



# Prevention is better than cure:

five tips for keeping older people healthy and out of hospital during winter



*With winter upon us it is a timely reminder of the importance of implementing strategies to keep older people healthy, independent and out of hospital. In the primary care setting this can include performing medicine reviews, assessing and reducing falls risk and encouraging influenza and pneumococcal vaccinations.*

In countries with seasonal climates such as New Zealand, hospital admissions increase greatly over winter, particularly among older people with acute respiratory infections or chronic obstructive pulmonary disease.<sup>1</sup> In many cases, interventions in primary care can help to reduce these acute hospital admissions; known as ambulatory-sensitive hospitalisations, a term used for a condition that is reducible with primary care intervention.<sup>2</sup> For example, the risk of a patient being admitted to hospital with complications of influenza can be reduced by administering influenza vaccination in primary care. Ambulatory-sensitive hospitalisations account for 20 – 25% of all medical and surgical discharges in people aged 65 years or older in New Zealand.<sup>2,3</sup> The annual rates of ambulatory-sensitive hospitalisations in New Zealand are approximately 45 per 1000 people aged 65 – 74 years and 92 per 1000 people aged 75 – 84 years.<sup>2,3</sup>

An integrated approach that includes all members of the primary care team in combination with secondary care, allied health services, social services and other support agencies is essential to provide the best care and keep older people out of hospital. There are a number of interventions that can be carried out in primary care to help achieve this, including encouraging influenza and pneumococcal vaccination, strategies for preventing falls and regularly reviewing medicine use to reduce potential harms from inappropriate prescribing.

Five tips for maintaining the health of older people in your practice:

1. **Know your patient**
2. **Encourage preventive measures**
3. **Encourage and support independence**
4. **Perform regular medicine reviews**
5. **Know what help is available and co-ordinate care**


 The Health Quality & Safety Commission's Atlas of Healthcare Variation includes data on adult and older adult ambulatory sensitive hospitalisations, available from: [www.hqsc.govt.nz/our-programmes/health-quality-evaluation/projects/atlas-of-healthcare-variation/older-adult-ambulatory-sensitive-hospitalisations/](http://www.hqsc.govt.nz/our-programmes/health-quality-evaluation/projects/atlas-of-healthcare-variation/older-adult-ambulatory-sensitive-hospitalisations/)

## 1. Know your patient: taking a social history

Health professionals working in primary care have the luxury of continuity – they often have many years of accumulated knowledge of patients in their practice. This will include information about the patient's family (including extended family), home circumstances, activities and social supports, in addition to a comprehensive knowledge of their medical conditions.

It can be useful to ask older people about how they manage in the winter, e.g. what regular activities do they do (if any)? How do they manage to do their shopping? Is their home warm enough? Who checks on them regularly? Do they become socially isolated when the weather gets cold? Do they find they get a bit depressed over winter? This type of knowledge, often gleaned from the conversational moments of a consultation, is essential in helping to prevent problems occurring or in managing difficulties when they arise.

A key outcome is to take responsibility for monitoring an elderly patient's overall health, promote and enable continuity of care between providers and encourage "mobilisation and socialisation" for the patient.

 Regularly update the patient's clinical record when their social circumstances change. This can help with continuity of care if the patient sees different providers within the practice.

## 2. Encourage preventive measures: influenza and pneumococcal vaccination

Influenza can be particularly severe in older people and result in serious secondary events, e.g. myocardial infarction. In New Zealand influenza is more prevalent during the “flu season” from March to September. Influenza is often under-reported as a contributor to morbidity and mortality, however, mathematical modelling estimates that it is associated with more than 400 deaths in New Zealand each year; 86% of which occur in people aged 65 years and older.<sup>4</sup>

Annual vaccination against influenza can reduce the health burden placed on patients and primary and secondary care providers during winter. During the New Zealand 2013 influenza season in the Auckland region, the trivalent influenza vaccine was estimated to provide patients with 56% protection against presentation to general practice with influenza and 52% protection against hospitalisation due to laboratory-confirmed influenza.<sup>5</sup> This study was unable to provide accurate estimates for vaccine effectiveness in older people. However, a study from the United States reported that over three influenza seasons, influenza vaccination prevented approximately 61% of all respiratory hospitalisations in people aged over 50 years.<sup>6</sup>

