



Public Health
England

Protecting and improving the nation's health

Falls and fracture consensus statement Resource pack

Resources for commissioners and strategic leads with a remit for falls prevention,
bone health and healthy ageing

July 2017

To be reviewed July 2018

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. We do this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health, and are a distinct delivery organisation with operational autonomy to advise and support government, local authorities and the NHS in a professionally independent manner.

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Introduction

This resource pack accompanies the 'Falls and fracture consensus statement: supporting commissioning through prevention' which was produced by Public Health England and the member organisations of the National Falls Prevention Coordination Group. It contains information and resources to support commissioners and strategic leads with a remit for falls prevention, bone health and healthy ageing.

The resource pack's structure is aligned to the consensus statement. In addition to a section detailing general resources, there are specific sections relating to the key interventions listed in the statement. Given its connection to falls and fractures, both clinically and in terms of health and care services, a section on frailty has been added. A number of the sections provide additional information to that provided in the consensus statement, including evidence of clinical and cost-effectiveness.

There are a number of different types of document and resource contained within this resource pack. These include:

Commissioning support: Documents that are specifically aimed at supporting the commissioning of services involved in falls and fracture prevention. Section four of the 'Falls and fracture consensus statement' is focussed on approaches to commissioning for prevention.

Clinical guidance: Clinical guidance provides evidence-based recommendations on the care most suitable for those at risk of falls or fracture. It allows commissioners and strategic leads to assess the quality of care that is being commissioned and provided in their area.

Quality standards: Quality standards detail specific markers of high-quality patient care and associated measures that are aspirational, but achievable. As such, they identify priority areas for quality improvement in health and social care services.

Technology appraisals: NICE technology appraisals are recommendations on the use of new and existing medicines and treatments within the NHS in England, which are made following a review of clinical and economic evidence. The NHS is legally obliged to fund and resource recommended medicines and treatments.

Research: Research papers or reviews of research detail the evidence that has been found for the clinical and cost-effectiveness of the specific interventions recommended in the 'Falls and fracture consensus statement'.

Clinical audit: Clinical audit is a quality improvement process in which service performance is reviewed against agreed criteria allowing the identification of areas where improvement can take place. Clinical audits provide good quality data on local service performance.

Professional development and tools: These are resources aimed at developing the skills and knowledge of professionals involved in falls and fracture prevention or supporting professional practice.

Patient information: Aimed at patients and their families and carers, these contain information on falls and fractures, prevention, and the quality of care that patients should expect to receive. Commissioners should monitor the provision of appropriate patient information in their areas.

Policy and strategy: Documents outlining priority areas for action identified by one or more organisations and the ways for achieving these. They are often quite high level.

Indicators: Activity, quality and outcomes can be measured through the collection of appropriate data. Data for the indicators listed in the 'General', 'Risk factor reduction', 'Fracture liaison Service' and 'Collaborative care for severe injury – hip fractures' sections are being collected nationally. In the other sections, data are not currently being systematically collected for the indicators listed. These are possible areas commissioners and strategic leads may wish to consider for local collection.

Checklist for commissioners: The document also brings together, in checklist form, the recommendations contained in the consensus statement for both key interventions and approaches to commissioning.

Recommendations for local areas

The 'Falls and fracture consensus statement' recommends a collaborative and whole system approach to prevention, response and treatment for local areas. This should:

- promote healthy ageing across the different stages of the life course
- optimise the reach of evidence-based case finding and risk assessment
- be able to demonstrate the commissioning of services that provide:
 - i. an appropriate response attending people who have fallen
 - ii. multifactorial risk assessment and timely and evidence-based tailored interventions for those at high risk of falls
 - iii. evidence-based strength and balance programmes and opportunities for those at low to moderate risk of falls
 - iv. home hazard assessment and improvement programmes
- ensure that local approaches to improve poor or inappropriate housing address falls prevention and promote healthy ageing
- be able to demonstrate actions to reduce risk in high-risk health and residential care environments
- provide fracture liaison services in line with clinical standards including access to effective falls interventions when necessary
- provide evidence-based collaborative, interdisciplinary care for falls-related serious injuries supported by clinical audit programmes
- have a strategic lead and governance body with oversight and assurance of falls, bone health and related areas including frailty and multimorbidity

1. General resources

This section lists resources, which provide an overview of falls and fracture prevention and care for both professionals and patients, their families and carers. The clinical guidance and quality standards listed make recommendations relating to falls and/or fracture prevention systems in a local area, or cover areas that impact on falls and fracture such as multimorbidity and midlife healthy living promotion. The indicator section lists relevant national datasets currently being collected. Specific interventions are covered later on in this document.

Resources

Clinical guidance

American Geriatrics Society/British Geriatrics Society clinical practice guideline. Prevention of falls in older people. 2010.

College of Occupational Therapists. Occupational therapy in the prevention and management of falls in adults: practice guideline. 2015.

National Osteoporosis Guideline Group. NOGG 2017: Clinical guideline for the prevention and treatment of osteoporosis. 2017.

NICE CG124 The management of hip fracture in adults. 2014.

NICE CG146 Osteoporosis: assessing the risk of fragility fracture. 2017.

NICE CG161 Falls in older people: assessing risk and prevention. 2013.

NICE NG16 Midlife approaches to preventing the onset of disability, dementia and frailty. 2016.

NICE NG56 Multimorbidity: clinical assessment and management. 2016.

Quality standards

NICE QS86 Falls in older people. 2017.

