

TOPIC 10



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

An integrated approach to falls in older people: what part can you play?

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How you can use **Topic 10**

Use Topic 10 as:

- an information resource that explains the evidence and rationale for a whole-of-system, integrated approach to reducing harm from falls
- a 60-minute professional development exercise (see [60 minutes of professional development](#) in this resource).

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Key messages in Topic 10

- There are effective interventions for preventing falls and reducing harm from falls in older people. These are best implemented by taking a whole-of-system, integrated approach for falls prevention and treatment.
- We can target subgroups of older New Zealanders for evidence-based interventions, including home or community-based strength and balance exercise programmes, home safety assessment and modifications, and high-cost treatment and rehabilitation (such as orthogeriatric care after a hip fracture).
- The number of people in New Zealand aged over 80 will triple by 2050. The same is true of the number of people living with dementia. These are the groups who fall most frequently.
- Integrated care coordinates services around the needs and goals of older people, their families/whānau and other carers.
- The expert advisory group for the national falls programme identified 10 priorities encompassing evidence-based programme components, service delivery and requisite leadership actions, which provide a foundation for integrated care.
- Evidence-based care pathways support integrated care – these are tools that map out the care and support for a defined patient group over a defined period.
- Everyone working with older people can take actions that are manageable and aligned with their current work responsibilities. You will find opportunities requiring practical problem-solving and small-scale improvements at all levels of the system.



What Topic 10 covers

Increased longevity can be acknowledged as a public health achievement, but it is equally important to address the challenge of adding quality 'life to years'. This includes reducing the impact that falls and resulting injuries have on wellbeing, coping and independence. Since the evidence for effective programmes to prevent falls is well established, the next step is wider implementation of this evidence. In this topic, the last of the **10 Topics**, we ask you to look at what you can do within your sphere of influence and networks to use the evidence to improve practice and service provision to reduce harm from falls.

Supporting Topic 10's themes – coordinated care, patient experience and quality of care – are two required readings that make this a learning activity you can do within professional development hours. The first required reading looks at the **meaning of person-centred care for people with multiple health problems**. The second required reading conveys **practical wisdom you can use for projects to improve the quality of health care**, and are examples taken from real life.



What we are trying to achieve

Falls are the leading cause of injury for older people, and account for half of all health lost due to injury (both years lived with disability and early death) (Ministry of Health 2013). **Falls in older people impact at every level** – from the older person and their family/whānau to government spending in health and community-based services (De Raad 2012).

According to the World Health Organization, programmes to prevent falls are effective when they reduce the:

- **risk of falling** or the number of individuals who fall – measured as whether a person has any falls (or no falls) within a defined period of time
- **rate of falls** or the total number of falls in a particular time period (one person may not fall at all and another may fall more than once) measured as, for example, falls per person/year or falls per 1000 bed-days.

Reducing the risk of falling and rate of falls will reduce falls-related injuries. Effective programmes also seek to reduce the **severity of falls-related injuries** (World Health Organization 2012).

The intent of our national **Reducing Harm from Falls** programme goes beyond preventing falls and reducing severity of injuries. It also encompasses the clinical care and wider support that **promote the best possible outcomes** for people who have suffered harm related to a fall.



Why we need a whole-of-system approach

Changes in demographics within New Zealand mean we need to adopt a framework of integrated health care services. This framework requires approaches, determined effort and partnership between stakeholders. The Ministry of Health's **New Zealand Health Strategy 2016** emphasises care that is 'closer to home' achieved through an integrated system.

How the population is changing

The proportion of the New Zealand population aged over 60 years will increase from 18 percent in 2010 to 22 percent by 2020, and almost 29 percent by 2050. The proportion of the population aged over 80 years (those who fall most frequently) will more than triple to over 500,000 people by 2050 (United Nations 2013).

WHY WE NEED A WHOLE-OF-SYSTEM APPROACH *Continued*

Over the same period the **number of people living with dementia** will nearly triple. This is a group in which the rate of falls is nearly twice as high as the general older population.

