Including older adults in health enhancing physical activity: Learning lessons from implementing an evidence-based falls prevention intervention in different healthcare contexts and countries

Chair: Prof Frances Horgan, School of Physiotherapy, Royal College of Surgeons in Ireland

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Prof Elizabeth Orton, Unit of Lifespan and Population Health, University of Nottingham
Dr Ruth McCullagh, School of Clinical Therapies, University College Cork

What we will cover:

- FaME: Falls Management Exercise for those at high risk or intermediate risk of falls. Improving habitual physical activity, physical function and reducing falls
- Lessons learned on implementation and scalability of FaME in the UK
- FaME Ireland: improving Reach, Effectiveness, Value and Sustainability in Ireland: Case Studies for Learning

Dawn Skelton

Professor of Ageing and Health: Glasgow Caledonian University

Member: EUGMS SIG Falls and Fractures; World Falls Guidelines Steering Committee

Chair: BGS Rehabilitation Group, Older Adult Panel of UK CMO Physical Activity Guidelines for Health

Conflict of Interest: Director of Later Life Training Ltd. A not-for -profit organisation that runs falls prevention exercise training in the UK, Europe and Singapore for health and fitness professionals.

Falls

- 30-40% community dwelling >65 yrs fall each year
  - 30-50% minor injury
  - 5-6% major injury (excluding fracture)
  - 5% fractures; 1% hip fractures

- 50% hospital admissions for injury due to fall
- History of falls a major predictor future fall

- >10% ambulance call outs due to falls (up to 40% not taken into hospital)
- Declining activity, increasing frailty, receipt of care

Concerns / avoidance of activity

- Concerns about falling leads to reduced physical activity, both indoors and outdoors
  - Deterioration in physical functioning
  - Decreases in physical activity, indoor and outdoor
  - Increase in fractures
  - Admission to Institutional Care
- Changes behaviour as a result
  - increases risk of frailty (OR 1.18 - 9.87)
  - predicts increase in repeat falls over 8-year period
- Hip fractures more likely in those with frailty and those with a high fear of falls

De Souza et al. Clin Interv Aging. 2022, Hartley et al. Age Ageing 2023, Montero-Odasso et al. Age Ageing 2022

NO STATEMENTS ON AGE ONLY ON 'RISK'

Age and Ageing 2022; 51: 1–36
https://doi.org/10.1093/ageing/afac205

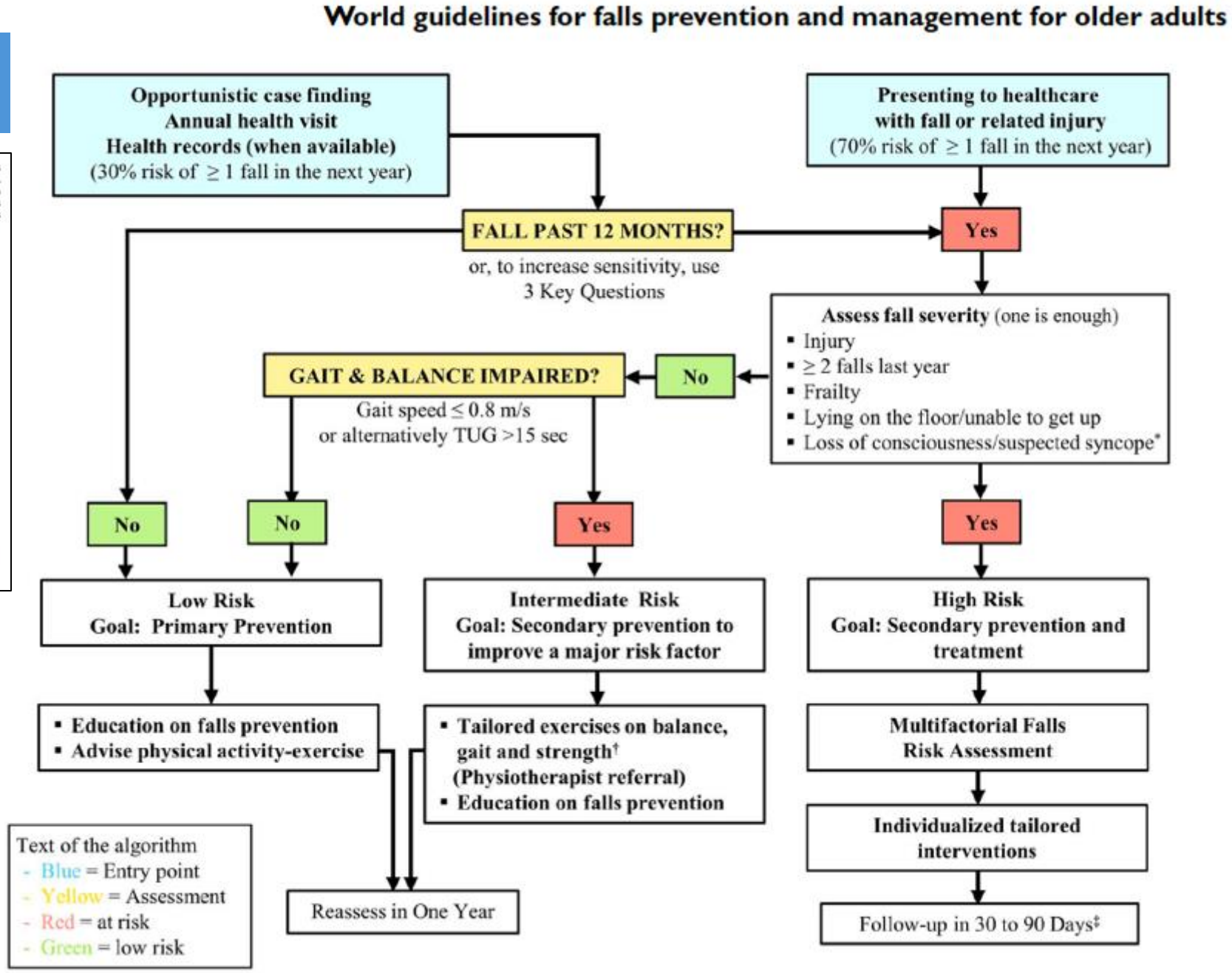
GUIDELINE

World guidelines for falls prevention and management for older adults: a global initiative

Manuel Montero-Odasso[1,2,3,†], Nathalie van der Velde[4,5,†], Finbarr C. Martin[6], Mirko Petrovic[7], Maw Pin Tan[8,9], Jesper Ryg[10,11], Sara Aguilar-Navarro[12], Neil B. Alexander[13], Clemens Becker[14], Hubert Blain[15], Robbie Bourke[16], Ian D. Cameron[17], Richard Camicioli[18], Lindy Clemson[19], Jacqueline Close[20,21], Kim Delbaere[22], Leilei Duan[23], Gustavo Duque[24], Suzanne M. Dyer[25], Ellen Freiberger[26], David A. Ganz[27], Fernando Gómez[28], Jeffrey M. Hausdorff[29,30,31], David B. Hogan[32], Susan M.W. Hunter[33], Jose R. Jauregui[34], Nellie Kamkar[1], Rose-Anne Kenny[16], Sarah E. Lamb[35], Nancy K. Latham[36], Lewis A. Lipsitz[37], Teresa Liu-Ambrose[38], Pip Logan[39], Stephen R. Lord[40,41], Louise Mallet[42], David Marsh[43], Koen Milisen[44,45], Rogelio Moctezuma-Gallegos[46,47], Meg E. Morris[48], Alice Nieuwboer[49], Monica R. Perracini[50], Frederico Pieruccini-Faria[1,2], Alison Pighills[51], Catherine Said[52,53,54], Ervin Sejdic[55], Catherine Sherrington[56], Dawn A. Skelton[57], Sabestina Dsouza[58], Mark Speechley[3,59], Susan Stark[60], Chris Todd[61,62], Bruce R. Troen[63], Tischa van der Cammen[64,65], Joe Verghese[66,67], Ellen Vlaeyen[68,69], Jennifer A. Watt[70,71], Tahir Masud[72], the Task Force on Global Guidelines for Falls in Older Adults[‡]

HIGH RISK

- Past fall with injury
- Multiple falls (≥2 falls) in last yr
- Inability to get up after the fall without help
- Frail



Montero-Odasso et al. Age Ageing 2022

The evidence.....

THE COCHRANE COLLABORATION®

Exercise for preventing falls in older people living in the community

- reduces rate of falls by 23% (RaR 0.77)
- reduces the number of people experiencing one or more falls by 15% (RR 0.85)
  - (both falls outcomes irrespective of high or lower risk of falls at baseline)
- may reduce fall related fractures (RR 0.73)
- may reduce falls requiring medical attention (RR 0.61)

Sherrington et al. Cochrane Review 2019

The evidence….. What works best?