NICE QS149 Osteoporosis. 2017.

Technology appraisals

NICE TA160 Alendronate, etidronate, risedronate, raloxifene and strontium ranelate for the primary prevention of osteoporotic fragility fractures in postmenopausal women. 2011.

NICE TA161 Alendronate, etidronate, risedronate, raloxifene, strontium ranelate and teriparatide for the secondary prevention of osteoporotic fragility fractures in postmenopausal women. 2011.

Patient information

Age UK. *Staying steady: keep active and reduce your risk of falling*. 2016. This guide provides information on: exercises to improve your strength and balance; things to watch for that could affect your balance; help that is available if you need it.

International Osteoporosis Foundation *global patient charter*. 2017. Sets out the care patients with osteoporosis should receive.

National Osteoporosis Society. *Have you broken a bone?* 2017. Information on what a patient should do if they break a bone.

NHS Choices. *Are you at risk of falling?* A simple online test for the user to work out if they need to discuss their risk of falls with their GP.

NHS England. *A practical guide to healthy ageing*. 2015. Topics include medicines reviews, exercise, preventing falls, general home safety, with tips to help older people stay both physically and mentally fit and independent, and pointers on when to seek medical support and advice.

Saga, Public Health England, Chartered Society of Physiotherapists. *Get up and go: a guide to staying steady*. 2015. Information on falls, reducing falls' risk, strength and balance improvement exercises, and how to get up after a fall.

Research

Age UK. *Don't mention the F-Word: advice to practitioners on communicating messages to older people*. 2012. This briefing summarises research findings on why many older people are reluctant to accept advice on falls prevention and how to communicate key messages in an acceptable way.

Blain H, Masud T, Dargent-Molina P, Martin FC, Rosendahl E, van der Velde N, et al. A comprehensive fracture prevention strategy in older adults: The European Union Geriatric Medicine Society (EUGMS) Statement. *J Nutr Health Aging*. 2016; 20(6):647–52. A European clinical consensus statement providing a useful overview of the evidence base and priorities for falls and fracture prevention.

Gillespie LD, Robertson MC, Gillespie WJ, Sherrington C, Gates S, Clemson LM, et al. Interventions for preventing falls in older people living in the community. In: *Cochrane Database of Systematic Reviews*. 2012.

Clinical audit

Royal College of Physicians. *Falling standards, broken promises: report of the national audit of falls and bone health*. 2013. This report is based on the findings of the national audit of falls and bone health in older people 2010, which found wide variation in the quality and coverage of evidence-based falls and fracture interventions.

Policy and strategy

The ProFouND, EUFF, EIP-AHA AG2, E-NO FALLS working group. *Silver paper on falls prevention in older age*. 2016. A position statement by European networks and partnerships.

World Health Organisation. *World report on ageing and health*. 2015. A report outlining a framework for global action to support healthy ageing.

Indicators

CCG improvement and assessment framework:

- 104a Injuries from falls in people aged 65 and over

Public health outcomes framework

- 2.24 Injuries due to falls in people aged 65 and over
- 4.14 Hip fractures in people aged 65 and over

NHS England. *NHS Rightcare commissioning for value focus pack tool; musculoskeletal conditions, trauma and injuries. Osteoporosis and fragility fractures pathway*. Tool containing CCG level data on a number of osteoporosis and fragility fracture related indicators.

International Consortium for Health Outcomes Measurement. *Standard outcome set for older people*. 2016. Work carried out by patients, physicians and measurement experts

to determine the outcomes that matter most to older people over six domains: symptoms, functioning and quality of life; care; healthcare responsiveness; clinical status; quality of death; disutility of care. This can be used to inform the choice of indicators.

2. Frailty

Frailty is a clinically recognised state of increased vulnerability in older adults. It is associated with a decline in an individual's physical and psychological reserves. Frailty is related to falls in that an older person living with frailty has an increased risk of falling; conversely, a fall may be a sign of underlying frailty.

The electronic frailty index (eFI) is a validated tool that uses general practice electronic patient records to identify older people living with mild, moderate and severe frailty and following on from this, at increased risk of mortality, hospitalisation and nursing home admission.

The GP general medical services (GMS) contract for 2017/2018 requires all general practices to use an appropriate tool such as the electronic frailty index to identify patients aged 65 and over who are living with moderate and severe frailty. For those patients identified as living with severe frailty, the practice will deliver a clinical review providing an annual medication review and, where appropriate, discuss whether the patient has fallen in the last 12 months and provide any other clinically relevant interventions. In addition, where a patient does not already have an enriched Summary Care Record (SCR), the practice will promote this by seeking informed patient consent to activate the enriched SCR.

Resources

Commissioning support

British Geriatrics Society. Fit for frailty: developing, commissioning and managing services for people living with frailty in community settings - a report from the British Geriatrics Society and the Royal College of General Practitioners. 2015.

NHS England. Safe, compassionate care for frail older people using an integrated care pathway: practical guidance for commissioners, providers and nursing, medical and allied health professional leaders. 2014.

NHS Rightcare. Frailty scenario - Janet's story. 2016. In this scenario – using a fictional patient, Janet – a frailty care pathway is examined, comparing a sub-optimal but typical scenario against an ideal pathway. At each stage the costs of care are modelled, both financial to the commissioner but also the impact on the person and their family's outcomes and experience.

Clinical guidance

NICE NG56 Multimorbidity: clinical assessment and management. 2016.

British Geriatrics Society. Fit for frailty: consensus best practice guidance for the care of older people living with frailty in community and outpatient settings. 2014.