Dementia (absolute numbers)

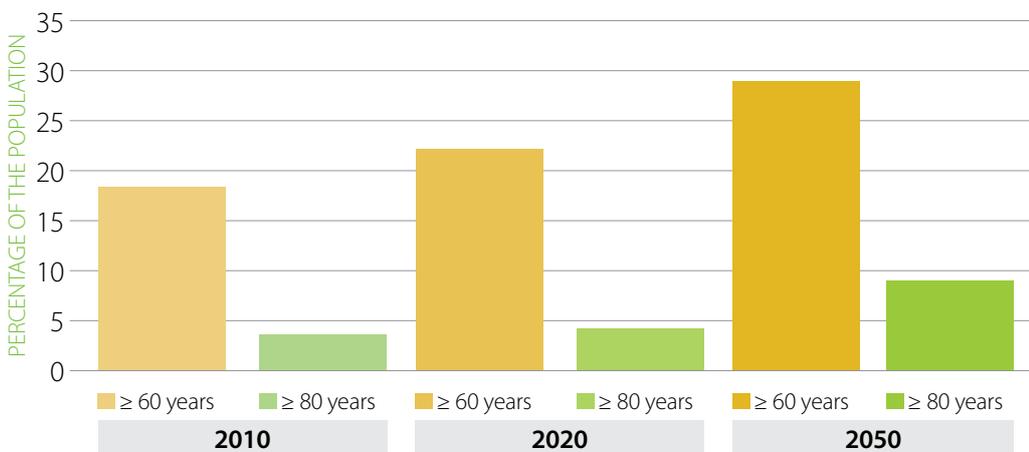
2011 | **50,000** NZers living with dementia

2016 | **60,000** NZers living with dementia

2050 | **170,000** NZers living with dementia

Source: Deloitte 2017

Ageing of the population of New Zealand for 2010–50



Source: United Nations 2013

How the Triple Aim framework helps us provide sustainable, integrated health care

The **Triple Aim** has been widely adopted as a framework for designing sustainable and integrated health care services that are intended to be people-centred, equitable, accessible, safe, effective and efficient (Institute of Medicine 2001; Ministry of Health 2003). Three simultaneous and interdependent aims need to be balanced:

- improved quality of health care and improved experience of patients
- better overall health of a defined population
- cost-effectiveness in service provision (Berwick et al 2008).

A whole-of-system approach is needed for the population of concern – **older people**. The health status of the people in this group range from generally healthy and active, to frail or living with complex chronic conditions or dementia, to nearing the end of life (Clegg et al 2013; Inouye et al 2007). From a falls-prevention perspective, subgroups of this group can be targeted for interventions. Such interventions include **home or community-based strength and balance exercise programmes, home safety assessment and modifications** and high-cost treatment and rehabilitation (such as **orthogeriatric care after a hip fracture**).



What an integrated approach means

Integrated care is seen as critical to supporting older people so they can live safely and independently at home, by helping them avoid admission to hospital and recover after being discharged from hospital. The Minister of Health has identified 'continued integration of health care in order to better prevent and manage long-term conditions' as a key factor (Coleman 2016).

Unconnected and fragmented services impact negatively on patient outcomes and experience of care, while integrated care coordinates services around the needs and **goals** of the older person, their family/whānau and other carers (Goodwin et al 2012).

Integration across the system and organisations happens at several levels and/or dimensions, including:

- clinical and service integration, when care and support are planned and delivered to a patient and their family/whānau, including the support that promotes self-care and independence (micro level)
- organisational and professional integration through networks, alliances and partnerships (meso or middle level)
- systems integration, both vertically within the health sector for disease-based specialisation, and horizontally across sectors (macro integration)
- communications and IT (functional integration) and shared values and commitment (normative integration), to ensure connectivity between all levels (Valentijn et al 2013).

The King's Fund is an English health charity that shapes health care and social care policy and practice within England's National Health Service. Evidence from that fund shows successful approaches to achieving coordinated care in the community. You'll find one of their useful reports [here](#) (Goodwin et al 2013).

... those involved with planning and providing services must impose the user's perspective as the organising principle of service delivery (Goodwin et al 2012)



How we can set a direction for preventing falls

The first focus of New Zealand's national falls programme was to reduce harm from falls by older people in care settings. This focus will be an enduring concern of the programme, as falls are high-harm **adverse events**. In hospitals, aged residential care and care at home, a 'duty of care' means **giving attention to an individual's risk factors for falling** and **acting to address modifiable factors**, and **ensuring a safe care environment**.