Encouraging older people to be immunised annually against influenza may be one of the most effective strategies primary care has for reducing hospital admissions during winter as there are a substantial number of older people who do not receive their free vaccination each year. The influenza vaccination coverage rate for people aged 65 years or older was approximately 67% in 2013, up slightly from approximately 64% in 2012.<sup>7</sup>


Influenza vaccination is subsidised for all people aged 65 years or older prior to or during the influenza season.<sup>8</sup> The two subsidised seasonal influenza vaccines for 2015 are Influvac and Fluarix, which are funded until 31 July, 2015. All people aged nine years or older, require only a single dose of the vaccine each year.<sup>9</sup>

### Pneumococcal vaccination is also recommended

Invasive pneumococcal disease caused by *Streptococcus pneumoniae* occurs throughout the year but is most frequent during autumn and winter.<sup>10</sup> *S. pneumoniae* is the most commonly identified pathogen in older patients with community-acquired pneumonia;<sup>11</sup> this bacteria can also cause life-threatening meningitis and septicaemia. The mortality rate for people hospitalised due to community-acquired pneumonia is reported to range from 10 – 25%,

with older people and people with co-morbidities most severely affected.<sup>11</sup> Approximately 43% of the 513 cases of invasive pneumococcal disease in New Zealand occurred in people aged over 65 years or older in the 12 months ending December, 2014.<sup>12</sup> Pneumococcal vaccination is not subsidised for people aged over 65 years (unless they meet specific high-risk criteria), but is recommended. Adults aged 65 years or over who have not previously had a pneumococcal vaccination are recommended to receive one dose of 23-PPV, ideally preceded eight weeks earlier with one dose of PCV-13. Most older people will not require a further dose of 23-PPV, but those at high risk may be given another dose five years later, e.g. those with chronic obstructive pulmonary disease, diabetes or immunodeficiency.<sup>10, 13</sup>


Patients can be advised that pneumococcal vaccination is effective against invasive pneumococcal disease and provides relatively long-lasting protection. Recently, a large study of more than 84 000 adults aged ≥ 65 years found that vaccination with PCV-13 was 75% effective at protecting against invasive pneumococcal disease for the entire follow-up period of the four year study.<sup>14</sup>

 For further information on vaccination regimens for influenza and pneumococcal disease, subsidies and high-risk groups, see, the New Zealand Immunisation Handbook, available from: [www.health.govt.nz/publication/immunisation-handbook-2014](http://www.health.govt.nz/publication/immunisation-handbook-2014)

## 3. Encourage and support independence: falls prevention and other lifestyle factors

Falls are the number one cause of injury in older people in New Zealand.<sup>15</sup> Up to 60% of people aged 65 years and over are estimated to fall each year, and 10 – 15% have a serious injury as a result of a fall.<sup>15</sup> Falls account for 75% of injury-related hospital admissions in people aged 65 years and over.<sup>15</sup>


Falls tend to occur more frequently in winter, particularly when footpaths are wet, icy or slippery, and the risk of morbidity and mortality will be increased, e.g. an older person who falls in their home and sustains a hip fracture is more likely to become hypothermic overnight if not found. There are many interventions that primary care can discuss with patients to help keep them active, reduce their risk of falling and maintain their independence.

 Older people with an increased risk or history of falls can be encouraged to carry a mobile phone with them, or rent a medical alarm (funding may be available for some people, e.g. via disability allowance or Veterans Affairs). Information

for primary care clinicians about St John medical alarms is available from: [www.stjohn.org.nz/Medical-Alarms/For-GP/](http://www.stjohn.org.nz/Medical-Alarms/For-GP/)

### Assess risk of falls

There are a number of tools that can be used in a primary care setting to assess an older person's risk of falling, e.g. "Ask, assess, act" promoted by the Health Quality & Safety Commission (HQSC).<sup>16</sup> This involves asking the patient about previous falls, assessing their individual risk factors for falls, including mobility, underlying conditions, vision, hearing and safety of the home environment, and acting to implement an individualised plan for preventing falls.<sup>16</sup>

 For further information on "Ask, assess, act" and other falls risk assessment and prevention resources, see: [www.hqsc.govt.nz/our-programmes/reducing-harm-from-falls/](http://www.hqsc.govt.nz/our-programmes/reducing-harm-from-falls/)

N.B. bpac<sup>nz</sup>, in conjunction with the HQSC, has adapted the US Centers for Disease Control and Prevention (CDC) Stopping Elderly Accidents, Deaths and Injuries (STEADI) toolkit for the New Zealand context. This suite of resources is expected to be released later in 2015.