- Functional balance and strength
  - Highly challenging balance training + progressive strength training
- Frequency 3 x per week for ≥ 2 hours total
- Duration ≥ 6 months
- = Dose ≥ 50 hours

➢ These types of exercise also reduce fear of falling

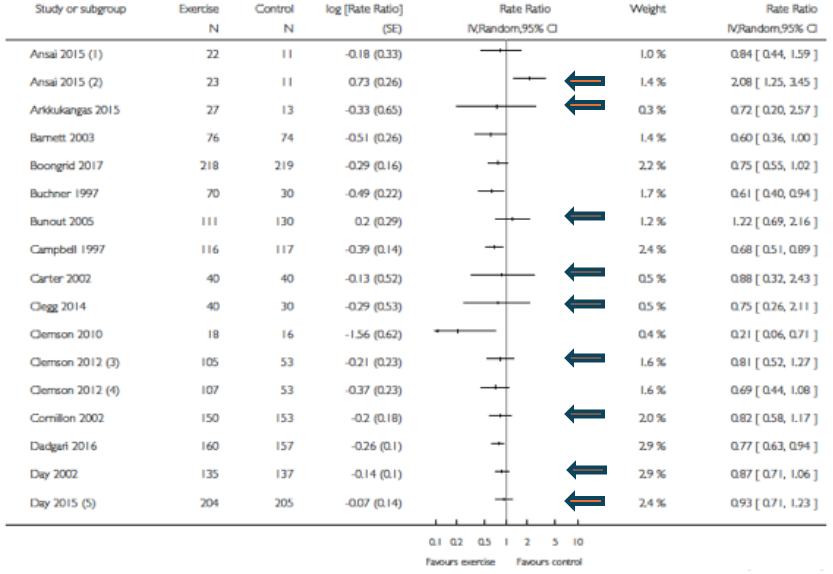
➢ No evidence to support physical activity (eg. walking, dance) or resistance training alone

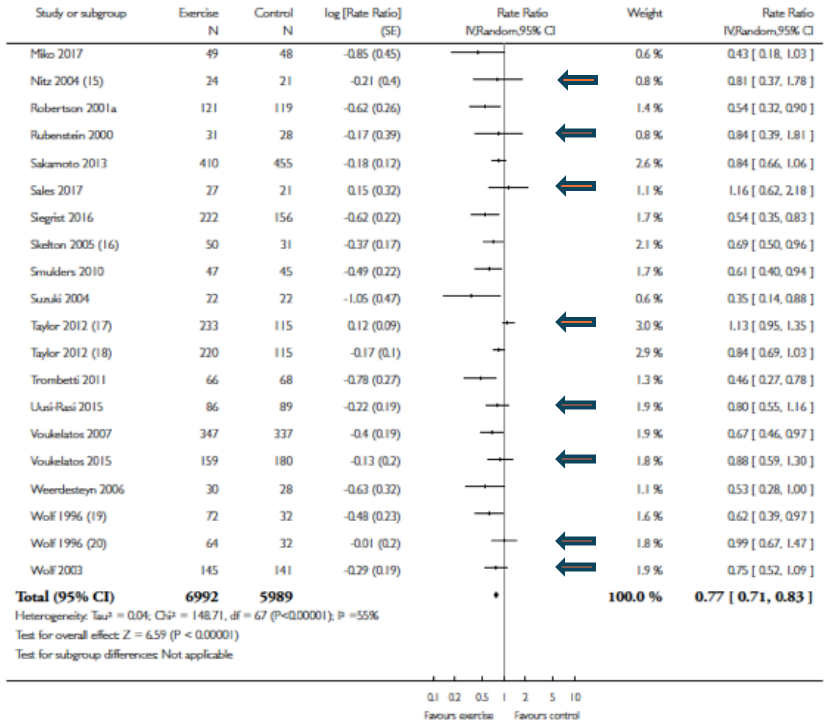
Sherrington et al., JAGS 2008, NSWPHB 2011, BJSM 2016; Cochrane Review 2019; Kendrick Cochrane Review FoF 2014

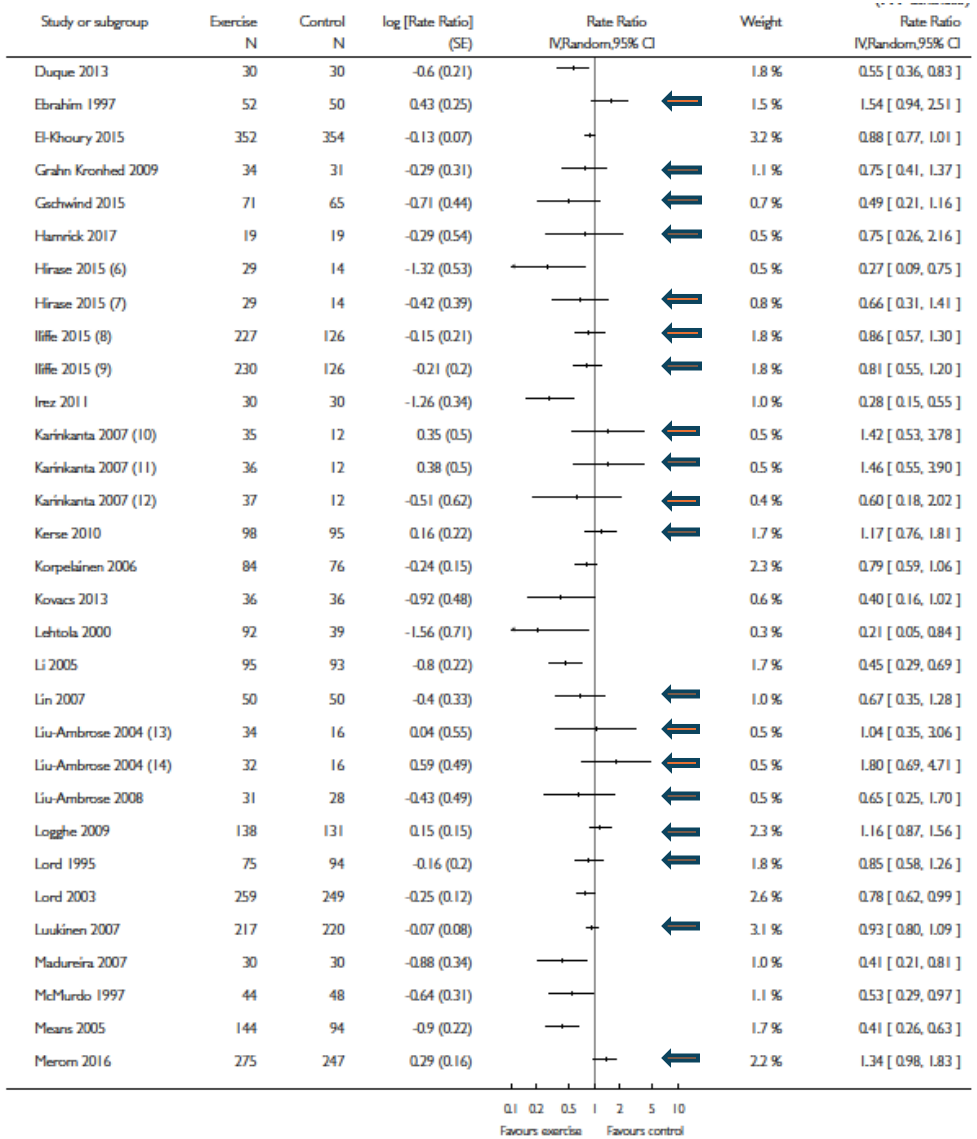
The devil is in the detail

Not all falls prevention exercise programs work

Sherrington et al. Cochrane Review 2019

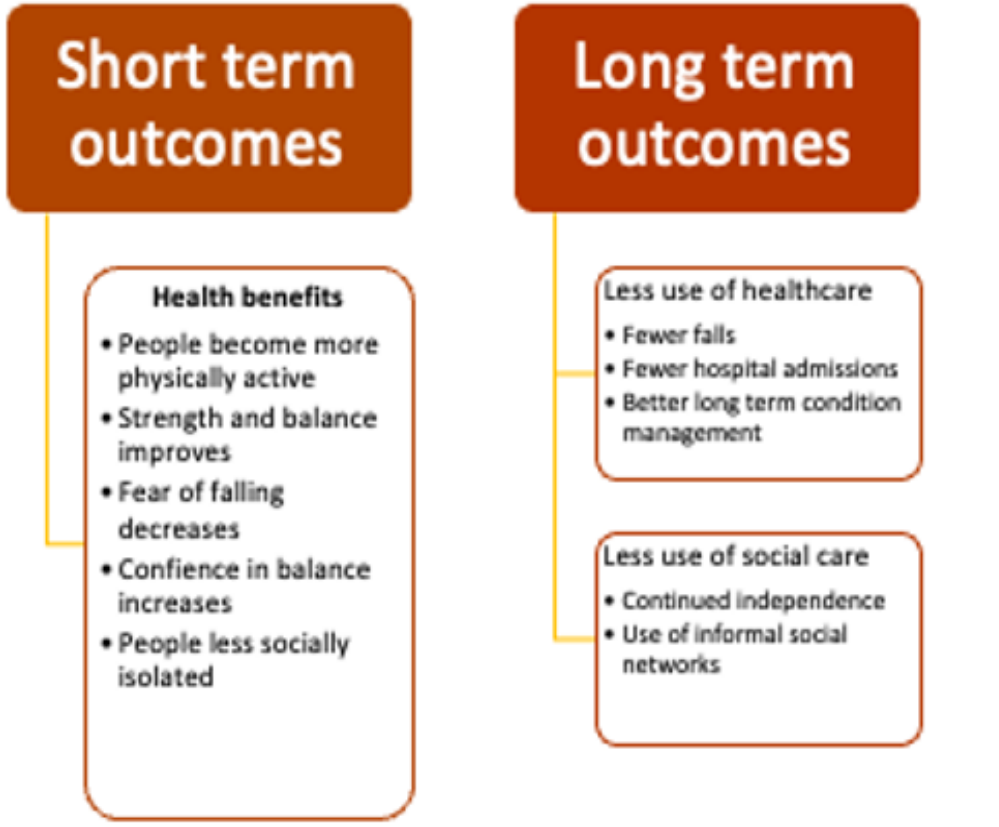






What is FaME?

- 24-week structured exercise programme delivered by Postural Stability Instructors (PSIs)
- Group based with individualised tailoring for ability and progression
- Challenges balance, improves strength, regains stepping reactions and skills to get up from the floor
- Increases in difficulty and resistance over time
- Builds falls self-efficacy
- Supports self management and transition onto other activity opportunities



Skelton et al. Physio Theory Practice 1999

Physiotherapy Theory and Practice (1999) **15**, 105–120

Exercise for falls management: Rationale for an exercise programme aimed at reducing postural instability

Dawn A. Skelton and Susie M. Dinan

- Asymmetry
- Power in lower limbs
- Strength of ankles
- Floorwork to regain skills
- Meet ACSM guidelines for exercise for older people

- Static and Dynamic Balance
- Flexibility (ankles and leg/hip)
- Endurance work
- Tai Chi in cool down

- RCT 1996-1998, funded by Research Into Ageing (Dunhill Medical Trust)

FaME into practice

A Four Point Plan to:

Includes:

7 Evidence Based Activities

1. Dynamic endurance training for balance

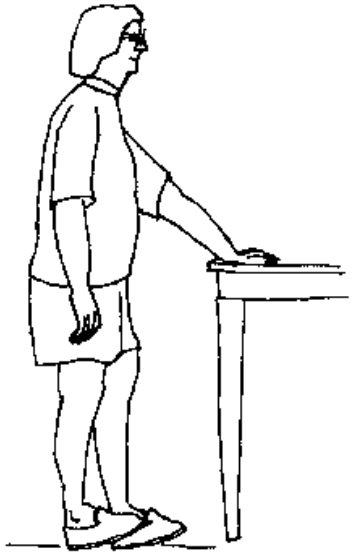
AEROBIC CAPACITY

Older people require aerobic capacity to live their lives.