A longer-term strategy aimed at preventing falls is required to make the system sustainable. The 'challenge now is to deliver the most effective interventions efficiently at a population level, and for these interventions to be taken up by older people' (Day et al 2011). The **expert advisory group** for the national falls programme identified 10 priorities encompassing evidence-based programme components, service delivery and requisite leadership actions. This list is not all-encompassing, and some priorities will be more or less important depending on local context and programme development. One example of how local planning identifies priorities in a particular context can be seen [here](#). The following table is a guide to many of the priorities of an integrated approach.

HOW WE CAN SET A DIRECTION FOR PREVENTING FALLS *Continued*

10 priorities in an integrated approach

EFFECTIVE PROGRAMME COMPONENTS

- 1 Exercise programmes reduce falls and falls-related injuries of older people living in the community. Effective programmes typically include balance retraining and lower-limb strengthening exercises (Gillespie et al 2012). A range of programmes caters to different levels of physical function and personal preferences. More in [Topic 9: Improving balance and strength to prevent falls](#).
- 2 **Multifactorial risk assessment and interventions** are recommended for patients at risk of falling; and they reduce the rate of falls by inpatients (Cameron et al 2010) and by older people living in the community (Gillespie et al 2012). More in [Topic 3: Falls risk assessment: a multifactorial approach](#) and [Topic 4: Addressing risk factors in an individualised care plan](#).
- 3 **Home safety assessment and modifications** reduce the rate of falls and risk of falls, being more effective for those at higher risk of falling and when delivered by an occupational therapist (Gillespie et al 2012). More about environmental interventions in [Topic 5: Safe environment and safe care are essential to prevent falls](#).
- 4 **Medicine use review** to target and modify the use of medicines (especially psychotropics) that increase the risk of falling helps to reduce the rate of falls (Blalock et al 2010; Gillespie et al 2012). Prescribing vitamin D supplementation for any older person who is at risk of vitamin D deficiency/insufficiency may reduce the likelihood, and number, of falls. More in [Topic 8: Medicines: balancing intended benefits and increased falls risk](#).

SERVICE DELIVERY

- 5 Locally developed **integrated falls pathway and referral processes**, in which 'any door is the right door' for assessing the risk of a fall and referring the person for appropriate interventions (Ganz et al 2008).
- 6 Systematic approaches to **assessment of bone health and fracture risk** and appropriate interventions for primary and secondary prevention of fragility fractures; and improvement of **fracture care and recovery**. [Topic 7: Why hip fracture prevention and care matter](#) explains the importance of fracture liaison services and the Australian and New Zealand Hip Fracture Registry's guidelines and clinical care standards.
- 7 For older people identified as frail, [comprehensive geriatric assessment](#) is a key to [safe, compassionate integrated care](#) in primary, long-term care and [acute settings](#), especially for those with problems that contribute to the risk of falling, such as [impaired mobility](#) and [dementia](#) (Clegg et al 2013; Taylor et al 2012).

LEADERSHIP ACTIONS

- 8 **Keep falls on the agenda as everyone's business**. The causes of falls by older people are complex. We should not be surprised that improving service is complex and will take sustained effort, attention and leadership (Oliver et al 2010). Using [patient stories](#) at all levels is a powerful reminder and motivator.
- 9 Ensure systems and processes are in place to **collect, monitor and analyse data** related to falls-prevention measures and falls incidents. Provide **meaningful feedback** to everyone involved so as to promote learning and show where practice can be improved.
- 10 Ensure **system capacity and capability** for quality improvement and innovative practice for preventing falls. Both evidence-based and experience-based falls prevention practices require changes in behaviour and new competencies for staff, as well as change management to support organisational and system change (Fixsen et al 2011). [Networks](#) can be energising, build resilience and spread knowledge and learning (Mountford and Marshall 2013). Investment is needed as well as a whole-of-system integrated approach.

HOW WE CAN SET A DIRECTION FOR PREVENTING FALLS *Continued*

Why care pathways are important for integration

Supporting integrated care are evidence-based care pathways – tools that map out the care and support for a defined patient group over a defined period. Care pathways are mechanisms to get ‘the right people, doing the right things, in the right order, at the right time, in the right place, with the right outcome’ (Allen et al 2009). Care pathways help all staff understand their specific responsibilities and help consumers navigate the system.

Evidence-based guidance for care pathways related to reducing harm from falls includes:

- Osteoporosis New Zealand: [Guidance for Diagnosis and Management of Osteoporosis](#)
- Australian and New Zealand Hip Fracture Registry: [Guideline for Hip Fracture Care](#)
- Health Quality & Safety Commission: [Stay Independent Falls Toolkit Algorithm](#).