## Vitamin D supplements for older people at risk of deficiency

The main source of vitamin D for the majority of people is exposure to sunlight, specifically ultraviolet B (UVB).<sup>18</sup> Dietary sources, e.g. oily fish such as salmon and tuna, can contribute to the total vitamin D intake but are not sufficient to provide adequate daily requirements.

Seasonal differences in levels of UVB in New Zealand means that vitamin D deficiency is more likely in late winter and early spring (August to October).<sup>18</sup> This seasonal difference is more pronounced for people living in the South Island (excluding Nelson Marlborough).<sup>18</sup>

Groups at high risk of vitamin D deficiency include:<sup>18</sup>

- People who are frail or with limited mobility, e.g. older people who are housebound in the community or living in residential care
- People with naturally very dark skin (due to high melanin levels in the skin which decreases UVB absorption)
- People who have minimal exposure to the sun due to a history of sun-damaged skin or skin cancer, cultural reasons or who are taking medicines that cause photosensitivity

Vitamin D supplements are recommended for people who are considered to be at risk of vitamin D deficiency.<sup>18</sup>

There is no need to measure vitamin D levels prior to initiating or during treatment.<sup>18</sup>

### Vitamin D and falls risk

Insufficient levels of vitamin D decreases muscle strength, therefore in theory increases the risk of falls. There is mixed evidence whether vitamin D supplementation (with or without supplementary calcium) decreases the number of falls in older people. The current thinking is that vitamin D is beneficial in terms of falls risk for elderly people who are considered at risk of deficiency (e.g. in residential care with limited sun exposure), but should not be given solely for the reason of decreasing falls if there is no reason to suspect deficiency.<sup>19,20,21</sup>

Māori and Pacific adults have lower levels of vitamin D than European New Zealanders,<sup>22</sup> however, it is unknown what effect this has on outcomes such as falls; Pacific adults have higher bone mineral content and lower fracture rates than European New Zealanders.<sup>22</sup> Unless Māori and Pacific peoples have other risk factors for vitamin D deficiency, supplementation is not necessary.<sup>18</sup>

Exercise remains the intervention with the strongest and most consistent evidence for prevention of falls.




## Exercise can reduce the risk of falls

Physical activity can increase muscle strength, flexibility, balance and coordination, therefore reducing the risk and harm from falls.<sup>17</sup> All adults should be encouraged to undertake moderate intensity aerobic activity for at least 30 minutes per day, on most days of the week.<sup>17</sup> Older people should also aim for their weekly exercise to include at least three sessions of flexibility and balance activities and two sessions of muscle-strengthening (resistance) activities.<sup>17</sup> Exercises that combine more than one type of physical activity are ideal, e.g. Tai Chi (resistance, flexibility, balance), swimming/aqua aerobics (aerobic, resistance), bowls (flexibility, balance) or golf (aerobic, resistance, flexibility, balance).<sup>17</sup>

For frail older people, any level of physical activity and reduction in sedentary behaviour is beneficial. Low-intensity resistance exercises such as “chairobics” and repeated sit-to-stand exercises can be suggested.<sup>17</sup>

Exercise programmes specifically tailored for falls prevention such as the Otago Exercise Programme, and group exercise classes for older people, e.g. modified Tai Chi, are offered by various providers throughout New Zealand. Funding is available in some areas - check with your local DHB for more information. Older people can also be referred to a “Green prescription” provider, who can facilitate and encourage physical activity via phone calls and face-to-face or group meetings.<sup>17</sup> There are currently 18 green prescription providers nationwide covering all DHB districts.