Training cardiovascular fitness in standing is also a balance challenge and therefor also balance training.

A PSI requires skills to design and lead an aerobic curve to 'individuals' in a group, achieving the CV training aim whilst tailoring to reduce balance challenge.

2. Dynamic balance training



- Reduced Base of Support (BOS)
- Moving Centre of Mass (COM)
- Reduced arm support
- Functional stability limits
- Dynamic stability
- Anticipatory control
- Reactive control

STANDING BALANCE (DYNAMIC/ MOVING)

To improve standing balance/reactions we need to specifically target training approaches in standing dynamic balance situations.

A PSI requires skills to design and lead a standing balance training component in groups, to tailor and progress challenge for each individual and to support practice at home to achieve training dose (to reduce falls).

Seated options may be required to skill-up and progress to standing.

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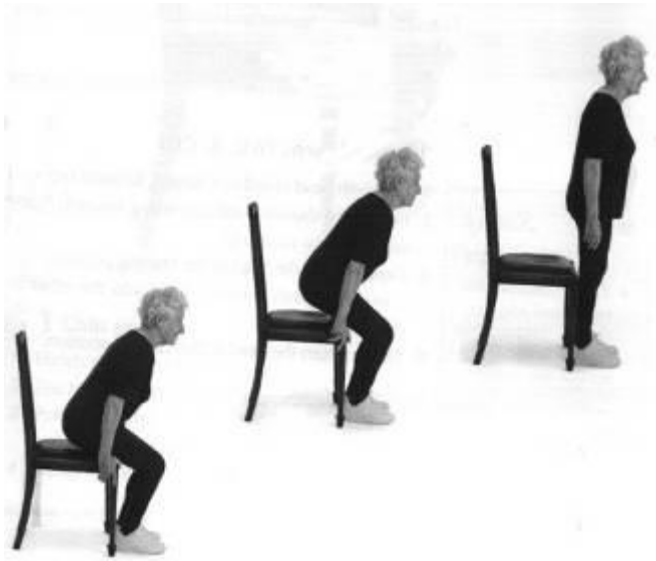
3. Targeted resistance training (weights, bands and body weight) including targeted bone loading

- for leg and ankle strength
- for arm and back
- open & closed chain



SEATED & STANDING STRENGTH

Improving strength requires effort and sufficiently dosed intensity and volume of training. Something is better than nothing but FaME and PSIs strive for more.

A PSI requires skills to design and develop strength progressions over time for each individual in the group and for home practise.

4. Backward chaining

GETTING DOWN/UP FROM FLOOR

Getting down and up from the floor is a life skill, without it poor outcomes may result.

A PSI requires skills to support individuals and groups to learn this skill following best practice backward chaining approach.

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@LaterLifeTrain

5. Functional floor activities

FLOOR BASED STRENGTH, BALANCE & SKILLS

Getting down and up from the floor is a life skill, without it poor outcomes may result.

Once on the floor further strength, balance and functional movement training is included over time.

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@LaterLifeTrain

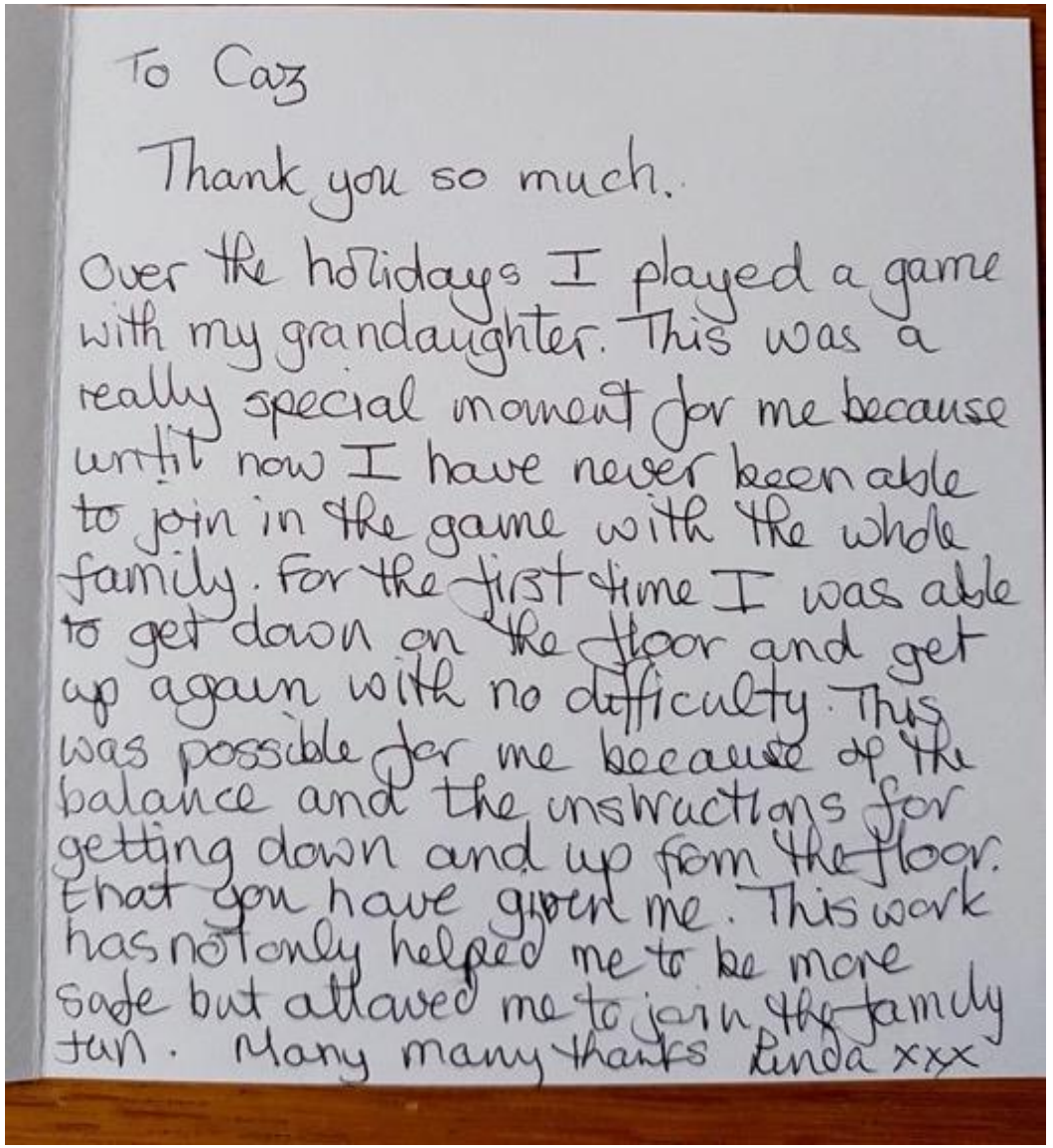
Importance of floor work

- To avoid long lies
- To reduce fear of falls
- To get in and out of the bath
- To engage in fun activities again

- Yet the most common element of FaME **not** provided in practice

- Health & safety policies
- Lack of staff to supervise
- Risk aversion of providers

Strong older patients fall & get back up.
Weak older patients fall & stay down.
Falling isn't the problem, deconditioning is.
#endFJparalysis
get up get dressed be active



6. Flexibility training for leg and ankle, chest, spine

FLEXIBILITY

Getting down and up from the floor requires big ranges of motion around all key joint actions. Flexibility is essential to support comfortable movement in life and successful training of other components. It forms part of the coll down element (and supports mobility in the warm-up element).

7. Sustained, three dimensional adapted Tai Chi training

ADAPTED TAI CHI MOVES

Slowness, coordination, relaxation, hand-eye coordination through a sequence of 3-dimensional moves brings calm and often laughter.

Tai Chi may be part of an onward journey after FaME and forms part of the cool down for PSIs.

FaME progression over time

Skilling Up

- Prepare for training loads/intensities, building confidence in technique
- Neuro-muscular gains in strength; balance, flexibility and stamina improvements

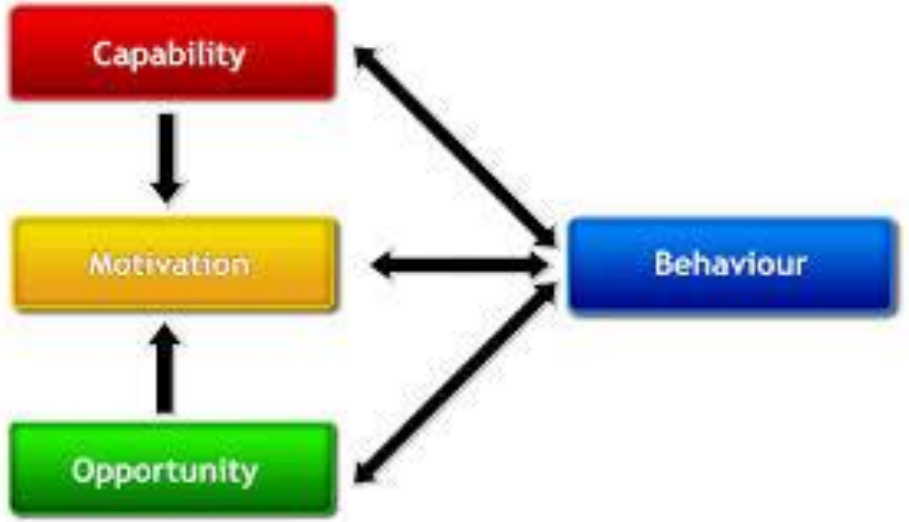
Training Gains

- Moving into training with optimum repetitions, ranges, loads and complexity
- Building muscle size, changing aerobic capacity – progressive overload

Maintaining Gains

- Keeping the gains, avoiding reversibility
- Transitioning into self-management

Support and Encouragement



FaME is more than a set of exercises

- A range of strategies that support participants, eg.
  - Education
  - Goal setting and self-monitoring
  - Overcoming obstacles and difficulties (lapses/relapses)
  - Highlighting successes
  - Providing individual and group support