Since the journey is the patient’s, an evidence-based pathway is a guide rather than a schedule: shared decision-making is the process to determine what is right for the patient and their situation (Greenhalgh et al 2014; Jones 2012; Reuben and Tinetti 2012).

Why involving older people in co-design/partnership is critical

Any falls prevention programme or service that an older person and their family/whānau are likely to take up must be available, accessible and affordable.

Answering the question of how to make falls prevention an acceptable and relevant topic for an older person to consider requires communicating with that older person. As such, the question also presents an opportunity to work as **partners in care** (Armstrong et al 2013). It is also an opportunity to **integrate user experience and evidence-based approaches**.

How can health professionals make older people aware of their potential risk of falling without causing distress or denial of a problem? (Child et al 2012)



How you can play your part

Planning and provision of health and social care services cannot ignore three inter-related trends and their implications:

- demographic shifts to a higher proportion of older people
- a high incidence of falls by older people
- policies promoting ageing in the community (Edwards 2011).

Rather than thinking the task is too large to tackle, you would be better to find one action that’s manageable and aligns with your current work responsibilities. You will find opportunities requiring practical problem-solving and small-scale improvements at all levels. Solving these problems and making these improvements represent the ‘small wins’ that build to deliver changed practices, processes and systems (Weick 1984). Making older people’s needs the focus of any project motivates those involved, and also recruits the wider involvement of all services involved in the health of older people (Reuben and Tinetti 2012).

For every one hip fracture in hospital, an estimated 30 occur in the community (Accreditation Canada et al 2014; Jones et al 2016), so keeping a clear focus on falls that happen in the community is vital.

Local work on an integrated approach has brought together hospital services, aged residential care, primary care, home support services, pharmacies, emergency responders and community groups. Shared access to patient records and communications such as notifications and discharge letters helps health professionals respond appropriately when an older person has a fall in another setting, or there are risk factors that can be followed up. For example, ambulance services are exploring ways to communicate or refer patients they may have assisted

HOW YOU CAN PLAY YOUR PART *Continued*

after a fall at home. Information systems are being used by fracture liaison service coordinators to screen patients discharged from hospitals or emergency departments, for injury type and co-morbidities.

These more networked ways of working help overcome the opportunities lost when neither older people nor health professionals mention falls (Lee et al 2016).



What taking action means

Taking action has some vital components: evidence and experience; complexity, clarity and context; and connection and community.

Evidence and experience

Evidence as to *what* will work to reduce injury and premature death related to falls must inform action, so that effort and resources are applied to those areas where effectiveness is proven. At the same time, attention must be given to the *how* of **successful implementation** to close the ‘science to service’ gap (Dixon-Woods et al 2012; Greenhalgh et al 2014; Marshall et al 2013; Reuben and Tinetti 2012). Asking **‘What is everyone learning?’** (Berwick 2008) can bring practical wisdom and insights to a shared dialogue (Marshall et al 2013).

An extensive international literature – reporting effective evidence-based interventions – is summarised in **systematic reviews, clinical guidelines and setting-specific resources**. The evidence-based interRAI assessment tools are used throughout New Zealand in **residential care** and to coordinate home-based services.

Written for New Zealand, the **10 Topics in reducing harm from falls** have presented a collection of current evidence and best-practice resources across important themes in an accessible format. A **summary of evidence for investment in effective strategies** argues that community-based programmes represent value for money by preventing the largest number of falls and fall-related injuries.

An article summarising the national Reducing Harm from Falls programme was published in the *New Zealand Medical Journal* in 2016. The authors identify the value of: raising awareness, interest and engagement; the provision of knowledge, resources and tools; and influencing attitudes towards culture and behaviour change. These factors, coupled with robust measurement are important components of an integrated approach. We should take every opportunity to provide appropriate individualised care, and act to provide joined-up care in an integrated system (Jones et al 2016).

Complexity, clarity and context

Complexity in the causes of falls (often an interaction between **person-specific risk factors** and **factors in the environment**) means a number of actions or a mix of programme components is needed (Day et al 2011; Jones 2012). The importance of having ‘theory of change’ is underscored in **this analysis of the New Zealand Reducing Harm from Falls programme**. Local leadership and critical thinking are needed to develop a ‘theory’ of which components of care will be effective in a local setting and why, and in a particular situation and why. Understanding **the logic of how and why change will come about** ensures actions or programme components are appropriate, and avoids the risk of ‘doing what everyone else is doing’ without regard for context (Shojania and Grimshaw 2005; Taylor et al 2011). For instance, in the hospital setting, implementing a ‘bundle’ or ‘set menu’ of care practices will not reduce falls (Barker et al 2016; Healey 2016). Local learning looks to baseline data on falls and injuries to confirm the scope for improvement and to highlight priorities, while repeat measures show whether and how the planned actions have made a difference.