Professional development

NHS England. Toolkit for general practice in supporting older people living with frailty. 2017.

Research

Clegg A, Bates C, Young J, Ryan R, Nichols L, Teale EA. Development and validation of an electronic frailty index using routine primary care electronic health record data. Age and Ageing. 2016; 45 (3): 353-360.

Other

Martin Vernon, National Clinical Director for Older People and Person Centred Integrated Care at NHS England, blog on using the word 'frailty' with patients.

Indicators:

- number/percentage of patients aged 65+ identified in primary care with mild/moderate/severe frailty using a tool such as eFI
- number/percentage of patients aged 65+ identified in primary care with severe frailty using a tool such as eFI reporting a fall in the previous 12 months
- number/percentage of patients aged 65+ identified with severe frailty in primary care using a tool such as eFI and reporting a fall in the previous 12 months with record of multifactorial intervention taking place
- number/percentage of patients aged 65+ identified with severe frailty in primary care using a tool such as eFI with record of annual medication review

3. Risk factor reduction

Consistent and effective collaboration and action to reduce exposure to falls and fracture risk factors needs to take place at the different stages of the life course. Modifiable risk factors include low levels of physical activity or inactivity, low body mass index (BMI), high alcohol consumption and smoking.

Resources

Commissioning support

NHS England. Guidance on commissioning excellent nutrition and hydration 2015-18. 2015.

Adults – alcohol JSNA support pack 2017-18 commissioning prompts: planning for alcohol harm prevention, treatment and recovery in adults. 2016.

Public Health England. Tobacco control joint strategic needs assessment (JSNA) support pack: good practice prompts for planning comprehensive local tobacco control interventions in 2017-18. 2016.

Clinical guidance

DH/Physical Activity Team. Start active, stay active: a report on physical activity for health from the four home countries' chief medical officers. 2011.

NICE NG16. Dementia, disability and frailty in later life – mid-life approaches to delay or prevent onset. 2015.

NICE physical activity guidance.

Research

Murray, R. The role of smoking in the progressive decline of the body's major systems. Public Health England. 2014.

Public Health England. Changing risk behaviours and promoting cognitive health in older adults: an evidence-based resource for local authorities and commissioners prepared by the Cambridge Institute of Public Health, University of Cambridge. 2016.

Public Health England. Scientific Advisory Council on Nutrition. Vitamin D and health report. 2016.

Professional development

Alcohol CLear self-assessment tool and resources for local alcohol partnerships.

Public Health England alcohol learning resources.

Public Health England. The CLear model: excellence in tobacco control for self-assessors. 2014.

Sport England resources.

Patient information

One You. Website aimed at the public containing quiz, resources and support for healthy living.

Policy and strategy

Public Health England. Everybody active, every day: a framework to embed physical activity into daily life. 2014.

Sport England. Towards an active nation: strategy 2016-2021. 2016

Indicators

Public health outcomes framework.

Local alcohol profiles for England.

PHE physical activity tool.

Local tobacco control profiles for England.

4. Case finding and risk assessment

NICE recommends the assessment of fracture risk is considered in all women aged 65 and over, all men aged 70 and over, and in younger men and women with risk factors. Fracture risk assessment tool (FRAX) or QFracture are the recommended electronic tools for assessing fracture risk. Electronic tools can be used with individual patients and combined with dual energy X-ray absorptiometry (DXA) scans for those in whom treatment may be needed. They can also be used to identify cases via patient information technology systems. The fracture liaison service model systematically identifies all patients aged 50 and over with a fragility fracture and ensures that osteoporosis and falls assessments are carried out (for details see section 8).

NICE recommends that older people coming into contact with professionals and organisations that have health and social care as part of their remit should be asked routinely about falls. Older people reporting a fall or at risk of falling should be observed for balance and gait deficits and considered for risk assessment and risk reduction interventions. Given the multiple risk factors for falls, if a clinician judges a person to be at high risk of falling, then a multifactorial falls assessment should be carried out which aims to identify specific risk factors resulting in appropriate tailored interventions. These interventions may include strength and balance exercise programmes, home hazard assessment and intervention, vision assessment and referral and medication review with modification/withdrawal of medicines.

Additional routes for case finding include providing information that allows self-referral, and also the use of tools such as the electronic frailty index, which enables the identification of at-risk patients via their primary care electronic patient records (see section 2).

The European Union Geriatric Medicine Society notes: “A multifactorial and interprofessional approach, determined by individual assessment of functional, medical, and social concerns, may be a more appropriate strategy to prevent falls in older people (judged) at high risk of falling (than single interventions). Moreover, this tailored approach may provide opportunities to address previously unidentified health problems (eg impaired cognition, diabetes, Parkinson’s disease, osteoporosis) conferring benefits beyond falls prevention. People at high risk of a fall are most often frail patients, and a multifactorial approach in this population has been shown to improve the ability to live safely and independently”.¹

¹ Blain H, Masud T, Dargent-Molina P, Martin FC, Rosendahl E, van der Velde N, et al. A comprehensive fracture prevention strategy in older adults: The European Union Geriatric Medicine Society (EUGMS) Statement. *J Nutr Health Aging*. 2016; 20(6):799.

A multifactorial falls assessment should result in appropriate tailored interventions to reduce identified risks. Strength and balance exercise programmes and home hazard assessment and interventions are covered in later sections of this document. Additional interventions include vision assessment and referral, and medication review with modification/withdrawal of medicines.

