What can we do about falls in the home? A webinar for practitioners

The research and implementation evidence for falls prevention: a whistle stop tour

Professor Dawn Skelton

Professor of Ageing & Health

Glasgow Caledonian University

Declaration of Interest: Director of Later Life Training, not for profit training organisation.

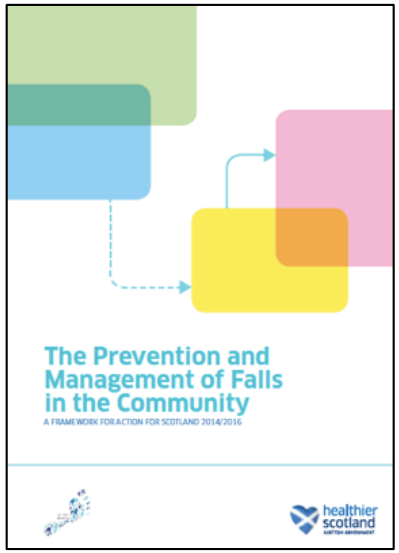
Falls in Scotland

- 868,512 people aged >65
- 16,549 admissions to hospital
- Average length of stay
  - Faller – 19 days
  - Fracture – 29 days
- 39% not discharged to their own home

Costs (2010/2011):

- £470 million a year
- majority of the costs (45%) or long term care

Scottish Govt Health Directorate, 2013



FALLS PROGRAMME

ACTIVE & INDEPENDENT LIVING PROGRAMME

Fear of Falling

- Fear and lack of confidence in balance predict
  - Deterioration in physical functioning
  - Decreases in physical activity, indoor and outdoor
  - Increase in fractures
  - Admission to Institutional Care

"It's the fear that restricts me. In my mind I know that I can't [walk outside]. The fear of falling and not having the strength to go out, that stops me from going out..." (Female, 60yrs)

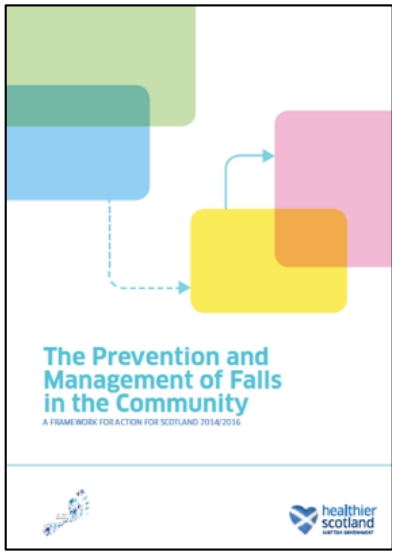
Arfken 1994, Vellas 1997, Cumming 2000, Horne 2011

Risk Factors for Falls

	All fallers (Odds Ratio)	Recurrent Fallers (Odds Ratio)
History of Falls	2.8	3.5
Gait Problems	2.1	2.2
Walking Aids Use	2.2	3.1
Vertigo	1.8	2.3
Parkinson's Disease	2.7	2.8
Antiepileptic Drug Use	1.9	2.7
Physical Disability	1.6	2.4
Disability in Instrumental Activities in Daily Life	1.5	2.0
Fear of Falling	1.6	2.5