WHAT TAKING ACTION MEANS *Continued*

Outcomes frameworks can be a valuable component in enhancing integrated care. A number of frameworks that impact on falls prevention and management, and influence action at different levels, exist or in development; some of them are identified below.

Using (or sharing) quality and safety markers was considered one of the factors that helped the Commission's Reducing Harm From Falls programme produce a positive impact in hospital settings.

The Atlas of Healthcare Variation is a quick and easy way for organisations to track their behaviour against the rest of New Zealand. Opportunities exist to design initiatives that improve integration and measure benefits.

At a 'whole-of-system level', a national outcomes framework for falls and fracture management in New Zealand is being developed so outcomes that matter to older New Zealanders and their families/whānau are measured and achieved. This is the result of central agencies' (the Accident Compensation Corporation, the Ministry of Health and the Health Quality & Safety Commission) partnership with the sector. The framework outlines key domains and supporting indicators that will ensure delivery of consistent and reliable outcomes. It sits under the Live Stronger for Longer banner and will be published quarterly from late 2017.

Connection and community

Defining a 'population of concern' makes it clear which agencies, providers and groups are the stakeholders responsible for connected and collective action (Jones 2012; Valentijn et al 2013).

Social processes have been identified as key to the success (or otherwise) of integrated care, care pathways, quality improvement and change management (Goodwin et al 2012; Taylor et al 2012).

Key to thinking differently about funding and how best to allocate resources are local networks where stakeholders work in partnership, united by a common goal and shared commitment to reducing harm when older people fall.

The national Reducing Harm from Falls programme commends the great work being done at many levels across New Zealand/Aotearoa. Please share your success stories and your struggles. The 10 Topics are designed to support your local and regional projects by providing expert advice and a set of evidence-based resources you can use as core components in your programmes.

It takes a village of stakeholders working together to prevent falls and reduce fall risk, tasks that no one stakeholder can accomplish alone (Valentijn et al 2013)



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 10 and the materials in this teaching and learning package will enable you to:

- define the specific ‘population of concern’ for preventing falls and reducing harm from falls relevant to your role and responsibilities
- describe key features of an integrated approach to health care
- identify reasons relevant to preventing falls that health care providers and consumers can use when planning a programme and deciding what services to provide
- review priorities in falls prevention and in what actions to take or support in your own service.

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 integrated approaches to health care.

1. Reuben DB, Tinetti ME. 2012. Goal-oriented patient care – an alternative health outcomes paradigm. *New England Journal of Medicine* 366(9): 777–9 via [webpage](#) or [pdf](#).
2. Dixon-Woods M, McNicol S, Martin G. 2012. Ten challenges in improving quality in healthcare: lessons from the Health Foundation’s programme evaluations and relevant literature. *BMJ Quality & Safety* (21): 878–84 via [webpage](#) or [pdf](#).

RECOMMENDED READING AND OTHER RESOURCES

For implementing falls prevention programmes

Recommended evidence-based resources

[How and why is change likely to come about?](#)

On integrated care for older people

The National Health Service in England provides practical guidance on using an integrated care pathway for the safe, compassionate care of frail older people: see the [webpage](#) or [pdf](#).

At the King's Fund, New Zealand providers feature in [international case studies](#) and a [case study](#) on the 'Canterbury tale'.

The video [Staying safe on your feet at home](#) (12 minutes 26 seconds) describes a coordinated falls prevention programme, part of a larger Canterbury initiative.

Supporting quality improvement and practice development

Putting patient experience at the centre:

- a [patient stories project](#) undertaken by Hutt Valley District Health Board has a presentation and toolkit
- resources on experience-based co-design can be found [here](#).

The Health Foundation has [effective networks for improvement](#), [spreading improvement ideas](#) and [five questions to improve safety](#).

The sustainable improvement team for the National Health Service in England has a white paper: [The new era of thinking and practice in change and transformation: a call to action for leaders of health and care](#).