It is important to note that services focussing solely on frailty will not necessarily target those older people who clinicians would judge as having low to moderate falls risk.

Effectiveness

A Cochrane Collaboration systematic review found that risk assessment followed by appropriate interventions for falls prevention reduced the rate of falls by 24%.²

Research literature in English published since 2003 on the cost effectiveness of falls prevention interventions targeting older community dwelling adults in OECD countries, includes nine studies assessing risk assessment plus active risk factor management. Of these, four (two from USA, one from Australia and one from England) are cost-effective, with the English study showing that multifactorial interventions in line with NICE falls guidance is cost-effective.^{3 4 5 6}

Resources

Clinical guidance

NICE CG161 Falls in older people: assessing risk and prevention. 2013.

NICE CG 146 Osteoporosis: assessing the risk of fragility fracture. 2012.

NICE NG5 Medicines optimisation: the safe and effective use of medicines to enable the best possible outcomes. 2015.

² Gillespie LD, Robertson MC, Gillespie WJ, Sherrington C, Gates S, Clemson LM, et al. Interventions for preventing falls in older people living in the community. In: Cochrane Database of Systematic Reviews. 2012.

³ Albert SM, Raviotta J, Lin CJ, Edelstein O, Smith KJ. Cost-effectiveness of a statewide falls prevention program in Pennsylvania: Healthy Steps for Older Adults. *Am J Manag Care*. 2016;22(10):638-44.

⁴ Beard J, Rowell D, Scott D, van Beurden E, Barnett L, Hughes K, et al. Economic analysis of a community-based falls prevention program. *Public Health*. 2006;120(8):742-51.

⁵ Wu G, Keyes L, Callas P, Ren X, Bookchin B. Comparison of telecommunication, community, and home-based Tai Chi exercise programs on compliance and effectiveness in elders at risk for falls. *Arch Phys Med Rehabil*. 2010;91(6):849-56.

⁶ Sach TH, Logan PA, Coupland CAC, Gladman JRF, Sahota O, Stoner-Hobbs V, et al. Community falls prevention for people who call an emergency ambulance after a fall: an economic evaluation alongside a randomised controlled trial. *Age Ageing*. 2012;41(5):635-41.

Quality standards

NICE QS86 Falls in older people. 2017.

NICE QS120 Medicines Optimisation. 2016.

NICE QS149 Osteoporosis. 2017.

Research

Close J, Ellis M, Hooper R, Glucksman E, Jackson S, Swift C. Prevention of falls in the elderly trial (PROFET): a randomised controlled trial. *Lancet*. 1999 Jan 9; 353(9147):93–97. A study demonstrating the effectiveness of multifactorial interventions.

Nandy S, Parsons S, Cryer C, Underwood M, Rashbrook E, Carter Y, Eldridge S, Close J, Skelton D, Taylor S, et al. Development and preliminary examination of the predictive validity of the Falls Risk Assessment Tool (FRAT) for use in primary care. *J Public Health (Oxf)* 2004; 26:138–143. Falls risk assessment tool (FRAT) can be used as a screening tool to assess whether an older person should be referred for a multifactorial falls intervention. It should not be used to class someone as at low, medium or high risk of falling.

Public Health England. Evaluation of the impact of Fire and Rescue Service interventions to reduce the risk of harm to vulnerable groups of people from winter-related illnesses. 2016. Evaluation of Fire and Rescue Service Safe and Well programme, which included falls case finding.

Tanna N, Tatla T, Winn S, Chita, Ramdoo K, Batten C, Pitkin J. Clinical medication review and falls in older people — what is the evidence base? *Pharmacology & Pharmacy*. 2016; 7: 89-96.

Professional development and tools

FRAX fracture risk assessment tool website

A video on the timed up and go (TUG) test can be [accessed here](#).

Policy and strategy

The College of Optometrists. The importance of vision in preventing falls. 2011. Evidence-based policy document.

Indicators:

- number of falls cases identified by profession/organisation
- number of falls multifactorial assessments carried out by number of cases referred for each profession/organisation
- number and type of intervention referrals by number of falls multifactorial assessments
- number of interventions delivered following referral
- number of patients identified as being at risk of fracture on primary care electronic patient records
- % of patients being identified as being at risk of fracture on primary care systems with a record of being treated with appropriate bone sparing agents
- number of hip fracture patients, non-hip non spine and spine fracture patients identified for secondary fracture prevention

5. Strength and balance exercise programmes

Effectiveness

A Cochrane Collaboration systematic review on interventions to prevent falls in community dwelling adults found that group exercise reduced the rate of falls by 29% and the risk of falling by 15%.⁷ Home-based exercise reduced the rate of falls by 32% and the risk of falls by 22%. One trial included in the review indicated that home based exercise was cost saving for those aged 80 and older.

A review of the evidence for falls prevention exercise programmes carried out by Age UK⁸ found that in order to be effective, they must:

- be continued over a duration of at least 50 hours
- be carried out two to three times a week
- challenge balance and improve strength through resistance training and exercise in a standing position
- be sufficiently progressive
- be tailored to the individual; pitched at the right level, taking falls history and medical conditions into account
- be delivered by specially trained instructors

Iliffe et al found that a falls prevention group exercise programme significantly reduced falls and increased levels of self-reported physical activity 12 months after intervention.⁹

Research literature in English published since 2003 on the cost-effectiveness of falls prevention interventions targeting older community dwelling adults in Organisation for Economic Cooperation and Development (OECD) countries shows:

⁷ Gillespie LD, Robertson MC, Gillespie WJ, Sherrington C, Gates S, Clemson LM, et al. Interventions for preventing falls in older people living in the community. In: Cochrane Database of Systematic Reviews. 2012.