FaME support strategies

Support strategies employed

- Referral in and transition on…..
- Education on effect of each exercise on daily living (during sessions)
- Education on the purpose of each component of exercise (during sessions)
- Follow up of non-attendance
- Weekly exercise diary discussed, goal setting and problem solving
- Peer/buddy support provided in classes and encouraged travelling together
- Social cohesion - Naming the group, organising a social programme, time before and after sessions to socialise

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@GCUReaCH

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@LaterLifeTrain

(Skelton, 1999, 2005; Iliffe 2015, Skelton 2018; Orton 2021)

Violet's story (age 78)....FaME benefits

- Fractured hip 2 years prior, recovered, but much frailer/ still falling
- Started FaME
  - Needed transport to get to class, used a walker, very sedentary, fearful, (angina, COPD, osteoporosis, type 2 diabetes, high BP)
- FaME 3 months in
  - First time to the floor since hip fracture, now using a stick, now attending local lunch club again
- FaME 6 months in
  - Got the bus to the class, uses stick outdoors only
- FaME 9 months in
  - No longer needs walking aid, uses the bath again, started walking, playing netball
- Value of prolonged engagement in progressive structured exercise

FaME – prevents falls

- 24-week structured exercise programme delivered by Postural Stability Instructors
- Group based with individualised tailoring for ability and progression
- Challenges balance, improves strength, regains stepping reactions and skills to get up from the floor
- Increases in difficulty and resistance over time
- **reduces falls rate by between 26-54% (depending on population and duration)**

1. Iliffe et al. BJGP 2015 (sedentary older people at risk, 6 months)
2. Orton et al. Age Ageing 2021 (people at risk of falls, 6 months)
3. Skelton et al. Age Ageing 2005 (frequent fallers, 9 months)

FaME – more than just a falls prevention programme

- Supports self management and transition onto other activity opportunities
- **Increases habitual physical activity (> 105[1]-167[2] minutes per week by end of programme)**
- Improves confidence, reduces concern about falls
- Improves physical function and quality of life[1,2,4,5]
- Maintains bone density[6]
- Changes peoples' lives
- **Return on Investment reports range from £2.89[3]-£13.00[4] - £50.59[5] for every £1 invested**

1. Iliffe. BJGP 2015
2. Orton. Age Ageing 2021
3. PHE RoI 2019
4. Edin Leisure 2016
5. GOPA RoI 2017
6. Duckham. Age Ageing 2015

Benefits of FaME Wider than falls prevention

Psychological / Social	Fitness
Quality of Life (SF12)[1,9,10]	Habitual Physical Activity (using PASE and CHAMPS)[1,2,8]
Fear of falling (FES-I)[1, 8,9]	Walking Speed (using 6MWT)[1]
Confidence (ConfBal/Self-efficacy)[2,3,4,6,8,9,10,12]	Balance (TUG, BBS, 1LS, FR, 4SBT)[1,4,7,8,9,10,12]
Socialisation and participation (qualitative)[1,3,11,12]	Strength (30sCR, Dynamometer)[4,7,9,12]
Risk of death (mortality 3 year3 post)[3]	Power (Nott Power Rig)[7]
Moving into care[3]	Bone Mineral Density (DEXA) Maintenance[5✣17]
Expectations of Exercise (OEE)[2,6,12]	Avoiding long lies (ability to get up off floor)[3,7]

1. Yeung PHCR&D 2015; 2. Iliffe HTA 2014, BJGP 2015; 3. Skelton, Age Ageing 2005; 4. Gateshead ROI 2017; 5: Skelton JAPA 2008 ✣9 month programme (not seen in 6 month programme, Duckham Age Ageing 2015); 6. Gawler AGG 2016. 7. Skelton et al. JFSF 2019. 8. Orton et al. Age Ageing 2021. 9. James et al. BMC Pubic Health 2022; 10. Christoforou et al. Disabil Rehab 2018; 11. Jayes et al. JFSF 2023; 12. Hedley et al Physio Theory Pract 2010

Policy context and support for FaME

- 2009 Department of Health Prevention Package recommends FaME
- 2012 RCP Audit of falls services in NHS recommend FaME
- 2015 CDC in US Cite FaME in Falls Compendium
- 2015 training of PSIs in Norway to support Sterk og stødig, (462 instructors trained in 59 Norwegian municipalities), reaching 4000 older people)
- 2017/8 Public Health England recommended FaME as cost-effective and presented Return on Investment data
- 2020 FaME Implementation Manual for Commissioners of Services endorsed by NICE
- 2022 Global Falls Guidelines (draft) exercise recommendations include FaME and links to Implementation Manual and RoI data

Developed by Skelton – FaME small scale RCT

(Research Into Ageing (Dunhill Medical Trust) 2000-2005, frequent falling women, 9 month programme)

ProAct65+ 2008-2013

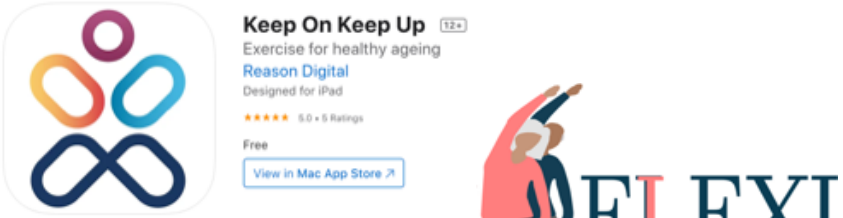
FaME+ Clinical trials (ProAct65+) (NIHR HTA 2009-2014, sedentary older people, 6 month programme, 2 yr follow up)

ViOlet

MIRA ExerGames

FaME + PhiSICAL implementation study in East Midlands (NIHR HTA, 2016-2018, following 28 FaME programmes)
Production of the FaME Implementation Toolkit

FaME+ Rollout FLEXI (ARC National Frailty Programme, 2022-2024) Greater Manchester, Devon & Look Back at East Midlands



FLEXI
Falls Exercise Implementation Study

Over 4500 PSIs trained by Later Life Training since 2000

Evaluating effects locally

- **'Staying Steady' classes, based on the FaME programme, for 20 weeks.**
- Improved strength, balance and confidence, reduced fear.
- The Staying Steady classes are supported by public health funds of £19,146 (approx. £120 per head).
- For every £1 of public health money invested in Staying Steady classes, the return to the public purse is £50.59

Claire Craig
Health and Physical Activity Manager, Edinburgh Leisure

89% Improvement in balance confidence

96% Improved in physical function

75% Not experienced a subsequent fall

63% Have remained active post-programme

http://www.gatesheadopa.org.uk/news/sroi/

Hedley et al. Physio Theory Practice 2010

Cost-effectiveness depends on population

FaME (PSI)

https://www.gov.uk/government/publications/falls-prevention-cost-effective-commissioning

- Without the evaluation costs added

STILL NOT CONSIDERED: Potential benefits to more people meeting PA guidelines (15 mins per day more MVPA) and self efficacy, long lies, reduced fear of falling.

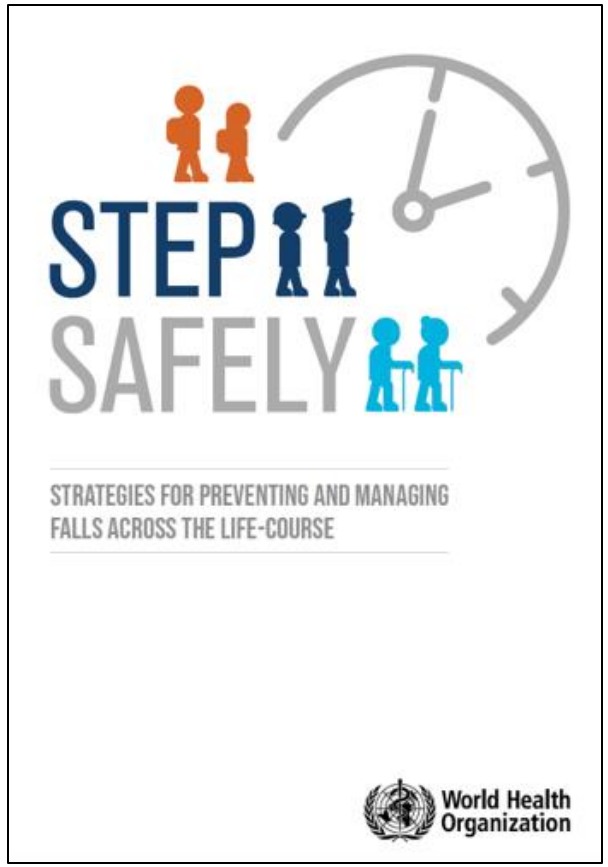
	FaME (PHE tool IRR 0.825, 0.79 control)	FaME (IRR 0.74-Gawler, 0.88 control)	FaME (IRR 0.46-Skelton, 0.90 control)
Net Monetary Benefit	£293.73	£483.92	£946.98
Financial benefits	£219	£301	£499
Financial ROI	£1.04: £1.00	£1.43: £1.00	£2.37: £1.00
Societal benefits	£504	£694	£1,157
Societal ROI	£2.40: £1.00	£3.30: £1.00	£5.50: £1.00

Referral between rehabilitation and trained community exercise partners

- Referral Forms are designed to support:
  - Baseline exercise selection
  - Challenge recommendations
  - Progression (from where)
  - Equipment (what next)
  - Tailoring (floorwork/individualization/ motivational strategies/home exercise support)

https://agile.csp.org.uk/content/referrals

FaME Worldwide



FaME is WHO best practice case study

FaME is detailed in World Falls Guidelines Appendix of good practice

STERK OG STØDIG
TRENINGSGRUPPER FOR SENIORER

PSIs in Norway to support Sterk og stødig, (462 instructors trained in 59 Norwegian municipalities), reaching 4000 older people)

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When reduced falls is the outcome….

You wouldn't give a cancer patient only half the dose of chemotherapy…..

Or give them a different drug that was not known to work…..