10 QUESTIONS

TOPIC 10 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	In terms of an integrated system, at which level and/or in which dimensions are your role and responsibilities? <i>(select as many as apply)</i> micro meso macro functional normative	ANSWER
2	The required reading 'Goal-oriented patient care' argues that quality of care is: <i>(select one)</i> a straightforward concept that needs only be measured by condition-specific indicators and overall mortality a complex concept that takes into account how well a patient's preferred outcomes have been met	
3	In the required reading 'Ten challenges in improving quality in healthcare', which of these themes is not one of the 10 themes in the findings (pp 879–82)? <i>(select one)</i> use data to confirm there is a real problem that requires stakeholders to act set an ambitious transformational goal so there is room to move if the goal proves unattainable ensure the improvement effort is matched by the capacity, capability and resourcing it will need	

ASSESS the extent to which services are integrated to prevent older people falling and to reduce harm related to a fall

4	Think of an older person you know who has had a fall and an injury that required hospitalisation. This may be someone personally important to you, or a patient/resident/client in your care, or a patient story from the falls programme (Betty or Hazel and Gordon). Did this person have any risk factors for falling? the person had no risk factors the person had risk factors. Describe the risk factors:	ASSESS
5	From your perspective, what were the key features in that person's story (patient journey)?	
6	Now, change the story's key features, this time starting from one or two years before the person fell. What would their journey be like if an integrated system was in place and working as well as it could? (Refer to the effective programme components in the 10 priorities as a starting point in thinking about what could have produced a better experience and outcome for this person.)	
7	Compare the two stories. What are the points for action? (Refer to the 10 priorities and add any others.)	

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

8	Think about your sphere of influence in your work role. What actions can you take to improve the journey for older people in a situation similar to that described in question 4 above? I will take these actions:	APPLY
9	Who are the best people for you to connect with to take these actions aimed at preventing falls and reducing harm related to a fall? The best people are:	
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:	