⁸ Charters A, Age UK. Falls Prevention Exercise – following the evidence. Age UK; 2013.

⁹ Iliffe S, Kendrick D, Morris R, Masud T, Gage H, Skelton D, et al. Multicentre cluster randomised trial comparing a community group exercise programme and home-based exercise with usual care for people aged 65 years and over in primary care. Health Technol Assess. 2014;18(8):1-106.

- group-based exercise for women over 70 years, with or without a history of falls, appears to be cost-effective when judged using an incremental cost per quality adjusted life year (incremental cost effectiveness ratio £22,986)¹⁰
- a comparison of the falls management exercise (FaME) and Otago programmes showed both had very similar quality adjusted life year changes from baseline. FaME was more expensive by about £141 per person but was more clinically effective in terms of falls avoided¹¹
- group-based exercise training using the FaME exercise programme might be cost-effective in certain groups of people such as those with Parkinson's disease¹²
- there were inconsistent results on the cost-effectiveness of the Otago programme. Overall, this programme was evaluated better than the other interventions and may be cost saving as well as reducing falls in groups who adhere to the programme, but efficacy is dependent on fidelity of implementation^{13 14 15}

Resources

Clinical guidance

NICE CG161 Falls in older people: assessing risk and prevention. 2013.

Quality standards

NICE QS86 Falls in older people. 2017.

Research

Age UK. Falls prevention exercise – following the evidence. 2013.

Royal College of Physicians. Older people's experiences of therapeutic exercise as part of a falls prevention service – patient and public involvement. 2012.

¹⁰ McLean K, Day L, Dalton A. Economic evaluation of a group-based exercise program for falls prevention among the older community-dwelling population. *BMC Geriatrics*. 2015;15:33.

¹¹ Iliffe S, Kendrick D, Morris R et al. Multicentre cluster randomised trial comparing a community group exercise programme and home-based exercise with usual care for people aged 65 years and over in primary care. *Health Technol Assess*. 2014; 18(49).

¹² Fletcher E, Goodwin VA, Richards SH, Campbell JL, Taylor RS. An exercise intervention to prevent falls in Parkinson's: an economic evaluation. *BMC Health Serv Res*. 2012;12:426.

¹³ Iliffe S, Kendrick D, Morris R et al. Multicentre cluster randomised trial comparing a community group exercise programme and home-based exercise with usual care for people aged 65 years and over in primary care. *Health Technol Assess*. 2014; 18(49).

¹⁴ Campbell AJ, Robertson MC, Grow SJ, Kerse NM, Sanderson GF, Jacobs RJ, *et al*. Randomised controlled trial of prevention of falls in people aged >75 with severe visual impairment: The VIP trial. *BMJ*. 2005; (7520): 817-20.

¹⁵ Hektoen LF, Aas E, Luras H. Cost-effectiveness in fall prevention for older women. *Scand J Public Health*. 2009;37(6):584-9.

Blain H, Masud T, Dargent-Molina P, Martin FC, Rosendahl E, van der Velde N, et al. A comprehensive fracture prevention strategy in older adults: The European Union Geriatric Medicine Society (EUGMS) Statement. *J Nutr Health Aging*. 2016; 20(6):647–52.

Gillespie LD, Robertson MC, Gillespie WJ, Sherrington C, Gates S, Clemson LM, et al. Interventions for preventing falls in older people living in the community. In: *Cochrane Database of Systematic Reviews*. 2012.

Sherrington C, Tiedemann A, Fairhall N, Close JCT, Lord SR. Exercise to prevent falls in older adults: an updated meta-analysis and best practice recommendations. *New South Wales Public Health Bull*. 2011 Jun; 22(3–4):78–83.

Sherrington C, Michaleff ZA, Fairhall N, et al. Exercise to prevent falls in older adults: an updated systematic review and meta-analysis. *Br J Sports Med* Published Online First: 4 October 2016.

Policy and strategy

The ProFouND, EUFF, EIP-AHA AG2, E-NO FALLS working group. Silver paper on falls prevention in older age. 2016. A position statement by European networks and partnerships.

Indicators:

- number of evidence-based programmes run per annum
- number of places per annum
- number of referrals per annum (broken down by age/gender)
- % of referred patients commencing courses
- % of referred patients completing course
- % with improved proxy falls risk functional outcomes (eg timed up and go) after completion of programme and mean improvement
- onward referral to other physical activity opportunities to continue strength and balance progression

6. Healthy homes

Effectiveness

A Cochrane Collaboration systematic review on interventions to prevent falls in community dwelling adults found that home hazard assessment and modification carried out by occupational therapists reduced the rate of falls by 19% and the risk of falling by 12%.¹⁶ One trial included in the review indicated the intervention was cost saving in patients who have had a previous fall.

Research literature in English published since 2003 on the cost effectiveness of falls prevention interventions targeting older community dwelling adults in OECD countries suggests that home assessment and modification is likely to be a cost-effective intervention for falls prevention in older age groups.^{17 18 19 20} However, the generalisability of the published results to English health and social care settings is uncertain (two studies were conducted in New Zealand and one in the US).

Resources

Clinical guidance

College of Occupational Therapists. Occupational therapy in the prevention and management of falls in adults: practice guideline. 2015.