Deandrea 2010

Prevention & Management of Falls in the Community



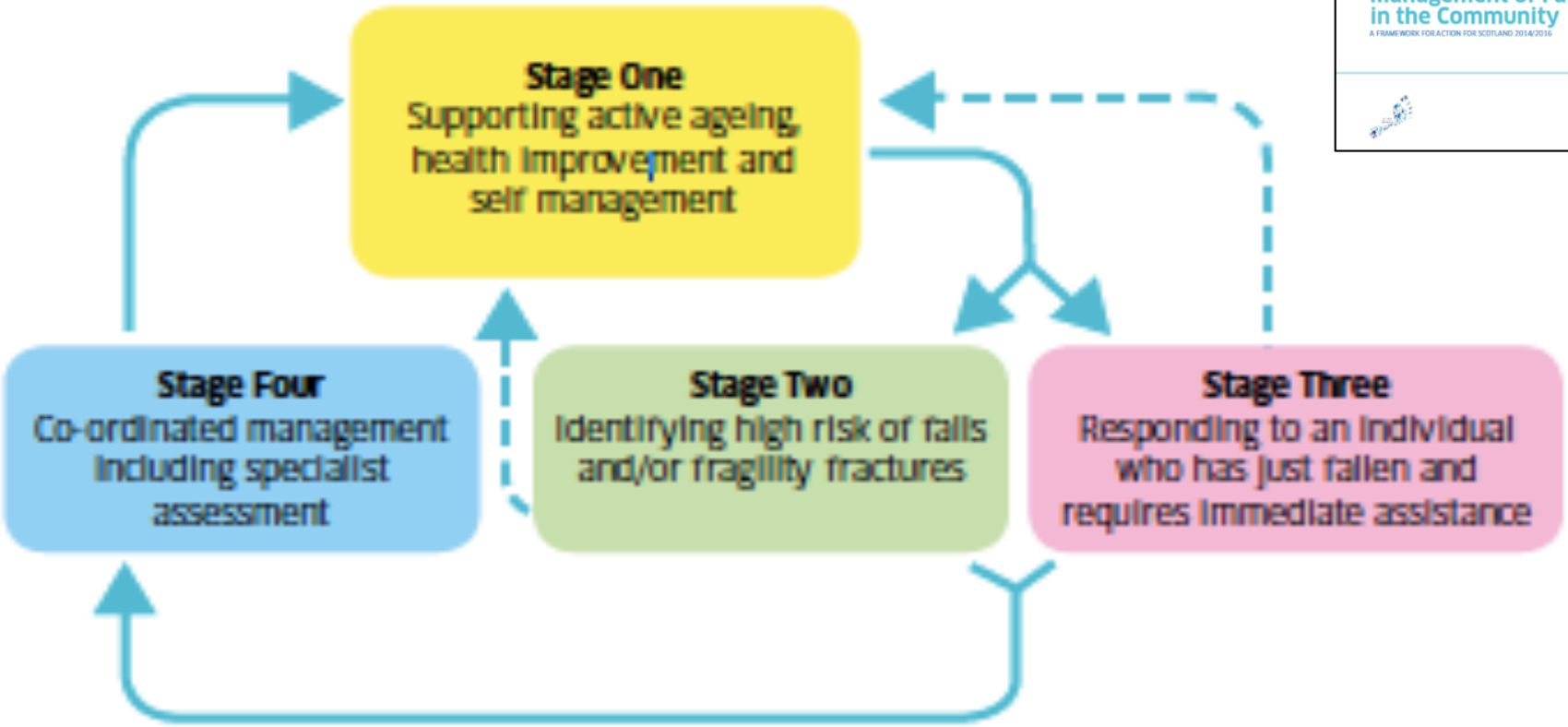
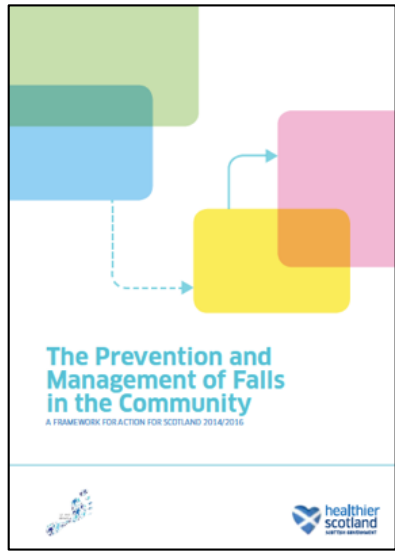


Figure 1 Up and About Pathway, QIS 2010

The Prevention and Management of Falls in the Community: A FRAMEWORK FOR ACTION FOR SCOTLAND 2014/2016