REFERENCES

- Accreditation Canada, Canadian Institute for Health Information, and Canadian Patient Safety Institute. 2014. *Preventing Falls: From Evidence to Improvement in Canadian Health Care*. Ottawa: CIHI.
- Allen D, Gillen E, Rixson L. 2009. Systematic review of the effectiveness of integrated care pathways: what works, for whom, in which circumstances? *International Journal of Evidence-Based Healthcare* 7(2): 61–74.
- Armstrong N, Herbert G, Aveling EL, et al. 2013. Optimizing patient involvement in quality improvement. *Health Expectations* 16(3): e36–e47.
- Barker AL, Morello RT, Wolfe R, et al. 2016. 6-PACK programme to decrease fall injuries in acute hospitals: cluster randomised controlled trial. *British Medical Journal* 352: h6781.
- Berwick DM. 2008. The science of improvement. *Journal of the American Medical Association* 299(10): 1182–4.
- Berwick DM, Nolan TW, Whittington J. 2008. The triple aim: care, health, and cost. *Health Affairs* 27(3): 759–69.
- Blalock SJ, Casteel C, Roth MT, et al. 2010. Impact of enhanced pharmacologic care on the prevention of falls: a randomized controlled trial. *The American Journal of Geriatric Pharmacotherapy* 8(5): 428–40.
- Cameron ID, Murray GR, Gillespie LD, et al. 2010. Interventions for preventing falls in older people in nursing care facilities and hospitals. *The Cochrane Library*.
- Child S, Goodwin V, Garside R, et al. 2012. Factors influencing the implementation of fall-prevention programmes: a systematic review and synthesis of qualitative studies. *Implementation Science* 7(91): doi: 10.1186/748-5908-7-91.
- Clegg A, Young J, Iliffe S, et al. 2013. Frailty in elderly people. *The Lancet* 381(9868): 752–62.
- Coleman J. 2016. Letter of Expectations for DHBs and Subsidiary Entities 2107/18. ed. OoHDJ Coleman. Wellington.
- Day L, Finch CF, Hill KD, et al. 2011. A protocol for evidence-based targeting and evaluation of statewide strategies for preventing falls among community-dwelling older people in Victoria, Australia. *Injury Prevention* 17(2): doi: 10.1136/ip.2010.030775.
- De Raad J. 2012. Towards a value proposition... scoping the cost of falls. Wellington: NZ Institute of Economic Research.
- Deloitte. 2017. *Dementia Economic Impact Report 2016*. Alzheimers New Zealand. URL: www.alzheimers.org.nz/news/dementia-economic-impact-report-2016.
- Dixon-Woods M, McNicol S, Martin G. 2012. Ten challenges in improving quality in healthcare: lessons from the Health Foundation's programme evaluations and relevant literature. *BMJ quality & safety* 21(10): 876–84.
- Edwards NC. 2011. Preventing falls among seniors: the way forward. *Journal of Safety Research* 42(6): 537–41.
- Fixsen D, Scott V, Blase K, et al. 2011. When evidence is not enough: the challenge of implementing fall prevention strategies. *Journal of Safety Research* 42(6): 419–22.
- Ganz DA, Alkema GE, Wu S. 2008. It takes a village to prevent falls: reconceptualizing fall prevention and management for older adults. *Injury Prevention* 14(4): 266–71.
- Gillespie LD, Robertson MC, Gillespie WJ, et al. 2012. Interventions for preventing falls in older people living in the community. *Cochrane Database Syst Rev* 9(11): CD007146.
- Goodwin N, Smith J, Davies A, et al. 2012. *Integrated care for patients and populations: Improving outcomes by working together*. London: The King's Fund and Nuffield Trust.
- Goodwin N, Sonola L, Thiel V. 2013. *Co-ordinated care for people with complex chronic conditions, key lessons and markers for success*. London: The King's Fund.
- Greenhalgh T, Howick J, Maskrey N. 2014. Evidence based medicine: a movement in crisis? *British Medical Journal* 13(348): g3725.
- Healey F. 2016. Preventing falls in hospitals. *BMJ* 352: i251.
- Inouye SK, Studenski S, Tinetti ME, et al. 2007. Geriatric syndromes: clinical, research, and policy implications of a core geriatric concept. *Journal of the American Geriatrics Society* 55(5): 780–91.
- Institute of Medicine. 2001. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington: National Academy Press.
- Jones S. 2012. Shared decision-making: Where self-management and clinical expertise meet? *Nursing Review* 12(11): 15.
- Jones S, Blake S, Hamblin R, et al. 2016. Reducing harm from falls. *New Zealand medical journal* 129(1446): 89–103.
- Marshall M, Pronovost P, Dixon-Woods M. 2013. Promotion of improvement as a science. *The Lancet* 381(9864): 419–21.
- Ministry of Health. 2003. *Improving Quality (IQ): A Systems Approach for the New Zealand Health and Disability Sector*. Wellington: Ministry of Health.
- Ministry of Health. 2013. *Health Loss in New Zealand: A report from the New Zealand Burden of Diseases, Injuries and Risk Factors Study, 2006–2016*. Wellington: Ministry of Health.
- Mountford J, Marshall M. 2013. More dialogue, more learning, more action. *British Medical Journal Quality and Safety* 23: 89–91.
- Oliver D, Healey F, Haines TP. 2010. Preventing falls and fall-related injuries in hospitals. *Clinics in Geriatric Medicine* 26(4): 645–92.
- Reuben DB, Tinetti ME. 2012. Goal-oriented patient care—an alternative health outcomes paradigm. *New England Journal of Medicine* 366(9): 777–9.
- Shojania KG, Grimshaw JM. 2005. Evidence-based quality improvement: the state of the science. *Health Affairs* 24(1): 138–50.
- Taylor ME, Delbaere K, Close JC, et al. 2012. Managing falls in older patients with cognitive impairment. *Aging Health* 8(6): 573–88.
- Taylor SL, Dy S, Foy R, et al. 2011. What context features might be important determinants of the effectiveness of patient safety practice interventions? *BMJ Quality & Safety* 20(7): 611–7.
- United Nations DoEaSA, Population Division. 2013. *World Population Prospects: The 2012 Revision. Highlights and Advance Tables*. New York: United Nations.
- Valentijn PP, Schepman SM, Opheij W, et al. 2013. Understanding integrated care: a comprehensive conceptual framework based on the integrative functions of primary care. *International Journal of Integrated Care* 13(1): 655–79.
- Weick KE. 1984. Small wins: redefining the scale of social problems. *American Psychologist* 39(1): 40.
- World Health Organization. 2012. *Falls Fact Sheet no. 344*. Geneva: World Health Organization.
- United Nations Department of Economic and Social Affairs Population Division 2013. *World Population Prospects: The 2012 Revision, Highlights and Advance Tables. Working Paper No. ESA/P/WP.228*. New York.

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