NICE CG161 Falls in older people: assessing risk and prevention. 2013.

Quality standards

NICE QS86 Falls in older people. 2017.

Professional development and tools

The University of Newcastle, Australia. Home falls and accidents screening tool (HOMEFAST).

¹⁶ Gillespie LD, Robertson MC, Gillespie WJ, Sherrington C, Gates S, Clemson LM, et al. Interventions for preventing falls in older people living in the community. In: Cochrane Database of Systematic Reviews. 2012.

¹⁷ Campbell AJ, Robertson MC, La Grow SJ, Kerse NM, Sanderson GF, Jacobs RJ, et al. Randomised controlled trial of prevention of falls in people aged > or =75 with severe visual impairment: the VIP trial. BMJ. 2005;331(7520):817.

¹⁸ Church J, Goodall S, Norman R, Haas M. The cost-effectiveness of falls prevention interventions for older community-dwelling Australians. Aust N Z J Public Health. 2012;36(3):241-8.

¹⁹ Frick KD, Kung JY, Parrish JM, Narrett MJ. Evaluating the cost-effectiveness of fall prevention programmes that reduce fall-related hip fractures in older adults. J Am Geriatr Soc. 2010;58(1):136-41.

²⁰ Pega F, Kvizhinadze G, Blakely T, Atkinson J, Wilson N. Home safety assessment and modification to reduce injurious falls in community-dwelling older adults: cost-utility and equity analysis. Inj Prev. 2016;22(6):420-26.

Patient information

[Disabled Living Foundation. askSARA website](#). Provides personalised information on the home environment and activities within the home including falls.

Research

Nicol S, Roys M, Garrett H. The cost of poor housing to the NHS. Building Research Establishment. 2016.

University of York. Effectiveness matters: housing improvement and home safety. 2014.

Professional development and tools

Office of the Deputy Prime Minister. Housing health and safety rating system: operating guidance. 2006.

Online resource collection: Homes for health: strategies, plans, advice, and guidance about the relationship between health and the home. 2016.

Indicators:

- number of home hazard assessments undertaken by health practitioners in homes of people aged 65+ per 1,000 patients aged 65+ with a falls related emergency admission
- number of home hazard assessments undertaken by housing practitioners/home improvement agencies in homes of people aged 65+ per 1,000 population aged 65+
- number and type of safety interventions/modifications provided or commissioned by trained health practitioners in homes of people aged 65+ per number of home hazard assessments undertaken by health practitioners in homes of people aged 65+ with a falls related emergency admission
- number and type of safety interventions/modifications provided by housing practitioners/home improvement agencies (but not commissioned by health providers) in homes of people aged 65+ per number of home hazard assessments undertaken by housing practitioners/home improvement agencies in homes of people aged 65+

7. High-risk care environments

High-risk care environments include hospitals, mental health and learning disability units and care and nursing homes. All hospital trusts should have a trust level inpatient falls steering group with representation from and reporting to the trust board. This group should regularly review falls data. All trusts should have a regular inpatient falls multi-disciplinary working group and the activities of this group should be reviewed regularly to ensure that it is fit for purpose. Commissioners should be provided with and monitor trust falls' data and review trust falls governance on a regular basis.

Commissioners should be provided with and regularly review trust inpatient falls numbers in terms of falls per 1000 occupied bed days (OBD) broken down by severity - moderate harm, severe harm and deaths/1000 OBD - and assess the success of their practice against trends in these figures. Commissioners should not assume that a trust with a high number of reported incidents has lower levels of patient safety and, conversely, a low number of reported incidents does not necessarily suggest better patient safety procedures are in place.

While this may be the case, it could equally be that a trust with a high number of incidents may be better at identifying and reporting incidents, or have higher numbers of at-risk patients with conditions such as Parkinson's Disease, dementia or stroke. They may also have more active rehabilitation and mobilisation policies that result in increased activity, and following on from this greater numbers of falls, but which actually result in reduced falls per unit of activity.

Resources

Commissioning support

[Royal College of Physicians. NAIF 2015 CCG reports.](#) Regional specific reports produced to disseminate results of the 2015 National Audit of Inpatient Falls to commissioners.

Clinical guidance

[NICE CG161 Falls in older people: assessing risk and prevention. 2013.](#)

Quality standards

[NICE QS86 Falls in Older People. 2017.](#)

Clinical audit

Royal College of Physicians' falls and fragility fracture audit programme (FFFAP) falls workstream (national audit of inpatient falls) webpage contains a suite of quality improvement resources.

Royal College of Physicians. National audit of inpatient falls audit report. 2015.

Professional development and tools.

Care Inspectorate and NHS Scotland. Managing falls and fractures in care homes for older people – good practice resource revised edition.

FallSafe – a collection of inpatient falls prevention resources brought together as part of a Royal College of Physicians initiative.

NHS England. Enhanced health in care homes (EHCH) framework. 2016. Based on a suite of evidence-based interventions designed to be delivered within, and around, a care home in a coordinated manner in order to make the biggest difference to residents.

Information on NHS Improvement's patient falls improvement collaborative initiative, which aims to improve the prevention and management of patients at risk of falling, can be found on the [NHS Improvement website](#).

NHS Safety Thermometer Tool.

Indicators

NHS Improvement's [National Reporting and Learning System](#) (NRLS) collects data on all reported patient safety incidents including falls. This national system receives incident reports via healthcare organisations' own local risk management systems.