Treat falls prevention exercise as 'treatment'

- Effective programme for outcome
- Effective dose / regularity
- Effects discontinue if stop
- Specialist exercise instructors/ physiotherapists

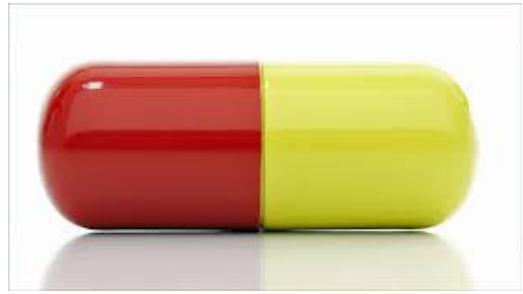
Sherrington et al. Cochrane Database of Systematic Reviews 2019, plus update for Global Falls Guidelines 2021

Number Needed to Treat

- Exercise (correctly dosed and progressed and adhered to) is VERY effective

- NNT to prevent falls
  - 16; Otago (Campbell et al. 2001)
  - 15; Systematic Review (Chang et al. 2004)
  - 11; Systematic Review (Gillespie et al. 2009)
  - 9; FaME (Iliffe et al. 2014)
  - 5; FaME (Skelton et al. 2005)

- NNT
  - 41; Heparin to prevent recurrent venous thromboembolism
  - 50; Aspirin to prevent a cardiovascular event
  - 104; Statins to prevent a heart attack
  - 230; Denosumab for preventing hip fractures



https://thennt.com/

Developed rationale 1999, RCT published 2005

(high risk of falls, women ≥65 yrs, n=100)

1 p/w 1 hour, multicomponent, progressive + 2 x 1 hour p/w home exercise – **9 months**

IRR 0.66
34%

ProAct65+ RCT NIHR HTA 2014

(intermediate risk sedentary older people ≥65yrs, n=1256, high risk fallers excluded)

6 months, reduced adherence to home exercise

IRR 0.74
26%

MVPA 15 mins per day OR 1.78 for meeting PA guidelines

PhiSICAL implementation study 2016

(intermediate risk sedentary older people ≥65yrs)

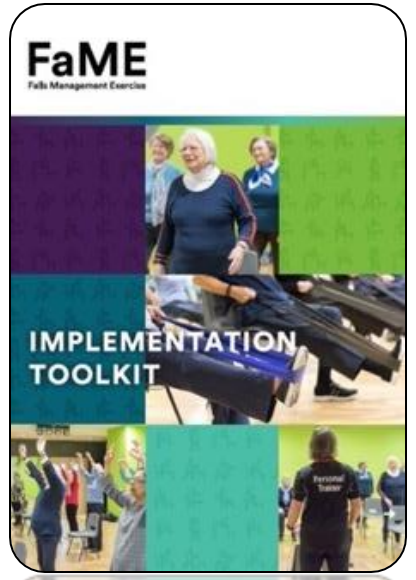
6 months, reduced home ex; band progression; floorwork

IRR 0.82
18%

FLEXI spread study (2022-2025)

Audit on fidelity and delivery

Most **3 months** or less



Lessons learned about the implementation and scalability of FaME in the UK

Professor Elizabeth Orton,
on behalf of the PhISICAL and FLEXI teams

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Timeline…

Clinical trials done (e.g. HTA 2014 sedentary older people, 6 month programme, ProAct65+ 2015)

Recommended in guidelines (e.g. NICE, World Falls guidelines)

Translational gap

Implementation study 1 - PhiSICAL implementation study in East Midlands (2016)

- Production of the FaME Implementation Toolkit

Implementation study 2 - FLEXI study in Devon, Greater Manchester and East Midlands (2024)

- Refinement of the toolkit

Implementation research questions

PhISICAL

1) Is the clinical efficacy translated into effectiveness “in the real world”?

2) Is the fidelity of the programme maintained “in the real world”?

3) What makes “real world” implementation successful??

FLEXI

1) What works to foster the adoption of FaME by commissioners?

2) What does delivery look like, and how much does it cost, ‘in the real world’?

3) What works to maintain programme fidelity and quality over time?

Methods

Interviews

(stakeholders, FaME providers, Class attendees)

Observations

(local and national Communities of Practice, FaME classes)

Class participant data analysis

(functional outcomes, attendance, progression)

Document analysis

(minutes, emails, meeting summaries)

£

Cost Analysis (FLEXI)

(training, equipment, instructor time, venue)

Consolidated Framework for Implementation Research (CFIR) and Fidelity framework (Carroll et al 2007)

Results - PhISICAL

1. Is the clinical efficacy translated into effectiveness “in the real world”?

Yes

Orton E, Audsley S, Coupland C, Gladman JRF, Iliffe S, Lafond N, Logan P, Masud T, Skelton DA, Timblin C, Timmons S, Ward D, Kendrick D. 'Real world' effectiveness of the Falls Management Exercise (FaME) programme: an implementation study. Age Ageing. 2021 Jun 28;50(4):1290-1297. doi: 10.1093/ageing/afaa288. PMID: 33529311.

Efficacy to Effectiveness Completers (>75% of classes)

		Baseline (n=143)	End of FaME (n=120)	Baseline vs end of FaME**
Confbal score (n=330)	Mean(SD) Median (IQR)	16.2 (5.4) 16 (11-20)	14.5 (4.0) 14(11-17)	P<0.001
FES-I Score	Mean(SD) Median (IQR)	11.1 (4.7) 10 (7-13	9.7 (3.2) 9 (7-11)	P<0.001
FRAT Score	Mean(SD) Median (IQR)	1.5 (1.3) 1 (0-2)	1.5 (1.3) 1 (0-2)	P= 0.823
Total minutes of physical activity p/w	Mean(SD) Median (IQR)	817.5 (659.4) 673 (252-1252)	941.0 (649.7) 851 (414-1408)	p=0.023
Total minutes of MVPA per week	Mean(SD) Median (IQR)	127.4 (240.8) 0 (0-180)	165.7 (309.7) 40.5 (0-253)	P=0.115
Functional reach	Mean(SD) Median (IQR)	22.5 (9.4) 22 (16-29)	27.2 (8.1) 26 (21-32)	P<0.001
Turn 180º	Mean(SD) Median (IQR)	5.2 (2.0) 5 (4-6)	5.2 (2.3) 4 (4-6)	P=0.256
Timed Up and Go	Mean(SD) Median (IQR)	16.7 (9.6) 13 (10.84-20)	14.2 (8.6) 11.65 (9-16.38)	P<0.001

	Baseline	End of FaME	12 months later
All	1.43 (1.19-1.70)	1.08 (0.81-1.40)	1.09 (0.77-1.49)
Male	2.63 (2.03-3.36)	1.59 (0.89-2.29)	2.45 (1.38-3.53)
Female	0.98 (0.73-1.23)	0.91 (0.60-1.21)	0.64 (0.33-0.96)

Results - PhISICAL

1. Is the clinical efficacy translated into effectiveness “in the real world”?	Yes
2. Is the fidelity of the programme maintained “in the real world”?	Largely speaking

Orton E, Audsley S, Coupland C, Gladman JRF, Iliffe S, Lafond N, Logan P, Masud T, Skelton DA, Timblin C, Timmons S, Ward D, Kendrick D. 'Real world' effectiveness of the Falls Management Exercise (FaME) programme: an implementation study. Age Ageing. 2021 Jun 28;50(4):1290-1297. doi: 10.1093/ageing/afaa288. PMID: 33529311.

Is Fidelity maintained ‘in the real world’?

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 floorwork

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 or reinforing the exercises
- Not correcting poor positions

43% of people progressed the recommended 3+ resistance band levels

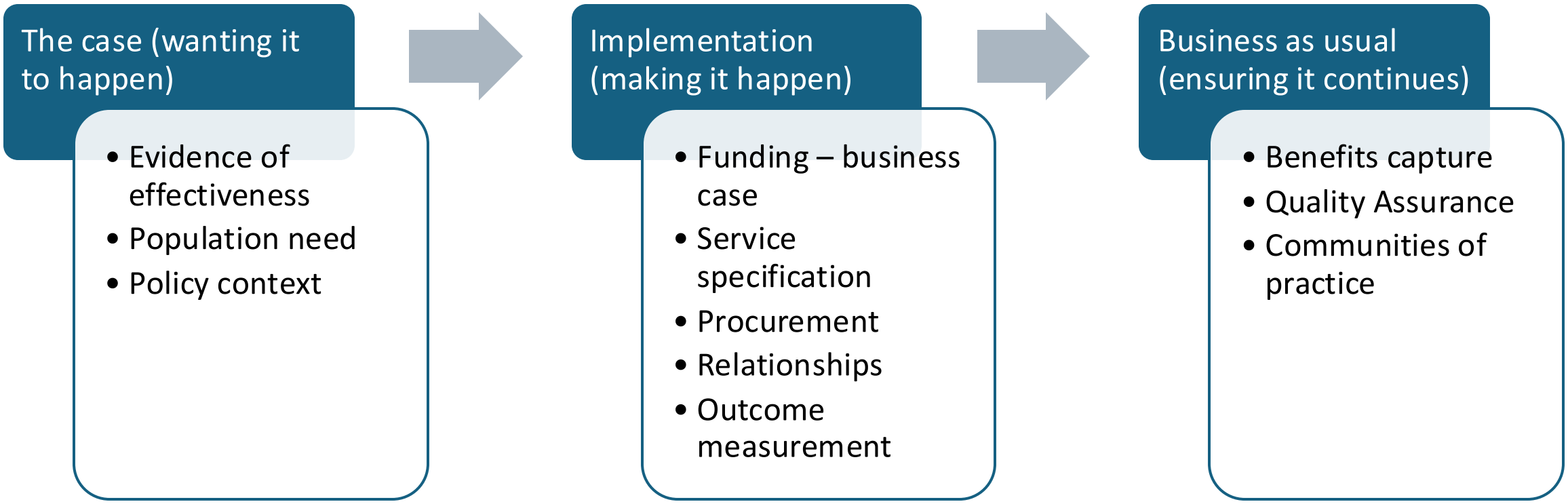
Communities of practice consisting of instructors and their managers offered opportunities for quality improvement (QI)