Prevention & Management of Falls in the Community



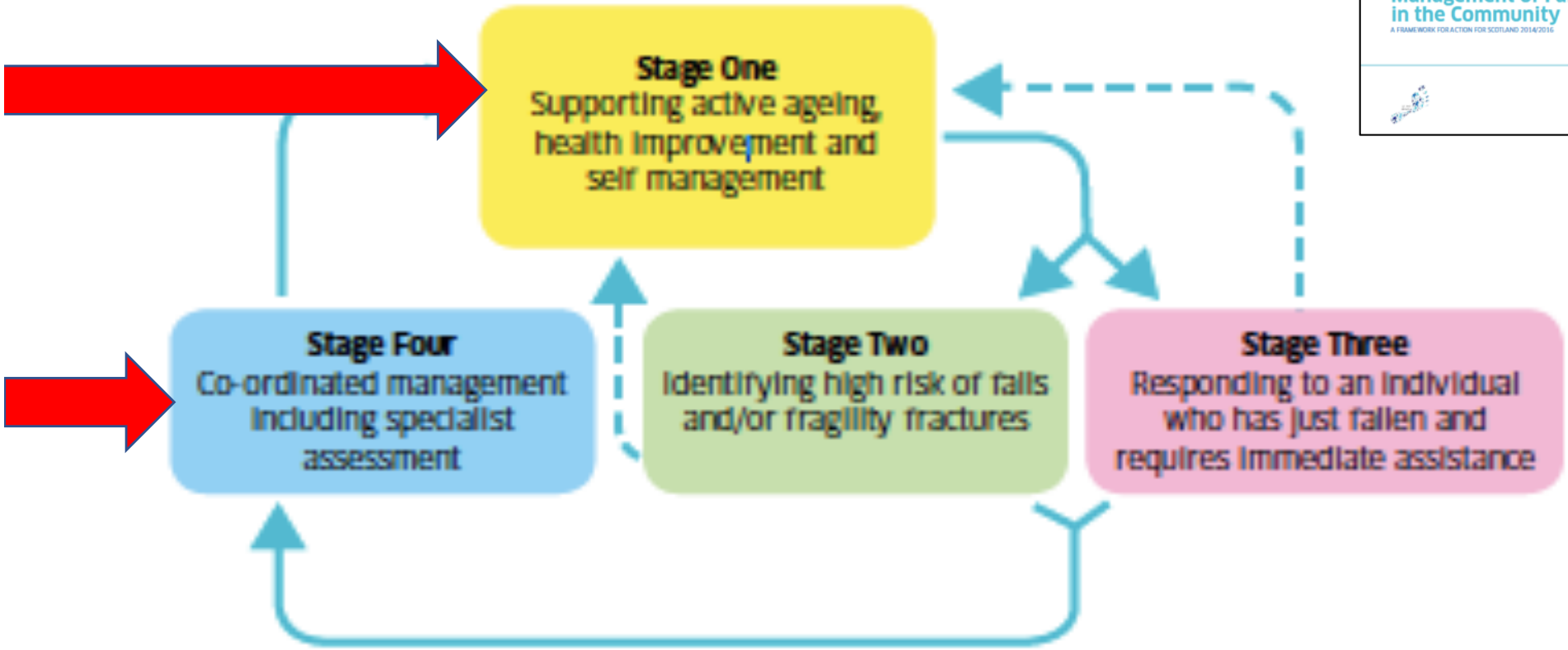


Figure 1 Up and About Pathway, QIS 2010

The Prevention and Management of Falls in the Community: A FRAMEWORK FOR ACTION FOR SCOTLAND 2014/2016

Supporting Active Ageing

Stage One
Supporting active ageing, health improvement and self management

- Risk of falls and recurrent falls **35-40% lower** in those reporting **30+ minutes** of moderate intensity physical activity **per day** compared to those doing less
- Focus on balance and strength
- Focus on reducing sedentary behaviour and interrupting long periods of sitting

UK Chief Medical Officers' Physical Activity Guidelines 2019

Not all physical activity is the same…

Stage One
Supporting active ageing, health improvement and self management

- BUT <u>not</u> all physical activity impacts on the right components of fitness

- In those not achieving physical activity guidelines and at high risk of a fall these activities are not achievable and will not reduce future falls risk