8. Fracture liaison services

Effectiveness

A international review of fracture liaison services (FLS) states that best-practice services are associated with: a reduction in re-fracture risk of between 82% and 33% over two to four years; reduced mortality (a reduction of 35% over two years); patients being two to three times more likely to have an assessment of bone mineral density; it being between one and a half to over four times more likely that osteoporosis treatment is initiated with increased levels of adherence to treatment; and cost-effectiveness.²¹

Resources

Commissioning support

National Osteoporosis Society. FLS implementation toolkit.

Clinical guidance and quality standards

International Osteoporosis Foundation. Capture the fracture best practice framework. 2013.

National Osteoporosis Society. Effective secondary prevention of fragility fractures: clinical standards for fracture liaison services. 2015.

NICE CG146 Osteoporosis: assessing the risk of fragility fracture. 2012.

Quality standards

NICE QS149 Osteoporosis. 2017.

Technology appraisals

NICE TA161 Alendronate, etidronate, risedronate, raloxifene, strontium ranelate and teriparatide for the secondary prevention of osteoporotic fragility fractures in postmenopausal women. 2011.

Research

Department of Health. Fracture prevention services – an economic evaluation. 2009.

²¹ Walters S, Khan T, Ong T, Sahota O. Fracture liaison services: improving outcomes for patients with osteoporosis. *Clinical Interventions in Ageing*. 2017; 12: 117-127.

Freemantle N, Cooper C, Diez-Perez A, Gitlin M, Radcliffe H, Shepherd S, Roux C. Results of indirect and mixed treatment comparison of fracture efficacy for osteoporosis treatments: a meta-analysis. *Osteoporosis Int.* 2013 Jan; 24(1): 209-217. A meta-analysis showing the effectiveness of bisphosphonates – bone strengthening medicines – in preventing fractures.

Walters S, Khan T, Ong T, Sahota O. Fracture liaison services: improving outcomes for patients with osteoporosis. *Clinical Interventions in Ageing.* 2017; 12: 117-127.

Clinical audit

Royal College of Physicians. FLS-DB facilities audit - FLS breakpoint: opportunities for improving patient care following a fragility fracture. 2016. A facilities audit providing a comprehensive assessment of secondary fragility fracture prevention services.

Royal College of Physicians. Fracture Liaison Service Database (FLS-DB) clinical audit: FLS forward: Identifying high-quality care in the NHS for secondary fracture prevention. 2017. A patient level audit of the quality of FLS in England.

Patient information

International Osteoporosis Foundation Global Patient Charter. 2017. Sets out the care patients with osteoporosis should receive.

National Osteoporosis Society. Have you broken a bone? 2017. Information on what a patient should do if they break a bone.

Indicators

Royal College of Physicians FLS-DB clinical audit indicators:

1. Data completeness: numerator - number of patients with >20% non-mandatory fields missing; denominator - total number of patients submitted
2. Identification: numerator - total number of patients with fragility fracture submitted; denominator - estimated fragility fracture caseload using annualised data from national hip fracture database (NHFD) in previous 12 months
3. Spine fractures identified: numerator - number of patients submitted with a spine fracture as primary fracture site; denominator – total number of patients submitted
4. Time to bone health assessment within 90 days: numerator - number of patients with date of assessment date of DXA = 90 days or less; denominator - total number of patients submitted
5. Time to DXA within 90 days: numerator - number of patients with date of DXA - date of fracture = 90 days or less; denominator - total number of patients submitted minus number where DXA already done

6. Falls assessment: number of patients with a falls assessment performed, recommended, referred for or already under falls service; denominator - total number of patients submitted
7. Bone therapy recommended as clinical decision not to treat or inappropriate: numerator - number of patients with a treatment recommendation as inappropriate; denominator - total number of patients submitted
8. Strength and balance commenced: numerator - number of patients initiating a strength and balance class within four months of date of fracture; denominator - number of patients with a falls assessment performed, recommended, referred for minus those already under falls service
9. Number of patients followed up post fracture = yes : numerator - recorded follow-up 12 – 16 weeks post index fracture; denominator - number of patients with a bone therapy treatment recommendation or referred to GP or referred to other clinician minus patients recorded as died
10. Commenced bone therapy at 16 weeks: numerator - number of patients commenced or continuing bone specific therapy within four months of date of fracture; denominator - number of patients with a treatment recommendation or referred to GP or referred to other clinician minus patients recorded as died
11. Did the patient confirm adherence to prescribed bone sparing drug at 12 months: numerator - number of patients continued taking recommended drug or switched drug; denominator - number of patients with a treatment recommendation or referred to GP or referred to another clinician minus patient died

Osteoporosis QOF indicators 2017-2018:

- OST004: The contractor establishes and maintains a register of patients: Aged 50 or over and who have not attained the age of 75 with a record of a fragility fracture on or after 1 April 2012 and a diagnosis of osteoporosis confirmed on DXA scan, and aged 75 or over with a record of a fragility fracture on or after 1 April 2014 and a diagnosis of osteoporosis
- OST002: The percentage of patients aged 50 or over and who have not attained the age of 75, with a fragility fracture on or after 1 April 2012, in whom osteoporosis is confirmed on DXA scan, who are currently treated with an appropriate bone-sparing agent
- OST005: The percentage of patients aged 75 or over with a record of a fragility fracture on or after 1 April 2014 and a diagnosis of osteoporosis, who are currently treated with an appropriate bone-sparing agent

NHS England. NHS Rightcare commissioning for value focus pack tool; musculoskeletal conditions, trauma and injuries. Osteoporosis and fragility fractures pathway. Tool containing CCG level data on a number of osteoporosis and fragility fracture related indicators.