Results - PhISICAL

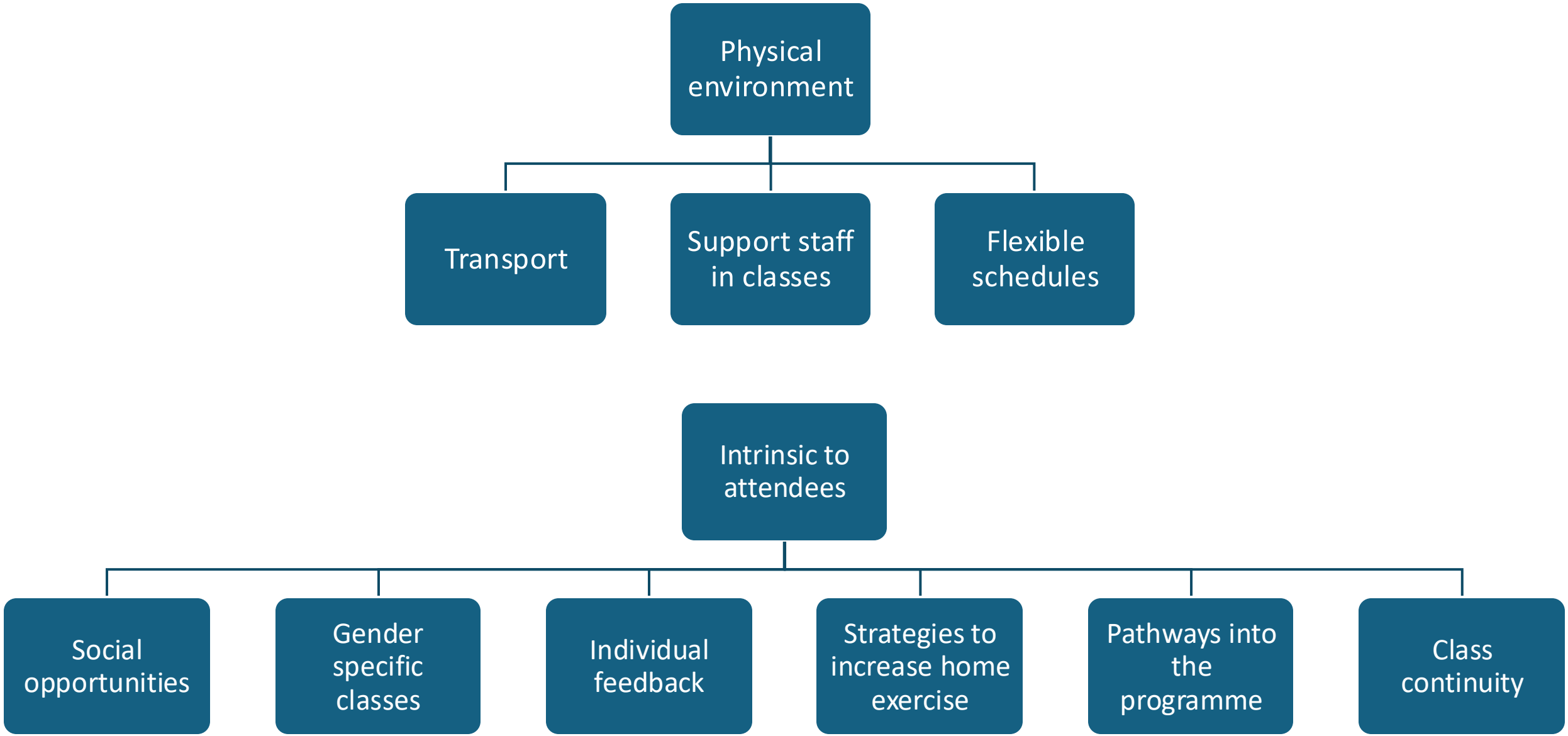
1. Is the clinical efficacy translated into effectiveness “in the real world”?	Yes
2. Is the fidelity of the programme maintained “in the real world”?	Largely speaking
3. What makes “real world” implementation successful??	Community of Practice Policy context Relationships Funding

Orton E, Audsley S, Coupland C, Gladman JRF, Iliffe S, Lafond N, Logan P, Masud T, Skelton DA, Timblin C, Timmons S, Ward D, Kendrick D. 'Real world' effectiveness of the Falls Management Exercise (FaME) programme: an implementation study. Age Ageing. 2021 Jun 28;50(4):1290-1297. doi: 10.1093/ageing/afaa288. PMID: 33529311.

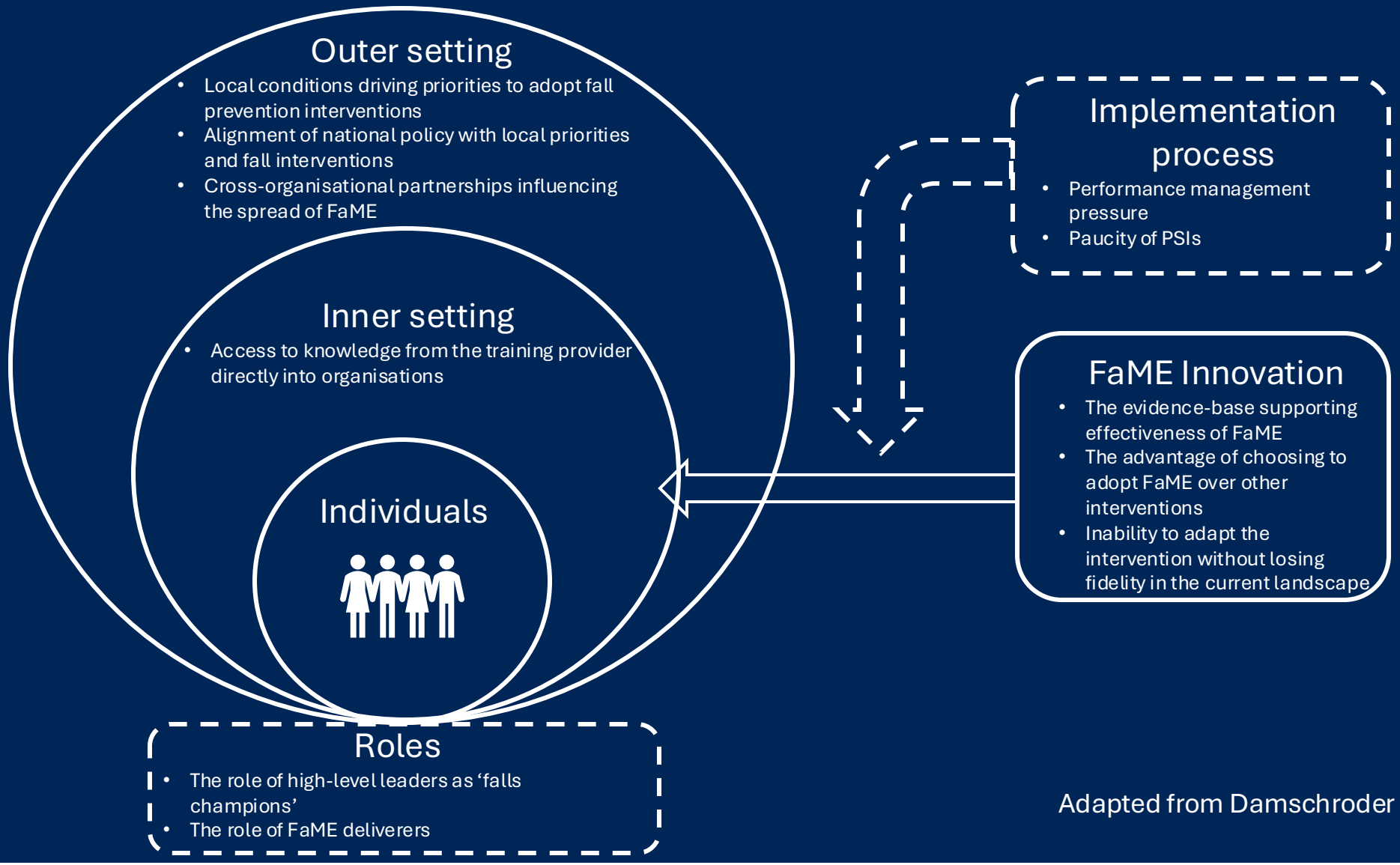
What makes 'real world' implementation successful?



Factors affecting uptake and adherence FaME UK



Results FLEXI - What works to foster the adoption of FaME by commissioners?



Adapted from Damschroder et al 2022

Results FLEXI What does delivery look like, and how much does it cost, 'in the real world'?

Univariate (baseline – follow up):

Fall likelihood reduced $p<0.001$

TUG reduced $p<0.001$

Falls concern – no change

Multivariate multilevel regression:

Longer programme (24 vs 12 weeks) = improved TUG

likelihood of low falls concern increased

Most delivery was in person

Cost per participant per session including staff training costs was £17 (€20, $21).

Results FLEXI

What influences programme fidelity and quality over time?

'FaME classes' are not always delivered with fidelity

Longer history of delivery plus low oversight = migration of delivery over time

Essential components not well understood = more adaptation

Adaptation is necessary but should not include 'essential components'

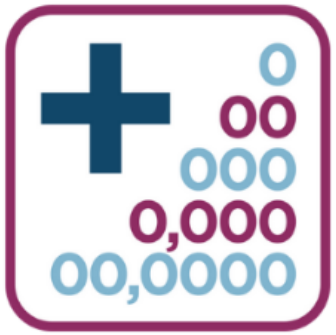
Translation into practice - Spread methodology

Dig Deep

All too often people fall in love with their solution, but forget to confirm that it solves the problem in the first place.. *The first step is to dig deep into your problem, your solution, and the system through which you want to spread transformation.*

Dream Big

It's hard to get goal setting just right. Some leaders err by playing it too safe (and never reaching their potential impact), other leaders err by being too grandiose and vague. The next step is to dream big and *discover the "just right" amount of "how much, by when" for your next wave of expansion.*



Add Zeros

Let go of the belief that controlling things is "good management." When leading large-scale change, you have to get people you'll never meet to change their behavior. You are going to need leverage big time. What got you here won't get you there. *Add zeros will help you get that leverage.*

No Heros

The best scaling strategy is worthless unless those leading it are willing to do the inner work of social change. The most likely source of failure – whether that be burnout or irritating all your colleagues – is your own shortcomings as a leader. *No heroes is where we tend to that inner transformation that must occur if we are to succeed.*

N-FIT

National FaME
Implementation Team

Spreading and improving FaME

FLEXI

Falls Exercise
Implementation Study

Researching the Spread and improvement of FaME

Enabling older people to get up, stay up and live their best lives

National FaME Implementation Team:

Later Life Training
AGILE (older adults SIG Chartered Society of Physiotherapy)
AgeUK
ROSPA
FLEXI Research Team
FaME Services (CIC, Council)

Set up in 2022

What N– FIT offer

TOGETHER

we can be the best

WE CAN

- Expert advice and mentorship
- An online Community of Practice (CoP) to share successes/challenges
  - Commissioners, Providers, PSIs
- Quality Improvement visits to support your PSIs and service
- Support for the evaluation of your service
  - Cost analysis and participant / service outcomes
- Help you get off to the best start for your new sessions
  - Updating and improving the FaME Implementation Toolkit for commissioning, business planning, target population, training and funding

Conclusions

Learning from Research

- FaME is a low cost intervention
- Effective ‘in the real world’
- Longer programmes = better outcomes
- For adoption it needs to:
  - Align with local need
  - Leadership at all levels
  - Evidence of superiority
  - Credibility
  - Access to knowledge and support
- For fidelity
  - Be clear about what ‘it’ is

Action

- Establish need
- Understand who to influence
- Get opinion leaders on board – events, networking, lobbying, policy documents, news articles
- Frame the problem – Make it sticky
- Give them the expert support they need
  - ❖Toolkit (“how to” guide)
  - ❖Training
  - ❖Networking events and communities of practice
- Build in QA from the start

Thank you

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- Elizabeth Orton (presenting),
- Lucy Atkinson,
- Margaret Beethan,
- Carol Coupland,
- Vicki Goodwin,
- Helen Hawley-Hague,
- Claire Hulme,
- Denise Kendrick,
- Pip Logan,
- Elizabeth Lumsden,
- Fay Manning,
- Tahir Masud,
- Aseel Mahmoud,
- Mary Murphy,
- Tina Patel,
- Dawn A Skelton,
- Michael Taylor,
- Stephen Timmons,
- Chris Todd,
- Jodi Ventre

FaME Ireland

Evaluating the Early Adoption of the Falls Management Exercise Programme in Ireland

HRB APA 2022
Co-funded by the HSE
Ruth McCullagh, UCC

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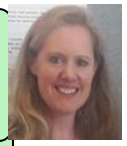
Vanda Cummins



SENIOR PHYSIOTHERAPIST HSE PRIMARY AND COMMUNITY CARE

Edel Brennan

FALLS COORDINATOR HSE PRIMARY AND COMMUNITY CARE

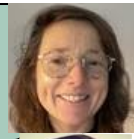
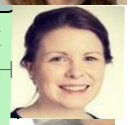
UCC Support




STATISTICAL AND METHODOLOGICAL SUPPORT

PPI SUPPORT

Research Expertise


IMPLEMENTATION SCIENCE
PARTICIPATORY RESEARCH
ECONOMICS
EXERCISE PREFERENCES

Mary Harkin

AGE AND OPPORTUNITY

The Case

Falls prevention exercise programmes for older people in Ireland

NCA National Office of Clinical Audit | MTA Major Trauma Audit

KEY HIGHLIGHTS

OF MAJOR TRAUMA AUDIT REPORT FOCUSED ON OLDER ADULTS 2017-2020

11,145 PATIENTS OVER AGE 65

81% AVERAGE COVERAGE

79 YEARS

MEDIAN AGE OLDER ADULTS

SEX

COMORBIDITIES

also known as other pre-existing medical conditions

UNDER 65	OVER 65
39%	74%

ISS GREATER THAN 15

ISS is a measure of how injured a person is. ISS greater than 15 indicates severe injury

UNDER 65	OVER 65
34%	33%

ACCIDENTS IN THE HOME

UNDER 65	OVER 65
36%	70%

LOW FALLS

Falls of less than 2 metres

UNDER 65	OVER 65
39%	82%

ROAD TRAUMA

UNDER 65	OVER 65
25%	7%

Brought to hospital by ambulance

UNDER 65	OVER 65
72%	79%

Seen by an advanced paramedic

UNDER 65	OVER 65
34%	29%

Pre-alerted

When ambulance personnel call the emergency department in advance to inform them of a patient arriving soon who will require immediate review

UNDER 65	OVER 65
22%	9%

Received by a trauma team and seen by a consultant within 30 minutes

UNDER 65	OVER 65
46%	36%

Received by a trauma team

Patients met on arrival to the Emergency Department by a number of health care professionals

UNDER 65	OVER 65
15%	6%

Transferred to another hospital

UNDER 65	OVER 65
35%	20%

Median* length of stay

UNDER 65	OVER 65
7 days	12 days

* The median is the middle number in a

Discharged home

UNDER 65	OVER 65
73%	44%

Surgery

UNDER 65	OVER 65
53%	30%

Patients who received CT scan within 1 hour

UNDER 65 IN 2021	OVER 65 IN 2021
47%	55%

Mortality in hospital

UNDER 65	OVER 65
4%	7%

KEY HIGHLIGHTS 2022

NOCA National Office of Clinical Audit

Irish Hip Fracture Database IHFD

94%
94% data coverage.

84%
84% of patients were admitted from home.

93%
93% of patients were brought straight to the operating hospital.

21%
IHFS 1: 21 % of patients were admitted to an orthopaedic ward or went to theatre within four hours.

78%
78% of patients received a pre-operative nerve block for pain.

74%
IHFS 2: 74% of patients received surgery within 48 hours of admission.

80%
IHFS 6: 80% of patients received a specialist falls assessment.

88%
IHFS 5: 88% of patients received a bone health assessment.

80%
IHFS 4: 80% of patients were seen by a geriatrician or advanced nurse practitioner.

43%
43% received a 4AT delirium screening assessment on day 1.

65%
65% received a nutritional risk assessment.

3%
IHFS 3: 3% of patients developed a pressure ulcer after admission.

Pressure Ulcers to Zero

86%
IHFS 7: 86% of patients were mobilised by a physiotherapist on the day of surgery or

28%
28% of patients achieved independent mobility prior to discharge from

72,852
72,852 acute hospital bed days occupied for hip fracture patients.

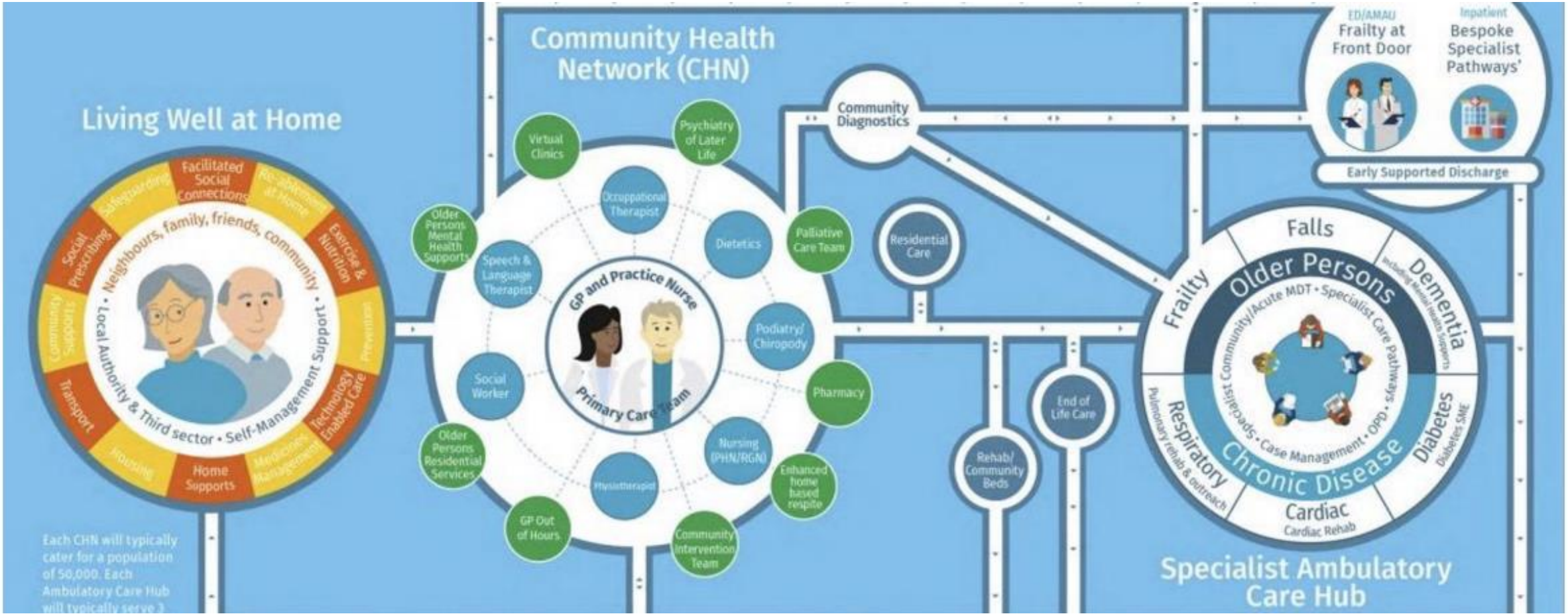
29%
29% discharged directly home.

28%
The number of patients being transferred to off-site rehabilitation increased from 25% in

10%
Best Practice Tariff (BPT): 10%

Affinity (Falls & Bone Health Project) 2018-23

- **Lack** of awareness that **falls are preventable**
- **Lack** of community-based opportunities for **strength and balance** exercise/training
- **Missed** opportunities to prevent falls
- Geographical **variation** in availability, quality and content of services that can reduce falls/harm from falls
- Demographic trend demands **coordinated, collaborative** action
- Funded PSI training for >100 exercise professionals and physiotherapists



Older Person/ Chronic Disease Service Model

- An opportunity to collaboratively **establish** coordinated community-based strength and balance programmes
- To integrate the programme with health services
- To educate that falls are not inevitable

Where would FaME sit in Older Person Services?

Early identification of frailty and falls risk

Referral from GP / PHN

Hospital Admission Avoidance

Pathfinders / FIT/ Ambulatory Care Hubs
Begin exercises at home until ready to join local classes

Early Supported Discharge from hospital

Supported strength balance and endurance training to full recovery
ability to cope with and get up from the floor

Options to stay active

Local exercise classes to maintain physical activity and function

Implementation

Making FaME happen by engaging with stakeholders including service users to ensure co-design.