 Further information on green prescriptions is available from: [www.health.govt.nz/our-work/preventative-health-wellness/physical-activity/green-prescriptions](http://www.health.govt.nz/our-work/preventative-health-wellness/physical-activity/green-prescriptions)

## Assessing nutritional status

Although not directly related to falls prevention, maintaining a healthy body weight and adequate nutrition underpins all health targets for older people.


Poor nutrition can be defined as under-nutrition, over-nutrition or deficiencies of specific nutrients. In older people, the term malnutrition is generally used to describe under-nutrition as a result of insufficient macro and/or micronutrient intake from the diet, and is often more of a concern than obesity in this age group. Malnutrition is associated with a number of negative health outcomes including increased infection rates, muscle wasting, impaired wound healing, longer hospital stays and increased morbidity and mortality.


Strategies for detecting poor nutrition in older people include:


- Routinely ask patients what their usual diet is like, what they have eaten in the past few days and if they have any concerns about their food intake
- Ask patients if they have noticed any change in their bodyweight and regularly weigh patients to detect changes over time
- Ask about appetite and consider underlying causes for poor appetite, e.g. pain, depression, social isolation, reduced sense of taste or smell, adverse effects from medicines
- Ask about any oral health issues which may be affecting eating, e.g. poorly fitting dentures, tooth ache, gum disease, ulcers
- Consider other reasons for difficulties in eating, e.g. weakness or arthritis in the hands or arms, confusion, dementia, COPD
- If there is any uncertainty about a patient’s nutritional status, consider using a formal assessment such as the Malnutrition Universal Screening Tool (MUST)
- Laboratory investigation is not required for diagnosing malnutrition, however, testing may be indicated in some patients to detect specific deficiencies, e.g. iron, folate, vitamin B12

The following advice can be given to patients with BMI <20 kg/m<sup>2</sup> or any patients with unintentional weight or muscle loss:

1. “Food First”: maximise nutritional intake from the diet
  - Eat three small high energy meals per day, e.g. containing protein and fat
  - Snack between meals
  - Include dietary sources of calcium
  - Consume six to eight drinks per day; the recommended daily total fluid intake is approximately 2.1 L for older females and 2.6 L for older males.<sup>23</sup>
  - Limit alcohol intake
  - If possible, eat regularly with family or friends
  - Offer referral to a “Meals-on-wheels” or a similar service
2. Oral nutritional supplements: can be considered as an adjunct to the “food first” strategy in patients with a BMI <20 kg/m<sup>2</sup> or in any patients who continue to experience unintentional weight or muscle loss despite optimising dietary intake.

 Refer to the New Zealand Formulary for prescribing and subsidy information for oral supplements: [http://nzf.org.nz/nzf\\_5107](http://nzf.org.nz/nzf_5107)

 Many older people derive more of their total daily fluid intake from hot drinks, i.e. tea and coffee, than cold drinks. Recent research suggests that caffeine has less of a diuretic effect than previously thought, particularly in people who are accustomed to drinking multiple caffeine-containing drinks per day.<sup>24</sup> Any fluid loss associated with the caffeine in tea or coffee is generally offset by the water content of the drink.<sup>25</sup>

 For further information, see: "Strategies to improve nutrition in elderly people" Prescription Foods Special Edition (May, 2011).

#### 4. Perform regular medicine reviews

In an older population the proportion of people who are taking multiple medicines is inevitably increased. While much of this polypharmacy may be appropriate and result in substantial net health benefits, in older patients polypharmacy is also associated with falls, acute kidney injury, delirium, hypoglycaemia, malnutrition, hospitalisation and mortality.<sup>26</sup> This association has led to the terms inappropriate or problematic polypharmacy being used to describe patients who are receiving multiple medicines, where one or more of these medicines has potential harms that outweigh the benefits of treatment.<sup>27</sup> Patients may experience inappropriate polypharmacy because some of the medicines may interact adversely, a medicine may no longer be needed, or they may simply not receive the intended benefit of multiple treatments.

The single biggest predictor of inappropriate polypharmacy in older patients is the number of prescribed medicines.<sup>28</sup> Patients taking ten or more medicines continuously are considered to be at high risk of inappropriate polypharmacy.<sup>27</sup> Regular medicine reviews of patients taking multiple medicines increases the likelihood that clinicians will identify medicines that are no longer providing the patient with optimal benefit and will also ensure that prescribers are aware of all the medicines and over-the-counter-products (OTC) that a patient might be taking. A medicine review is also an opportunity to discuss any concerns a patient has about their care.


