 93-year-old woman with a history of falling. Her daughter Barbara talks about what happened when avoidable environmental factors (a cluttered toilet space) interacted with her mother's risk factor of impaired mobility (for which she was using a walker) to cause a fall. Barbara talks about the impacts for her mother and the family. You can read a summary or watch the video (2 minutes 1 second) of [Barbara talking about her mother's fall](#).



TRANSCRIPT



VIDEO



Psychological impact on staff: a health professional's story

Patient falls also affect staff and health services. Health professionals often feel a sense of dismay and failure when a patient is harmed in a fall, not least because they are aware of the possible outcomes for the patient and the patient's family.

You can read a transcript or watch the video (1 minute 22 seconds) of [health professionals talking about patient falls](#).



TRANSCRIPT



VIDEO

What a duty of care means in practice

Although all health care carries some risk, the proportion of admissions associated with an adverse event while in hospital in New Zealand is unacceptably high – estimated at 12.9 percent (Davis et al 2002). And while a ‘duty of care’ means that managers, professionals, caregivers and other support workers want to make **safe environments and safe care** a priority, we can involve patients, and families/whānau, in learning how to reduce the older person’s risk of falling while in hospital or when they are discharged from hospital.

Resources that outline some simple safety practices for older people are available here:

- [Falls hurt: patient information](#)
- [\(ACC\) Staying safe in your home.](#)

We recommend these leaflets to you as a reminder about the basics of living and working in a safe environment. More importantly, you can use the two educational resources with your patients to help keep them safe in the hospital environment and at home after discharge. The checklists in the leaflets enable you to work through **relevant risk factors** and **actions** with your patient and their family/whānau.

Additionally, strength and balance exercise is proven to reduce falls and may be the only measure some older people living in the community need. You can encourage older people to **find a strength and balance exercise programme** near them. Finally, consumer feedback has taught us that it is important to ensure that the older person, their carers and/or family and whānau understand the reasons why falls need to be avoided, why the interventions are important and what the evidence base means. ♦

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 five required readings, then assess your learning with the **10 self-test questions**.

Learning objectives

Reading and reflecting on Topic 1 and the materials in this teaching and learning package will enable you to:

- outline why we should make the topic of older people falling a priority
- describe possible impacts and outcomes when older people fall
- review a fall incident in relation to hazards in the physical environment or risk factors specific to a particular person
- explore what ‘a duty of care’ means in relation to older people who fall.

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 five readings will help you form evidence-informed perspectives about the impact of falls on older people.

1. [Reducing harm from falls in hospital: the facts](#)
2. [Reducing Harm from Falls \(New Zealand Medical Journal article\)](#)
3. [Patient story, staff perspective](#)
4. [\(ACC\) Staying safe in your home](#)
5. [Falling costs: the case for investment \(summary\)](#) ♦



+30
MINUTES

+30 MINUTES OF RECOMMENDED VIEWING

These two audiovisuals are relevant to many of the 10 Topics, but are recommended as a good overview with Topic 1 being an introduction. Viewing them will help you relate evidence and best practice to real-life initiatives.

If you watch the video 'Preventing falls in hospital', you don't need to click through for the patient's story or the health professional's story, as both items are extracted from that video.

1. Preventing falls in hospitals (2 versions):
 - [Short summary version](#) (7 minutes 50 seconds)
 - [Full-length version](#) (13 minutes 30 seconds)
 2. [Staying safe on your feet at home](#) (12 minutes 26 seconds) ◆
-

10 QUESTIONS

TOPIC 1 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

1	Reasons why the national falls programme included a focus on falls in older people are: the incidence of falling increases with age an older person is highly susceptible to injury an older person typically takes longer to recover from a falls-related injury fear of falling can create a downward spiral for an older person all of the above	ANSWER
2	The infographic 'Harm from Falls' notes the cost of a hip fracture that results in a three-week stay in hospital as: \$13,500.00 \$26,000.00 \$47,000.00	
3	The percentage of admissions associated with an adverse event while in hospital in New Zealand is estimated at: 9.2 percent 12.9 percent 19.2 percent	

ASSESS the processes used for assessing the impact of all on older people in your setting

4	Read the Code of Health and Disability Services Consumers' Rights. Which of the 10 Rights of Consumers and Duties of Providers do you think best expresses a patient's right to safe care?	ASSESS
5	If asked to explain the term 'duty of care' in your own words, what would you say? Give an example of your usual practice of putting your understanding of a 'duty of care' into action. Use an example from your last week at work.	
6	Think about an older person or patient you know. Think about a fall that person has experienced. Assess how this idea explains their fall: A fall is often the result of interactions between [person/patient]-specific risk factors and the physical environment. Outline how you think their fall is best explained. Their fall is best explained by: factors related to the patient factors related to the environment an interaction between patient and environment factors Why did you choose one or more of those factors?	
7	Examining that specific fall with the benefit of hindsight, what environmental hazards or specific risk factors could have been considered earlier? 1. 2. 3. 4. 5.	

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

8	My first learning/insight is: I will apply it in practice by:	APPLY
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:	

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