Lessons learned from UK ‘Real World’ studies

Essential

Challenging dynamic endurance

Progressing strength (at least 3 times over six months)

Progressing to dynamic balance

Teach safe transitions

Home exercise packs provided and reminded

Backward chaining and floor exercises

Having all components in place (endurance, balance, strength, getting down and up from the floor, flexibility and Tai Chi moves)

Motivate and promote confidence

Adaptable to local context /needs

Rolling / cohort 24 week

Physio – Exercise Professional partnership

Referral routes [e.g. self-referral]

Delivery model adaptations:

- Hybrid delivery
- One to one at home for the first few sessions

Charity support to support online access/transport

Orton et al. *Public Health*, 2021; FaME Implementation Toolkit

FaME Ireland

Each step will inform the next step in this process.
DEFINE, observe what is happening now (warts and all!). Identify areas to improve.
Co-DESIGN, identify practical and local solutions with key stakeholders.
DELIVER, rollout the programme again, with the changes in place.
DISSEMINATE, adapt the *UK FaME Implementation Toolkit* to the Irish context and key public health messages.

1 CURRENT PRACTICE

Access
Referrals
FaME itself
Cost
Egress

2 CREATE SOLUTIONS

Codesign with FaME participants, advocacy groups, PSIs, commissioners, HSE)

3 EVALUATE SOLUTIONS

Evaluate with the changes implemented

Adapt the FaME implementation toolkit for Irish context

4 ALL STAKEHOLDERS

Inform everyone that falls are not inevitable

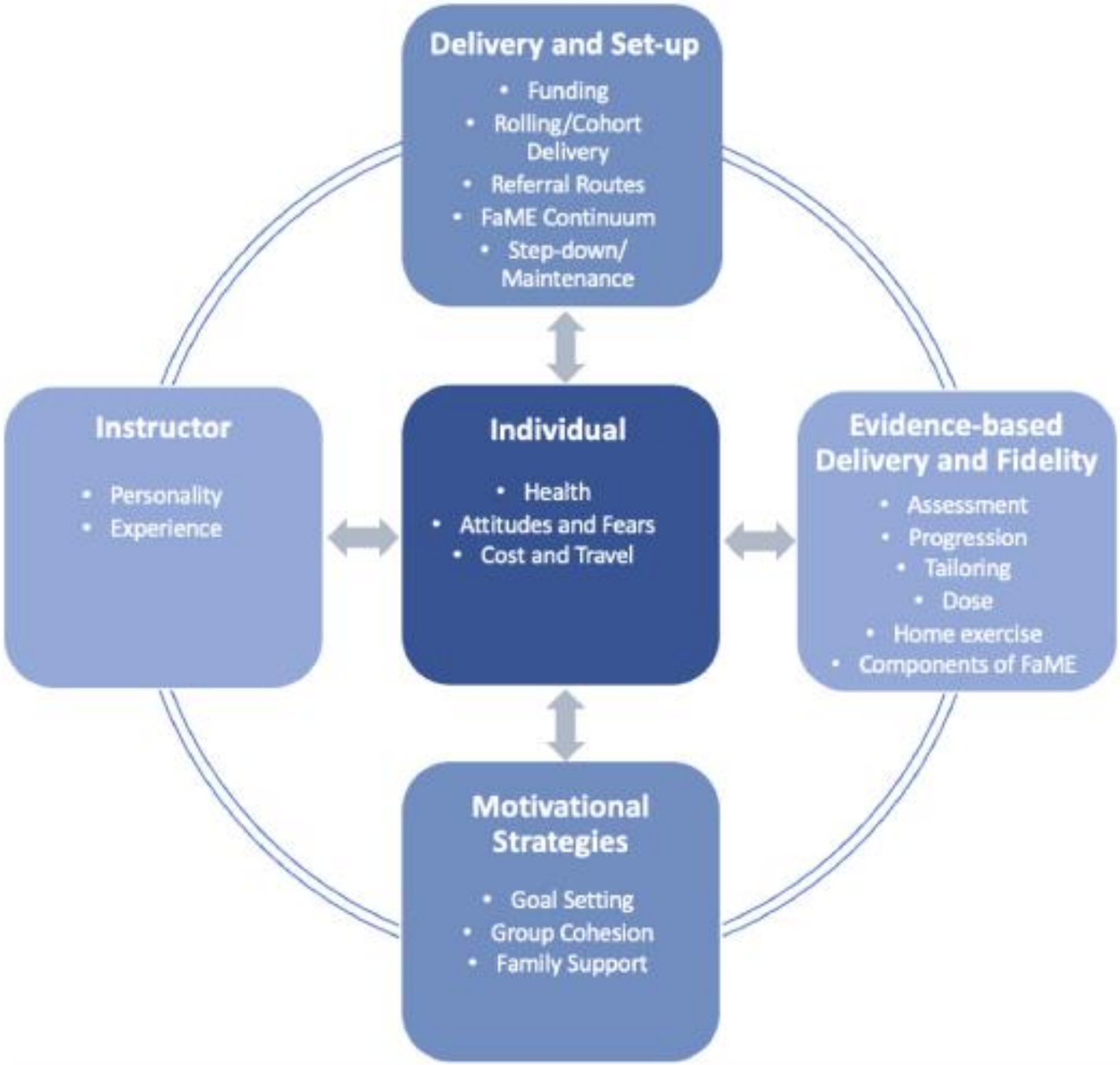
Public, health services and academic audiences

HRB APA 2022 028
HEALTH RESEARCH BOARD
HSE

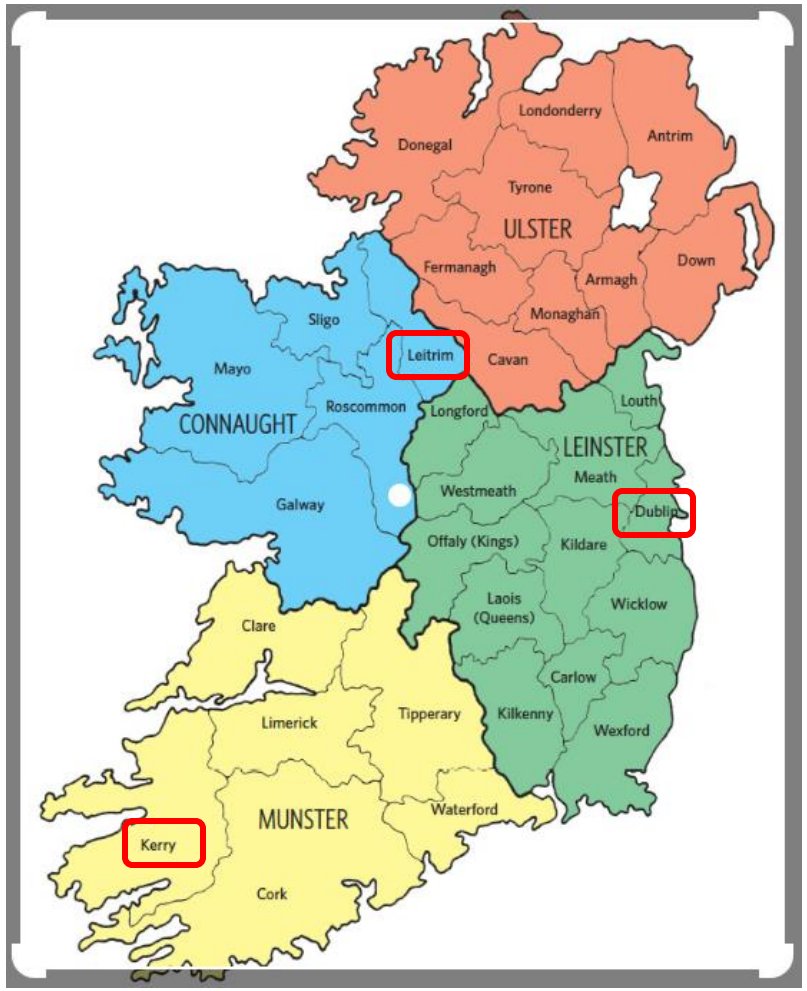
Implementation:
Survey all trained PSIs
3 early-adopter sites

- Local practical solutions
  - Demand/referral routes
  - Participants confidence in exercising
  - Access to classes
  - Partnerships among PSI
  - Competing workloads
  - Funding
  - National policy and local priority

Hawley-Hague et al. *JFSF*, 2024



Mixed methods evaluation



Appropriateness and longterm sustained PA through interviews and surveys

Effectiveness through routinely collected outcome data. **Observe** treatment fidelity

WHAT WE WILL EXAMINE?

Sustainability and **efficiency** by surveying all Irish trained PSIs and interviewing the early-adopter PSIs .

Cost of FaME

Access through participants' demographics and referral patterns

Survey all Irish PSIs After training, what happened next?

- Exploring the barriers and levers to setting up and maintaining FaME class delivery.
  - Partnership opportunities
  - Support networks and institutions
  - Venues
  - Recruitment methods and waiting list process
  - Barriers and challenges to deliver essential components
  - Asking to participate in a future interview.
- Three strands of respondents
  - Currently delivering / have a clear plan in place to deliver FaME
  - Previously delivered FaME, but not currently
  - Successfully completed FaME training, but have not delivered a FaME programme yet


Thank you

- Research colleagues with GCU, RCSI, UCC
- Clinical colleagues with the HSE
- Service Users, family members, and Age and Opportunity,

Importance of Social Time (after/before Exercise)

Intervention adherence

- 30 semi-structured interviews with providers of FaME (n=15), and class attendees (n=15)
- Social opportunities, alongside exercise delivery, was seen as a motivator to attend, and on effort in classes

'Oh gosh, we laugh and talk all the way through... come on you guys, work harder. Come on, come on!"
(class attendee)

Social connectedness had wider impacts for attendees

'it just gives me a bit more confidence to engage with the group ... because.... it is harder to do something by yourself than it is in the group you know?"
(class attendee)

'People have said, you know, this has absolutely changed my life. It saved me. I've now got friend, a friendship group'
(provider)

Manning, Orton et al. In Press 2024

- Social elements:
  - **help build rapport** and **increase adherence** to FaME classes
  - have **further-reaching impacts** that contribute to the **overall wellness** of class attendees
- Barriers to social elements are related strongly to funding and capacity