A systematic approach to medicine reviews is recommended, including:

1. Record all known medicine intolerances and previous treatment withdrawals

2. Ask the patient to bring all their medicines, including over-the-counter and alternative products, to the consultation. Establish which ones are being taken, and list each medicine with the regimen, route of administration and strength of the last dose.
3. Discuss each medicine with the patient and the need for continued treatment; agreement should be reached via a shared-decision making approach. Frame this discussion as an attempt to optimise care and improve quality of life, otherwise the patient may feel abandoned by the withdrawal of treatments.

Following discharge from hospital is an excellent time to perform a medicine review as this transfer of care is associated with an increased risk of prescribing errors.

Community pharmacists with special training are available in some areas to provide Medicine Use Reviews that focus on improving treatment adherence and patient knowledge about medicines. Comprehensive Medicine Therapy Assessments involving clinical pharmacists have also been trialled in the Hawke's Bay DHB, with positive feedback from patients and general practitioners as well as resulting in fewer falls in the community and substantial cost savings.<sup>29</sup>

 For further information see: "Polypharmacy in primary care: Managing a clinical conundrum", BPJ 64.

#### 5. Know what help is available: co-ordinate referral to geriatricians, allied health and social services

Older people often have multiple complex medical comorbidities, and an integrated team approach may be required to manage their care. Ideally, the general practitioner should be the central point for co-ordinating this care, and be aware of what other providers are currently involved in a patient's care, including who else is prescribing medicines or recommending interventions.

Discussion with a geriatrician is encouraged for many aspects of care for elderly people, e.g.:


- Making adjustments to medicine regimens in a patient who has experienced adverse effects, or is taking multiple medicines
- Assessment of a patient with acute confusion or slow onset cognitive impairment
- Assessment of a patient being considered for residential care

- Rehabilitation after an illness, disability, injury or surgery
- Assistance with managing incontinence

Many geriatric units offer both inpatient and outpatient care, with a multi-disciplinary team including doctors, nurses, occupational therapists, physiotherapists, pharmacists, speech language therapists, dietitians and social workers.

The aim of care is to support older people in maintaining their independence and quality of life. Assistance is available for personal care (e.g. showering, dressing, medicine management), household support (e.g. preparing meals, housework) and equipment to make the home safer, as well as support for carers. To access some of these services, the person must be a New Zealand citizen or resident who is eligible for publicly funded health or disability services and must undergo an assessment performed by the DHBs Needs Assessment Service (NASC) agency. Referral to the NASC agency can be initiated by anyone involved in a patient's care, including the person themselves, family members/friends or a clinician.

Some older people will also be eligible for additional financial assistance from Work and Income New Zealand, e.g. financial help with accommodation, house modifications and household bills. Older people may also qualify for a Disability Allowance if they have a disability that is likely to last at least six months and result in ongoing costs not fully covered by another agency. Age Concern provides many services and support for elderly people in the community. "Warm Up New Zealand: Healthy Homes" provides free ceiling and underfloor insulation for people with health needs related to cold, damp housing. People with a Community Services Card living in a house that has occupants aged <18 or >65 years are eligible to apply, however, funding is limited and not all areas of New Zealand are covered.

 For further information on eligibility, access and availability of these services, see:

[www.health.govt.nz/your-health/services-and-support/health-care-services/services-older-people/support-services-older-people](http://www.health.govt.nz/your-health/services-and-support/health-care-services/services-older-people/support-services-older-people)

[www.workandincome.govt.nz/individuals/a-z-benefits/disability-allowance.html](http://www.workandincome.govt.nz/individuals/a-z-benefits/disability-allowance.html)

[www.workandincome.govt.nz/individuals/65-years-or-older/#Helpwithhousingandlivingcosts](http://www.workandincome.govt.nz/individuals/65-years-or-older/#Helpwithhousingandlivingcosts)

[www.energywise.govt.nz/free-insulation](http://www.energywise.govt.nz/free-insulation)

[www.ageconcern.org.nz/](http://www.ageconcern.org.nz/)

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