9. Collaborative care for severe injury – hip fractures

The national hip fracture database (NHFD) is a web-based audit of 177 acute hospitals in England, Wales, and Northern Ireland that treat hip fractures, which assesses the management of patients aged 60 and older with hip fractures against nationally agreed standards. The data submitted to the NHFD also supports the payment by results best practice tariff scheme where a financial uplift can be awarded per patient for meeting eight quality criteria.

Effectiveness

There is evidence that adherence to best practice tariff quality criteria results in a reduction of mortality, an increase in patients receiving osteoporosis treatment, and reduced time to surgery and length of stay.²²

Resources

Clinical guidance

[NICE CG124 The management of hip fracture in adults. 2011.](#)

Quality standards

[NICE QS16 Hip fracture in adults. 2017.](#)

Patient information

[Royal College of Physicians. My hip fracture care: 12 questions to ask. A guide for patients, their families and carers. 2016.](#) Information on what care patients should expect after a hip fracture.

Clinical audit/commissioning support/professional development

[National hip fracture database website.](#) Includes data, annual reports, hospital dashboards, key recommendations for commissioners.

²² Chamberlain M and Pugh H. Improving inpatient care with the introduction of a hip fracture pathway. BMJ Qual Improv Report 2015;4.

Indicators

Quality metrics required to pass best practice tariff (all required):

- time to surgery from arrival in an emergency department, or – if an admitted patient – time of diagnosis to the start of anaesthesia, is within 36 hours
- assessed by a geriatrician in the perioperative period (within 72 hours of admission)
- fracture prevention assessments (falls and bone health)
- an abbreviated mental test performed before surgery, score recorded in NHFD
- a nutritional assessment during the admission
- a delirium assessment using the 4AT screening tool during the admission (new)
- assessed by a physiotherapist the day of or day following surgery (new)

NHS outcomes framework

- 3.5 Proportion of patients with hip fractures recovering to their previous levels of mobility/walking ability at (i) 30 days and (ii) 120 days

Arthritis Research UK's MSK recommended indicator set for musculoskeletal health services has three hip fracture related indicators. These are:

- prevalence of hip fracture: rate of hospital admissions for hip fracture/fractured neck of femur per person per year for defined clinical commissioning group (CCG) area, standardised by age and sex
- percent of hospital inpatient admissions for hip fracture which qualify for fragility hip fracture conditional best practice tariff payments: numerator - number of hospital admissions in period qualifying for conditional best practice tariff for fragility hip fracture; denominator - number of hospital inpatient admissions in period for hip fracture for CCG area
- percent of patients with hip fracture, admitted to hospital from own home, returning home within 30 days: numerator: number of patients from CCG area in the National Hip Fracture Database extract who return home within 30 days by area; denominator - patients in the NHFD from CCG area

10. Checklist for commissioners and strategic leads

	Red/ amber/ green
Strategy and governance	
1. Falls and bone health needs assessment carried out	
2. Falls and fracture prevention strategy and action plan agreed including mapped interdependences with strategic delivery plans for relevant conditions, populations and models of care	
3. Local falls, bone health and frailty pathways agreed	
4. Health and Wellbeing Board signed off falls and fracture prevention strategy and action plan	
5. Partnership group with operational oversight of falls and fracture prevention strategy agreed, including multi-morbidity and frailty	
6. Falls and fracture prevention strategy evaluation framework agreed	
7. Falls and bone health commissioning lead agreed, including multimorbidity and frailty as remits	
8. Strategies and action plans relating to conditions that increase the risk of falls and fractures detail actions to reduce this risk	
9. Strategic approaches to housing address falls prevention and promote healthy ageing	
Delivering interventions and services	
10. Activity and services that reduce falls and fracture risk factors such as strength and balance physical activity, smoking cessation and reducing alcohol intake are explicitly recognised as doing so	
11. Risk factor reduction across the life course is delivered including healthy lifestyles promotion targeting people aged 40 and over to reduce ill health in older people	

12. Non-specialist workforce development around falls awareness, case finding and risk reduction delivered	
13. Local organisations sign up for falls case finding; routes for case finding are maximised	
14. Patients with frailty identified as at risk of falls by tools such as electronic frailty index (eFI) receive multifactorial intervention	
15. Services commissioned to attend people who have fallen including rapid assessment if not transported to hospital	
16. Falls prevention service specification in line with quality standards signed off	
17. Frailty service specification in line with quality standards signed off	
18. Fracture liaison service specification in line with quality standards signed off	
19. Strength and balance exercise programme specification signed off if not part of specialist falls service	
20. Strength and balance exercise programmes are delivered in line with evidence base/quality standards	
21. Local physical activity opportunities mapped and strength and balance optimised	
22. Systematic interventions to identify and mitigate home hazards delivered	
Data collection	
23. Local indicator set for collection agreed in addition to national indicators	
24. Data systematically collected from older people and their carers and families on outcomes and experience	
25. Data collected on number of patients identified as frail by eFI and at risk of falls receiving multifactorial intervention	
26. Data collected on number of referrals to strength and balance programmes (by referral source) and completing programmes	

27. Pre and post intervention measures collected eg physical function (timed up and go), fear of falling, falls risk/rates	
28. Commissioners collect data on high risk care setting falls and falls prevention governance	
29. Local providers participate in all relevant clinical audits; commissioners monitor data	

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