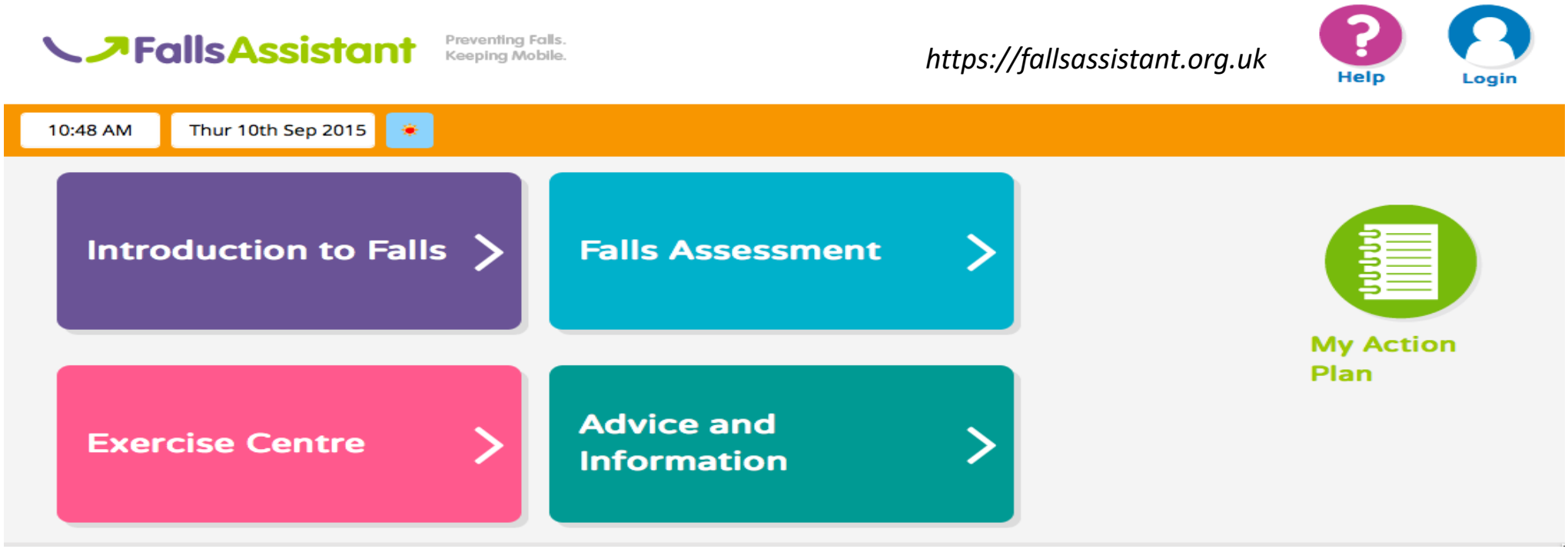
Type of sport, physical activity or exercise	Improvement in muscle function	Improvement in bone health	Improvement in balance
Running	★	★★	★
Resistance Training	★★★	★★★	★★
Aerobics, circuit training	★★★	★★★	★★
Ball Games	★★	★★★	★★★
Racquet Sports	★★	★★★	★★★
Yoga, Tai Chi	★	★	★
Dance	★	★★	★
Walking	★	★	☆
Nordic Walking	★★	?	★★
Cycling	★	★	★

★★★ Strong effect ★★ Medium effect ★ Low effect ☆ No effect ? Not known

Table 2: Types of activities that can help maintain or improve aerobic capacity, strength, balance and bone health and contribute to meeting the physical activity guidelines (8)

UK Chief Medical Officers' Physical Activity Guidelines 2019
Skelton & Mavroeidi, JFSF 2019

Encouraging physical literacy and falls self efficacy



Sedentary behaviour associated with reduced muscle strength, reduced bone density and increased falls and frailty. Breaking long periods of sitting maintains/improves physical function

Copeland 2017; Harvey 2019; Chastin 2014; Harvey 2018

Multifactorial Interventions for reducing falls

Stage Four
Co-ordinated management including specialist assessment

- Multifactorial assessment with multidisciplinary intervention
  - 23% reduction in rate at which people fall
  - No difference in the number of people who fall, hospital admissions or medical attention
  - Possible reduction in fall related fractures
  - Most evidence for home hazard assessment and behavioural interventions, medication review and action, group and home-based strength and balance exercise
  - Exercise interventions alone were as effective as multifactorial interventions

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Hopewell. Cochrane Library 2018; Gillespie. Cochrane Library 2012

Exercise Interventions for reducing falls

Stage Four
Co-ordinated management including specialist assessment

- Exercise
  - Reduces rate of falls by 23%
  - Reduces the number of people who fall by 15%
  - Reduces fall related fractures by 27% *
  - Reduces falls requiring medical attention by 39% *

  - Not all exercise is the same! …..

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* Evidence not as robust

Sherrington. Cochrane Library 2019

Exercise Interventions for reducing falls

Stage Four
Co-ordinated management including specialist assessment

- Types of exercise
  - Balance & Functional Exercises
    - reduces rate of falls by 24%
    - number of people who fall by 13%
  - Multiple types of exercise (Balance, Functional & resistance exercise)
    - reduces rate of falls by 35%
    - number of people who fall by 22%
  - Tai Chi *
    - may reduce rate of falls by 19%
    - and number of people experiencing falls by 20%
- Programmes that are primarily based on resistance exercise, dance or walking have uncertain effects

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* Evidence not as robust

Sherrington. Cochrane Library 2019

Cost effectiveness

- Return on Investment
  - Home safety assessment & Intervention
    - Most effective if OT delivered
  - Exercise programmes (50 hrs+ > 6 mths, 3 x p/w)
    - Falls Management Exercise (FaME/Postural Stability Instructor Led) (*Stage 1 and Stage 4 of Up & About Pathway*)
    - Otago Exercise Programme (OEP) (*Stage 4 of Up & About Pathway*)
    - Tai Chi
    - Fidelity to original effective components (dose, frequency, intensity, challenge, resistance, right population)

Public Health England 2017, 2018

Falls and fracture consensus statement: supporting commissioning for prevention

Ref: PHE publications gateway number: 2016588
PDF, 890KB, 22 pages

This file may not be suitable for users of assistive technology. Request an accessible format.

Falls and fracture consensus statement: resource pack

Ref: PHE publications gateway number 2017193
PDF, 417KB, 34 pages

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Otago

- Home based programme with support visits and calls over 1 year[1]
- RCTs in > 65s living at home, receiving home care and recently discharged from hospital [1-5]
- Most effective in over 80s and frailer [1-5]
- Group based improves balance and strength faster than home-based [6]

- Reduces falls rate and falls risk (home, > 6 months)
- Improves physical function and confidence
- Reduces fear of falling [6]
- Improves cognitive function [7]
- No effect on habitual physical activity, potential decrease [8-10]
- Cost effective if delivered with fidelity [11]
- Lack of effectiveness if poor adherence/no ankle weights or balance progression [8]

[1] Campbell 1997, [2] Robertson 2001; [3] Campbell 2005; [4] Sherrington 2019, [5] Bjerk Age Ageing 2019, [6] Kyrdalen 2013, [7] Liu Ambrose 2008, [8] Iliffe. HTA 2014; [9] Adams. BMC Geriat 2019; [10] Waterman Trials 2016; [11] Public Health England 2017/8;

FaME

- RCTs in frequent falling women >60/65yrs[1,2,3]
- RCT in sedentary >65s from GP practices[4]
- Feasibility in visual impairment[5]
- Evaluations in practice[6] and Implementation Study >65s self/GP referral[7]

- Reduces falls rate and falls risk (group + home, > 6 months)
- Increases habitual physical activity (105-170 mins/wk)
- Improves physical function and confidence
- Reduces fear of falling [3]
- Regains the skill to get up from the floor
- Cost effective if delivered with fidelity[8,9]

http://arc-em.nihr.ac.uk/clahrcs-store/falls-management-exercise-fame-implementation-toolkit

[1] Skelton. Age Ageing 2005; [2] Skelton. JFSF 2019; [3] Yeung. PHCR&D 2015; [4] Iliffe. HTA 2014; [5] Adams. BMC Geriat 2019; [6] Hedley. PTP 2010; [7] Carpenter. Inj Prev 2018; [8] Public Health England 2017/8; [9] Gateshead OP Assembly 2017

Implementation

Fidelity: 72%-78% criteria met	Reasons for not adhering: • concern of overloading people with home exercises, deterring future attendance • lack of confidence to deliver aspects e.g. Tai Chi and floor work
Quality: 80%-84% criteria met	Reasons for lower scores: • Not asking about falls in the previous week • Not explaining the purpose of exercises • Not clarifying the exercises • Not reinforcing the exercises • Not correcting poor positions 43% of people progressed the recommended 3+ resistance band levels Communities of practice consisting of instructors and their managers offered opportunities for quality improvement (QI)

http://arc-em.nihr.ac.uk/clahrcs-store/falls-management-exercise-fame-implementation-toolkit

Final Thoughts

- STAGE 1 - Consistent messages to ALL patients – sit less, move more
- STAGE 4 - Help patients reach effective dose of highly challenging strength and balance exercise to reduce frailty and falls
  - Ensure transition on and continued exercise beyond your 'service'
  - Support patients to transition on to self directed exercise
- The evidence is clear for exercise (whether part of a multifactorial intervention or alone)
  - Maintain fidelity (type, intensity, frequency, duration)
  - Adherence is key – support needed!
- We know what works, just need to implement it! Different programmes for primary and secondary prevention