



University of
Nottingham

UK | CHINA | MALAYSIA



FinCH (Falls in Care Homes Trial)

A multi-centre cluster randomised controlled trial to evaluate the Guide to Action Care Home fall prevention programme in care homes for older people

Professor Pip Logan on behalf of the team

Transforming
healthcare



Acknowledgements

The team

Philippa A Logan
Jane C Horne
Frances Allen
Sarah J Armstrong
Allan B Clark
Simon Conroy
Janet Darby
Chris Fox
John RF Gladman
Maureen Godfrey
Adam L Gordon
Lisa Irvine,
Paul Leighton,
Karen McCartney
Gail Mountain
Kate Robertson
Katie Robinson
Tracey H Sach
Susan Stirling
Edward CF Wilson
Erika J Sims

Care home residents and families
Care home staff, owners and managers
Patient and Public Involvement members
Stakeholders
NHS and local authority staff
University colleagues
University students and work experience students

The research support

Centre for Rehabilitation and Ageing Research
Clinical Research Networks
ENRICH – Enabling Research in Care Homes
AHSN – Academic Health Science Network
ARC – Applied Research Collaborations

The funders

The research was funded by the HTA programme as project number 13/115/29. The authors have been wholly responsible for all data collection, analysis and interpretation, and for writing up their work. This is independent research funded by the National Institute for Health Research (NIHR). The views and opinions expressed by authors are those of the authors and do not necessarily reflect those of the NHS, the NIHR, NETSCC, the HTA programme or the Department of Health and Social Care.

Why care homes?

421,000 older people living care homes, 15,000 homes

Falls account for **40%** of all injury deaths that occur in care homes

Falls are at least **three times** more frequent in care homes than in a community dwelling

One in ten care home residents who fall sustain a **fracture**

Anxiety in **care home staff**, and fear of litigation and complaints which may impact on care staff's willingness to encourage residents to be physically active

60-80% of residents are cognitively impaired

Thinking falls – taking action: a falls prevention tool for care homes. Robertson K, Logan P, Ward M, Pollard J, Gordon A, Williams W, Watson J. (2012). *British Journal of Community Nursing*, 17(5), 206-209.

Thinking falls - taking action: a guide to action for falls prevent Robertson K, Logan P, Conroy S, Dods V, Gordon A, Challands L, Smith S, Humpage S, Burn A. (2010). *British Journal of Community Nursing*, 15(8), 406-410.

Evaluation of the Guide to Action Care Home fall prevention programme in care homes for older people: protocol for a multi-centre, single blinded, cluster randomised controlled trial (FinCH). Logan PA, McCartney K, Armstrong S, Clarke A, Conroy S, Darby J, Gladman J, Godfrey M, Gordon AL, Irvine L, Leighton P, Mountain G, Robertson K, Robinson K, Sach T, Sims E, Horne JC. *East Midlands Research into Ageing Network (EMRAN) Discussion Paper Series ISSN 2059-3341 Issue 25, February 2019*

The Falls In Care Home study: A feasibility randomized controlled trial of the use of a risk assessment and decision support tool to prevent falls in care homes Walker GM, Armstrong S, Gordon AL, Gladman J, Robertson K, Ward M, Conroy S, Arnold G, Darby J, Frowd N, Williams W, Knowles S and Logan PA, 2015. *Clinical Rehabilitation*. 30(10), 972-983

Contamination in complex healthcare trials: the falls in care homes (FinCH) study experience. Robinson K, Allen F, Darby J, Fox C, Gordon AL, Horne JC, Leighton P, Sims E, Logan PA. *BMC Med Res Methodol*. 2020 Feb 27;20(1):46. doi: 10.1186/s12874-020-00925-z. PMID: 32106827; PMCID: PMC7047395.

Developing the *React to Falls* resources to support care home staff in managing falls. Robinson KR, Jones K, Balmbra J, Robertson K, Horne J, Logan PA. *J Frailty Sarcopenia Falls*. 2019 Mar 1;4(1):1-10. doi: 10.22540/JFSF-04-001. PMID: 32300710; PMCID: PMC7155373.

Learning from a successful process evaluation in care homes. Frances Allen, Janet Darby, Marie Cook, Rachel Evley, Maureen Godfrey, Jane Horne, Paul Leighton, Pip Logan, Katie Robinson, *Age and Ageing*, 2021;, afab139, <https://doi.org/10.1093/ageing/afab139>

CARE OF THE OLDER PERSON

Thinking falls – taking action: a falls prevention tool for care homes

Kate Robertson, Pip Logan, Marie Ward, Julia Pollard, Adam Gordon, Wynne Williams, Julie Watson

Kate Robertson is Falls Clinical Specialist, County Health Partnerships, Nottingham; Dr Pip Logan is Clinical Associate Professor in Community Rehabilitation, University of Nottingham; Marie Ward is Falls and Bone Health Clinical Specialist, Nottingham CityCare; Julia Pollard is formerly Team Leader, Nottingham CityCare; Dr Adam Gordon is a consultant in geriatric medicine, Nottingham University Hospitals NHS Trust; Wynne Williams is Manager, Church Farm Nursing Home, Nottingham; Julie Watson is Deputy Manager, Church Farm Nursing Home, Nottingham

Email: kate.robertson@nottshc-chp.nhs.uk

Falls in older adults are common. There is considerable mortality and morbidity associated with falls in care homes, with hip fracture rates significantly higher than in community-dwelling older people, and rates in female care home residents being estimated as high as 50.8 hip fractures per 1000 person years (Rapp et al, 2008). Due to the seriousness of this injury, one fifth of those people will die within a year (Cooper et al, 1993; Liebson et al, 2002). In frailer older people with three or more comorbidities, mortality rises to 33% within a year of fracture (Roche et al, 2005). Beaupre et al (2007) found that most people admitted to hospital from long-term care facilities following a fall and fractured hip do not regain their pre-fracture level of function.

Although extensive research has been carried out into effective interventions to reduce falls in community-dwelling older people, there is limited evidence of the effectiveness of such interventions within care homes. In a meta-analysis of falls interventions in a care home setting, Oliver et al (2007) concluded that there was insufficient evidence regarding falls prevention in this setting and that further research is required,

but suggested that it makes sense to identify risk factors for the individual and reverse or reduce these where possible. This was supported by Close and Lord (2011) in their clinical review of falls risk-screening tools. A further issue is that protocols used to perform risk assessments for falls are often not validated, vary from care home to care home, and do not necessarily trigger individually-tailored interventions (Oliver et al, 2000).

We have previously reported the development of a Guide to Action for Falls Prevention Tool (GtA) for use with community-dwelling older people (Robertson et al, 2010). In this article we outline our development of a version for use within care homes: the Guide to Action for Falls Prevention Tool – Care Homes (GtACH).

Method Development of the GtACH

The GtACH was developed using published meta-analyses and randomised controlled trials, where studies identified risk factors for falling significant to older people within care homes (not just UK studies) and effective interventions shown to reduce falls and injuries in this setting.



To determine the clinical and cost effectiveness of the Guide to Action (GtACH) process for fall prevention in care homes compared to usual care.

2014 -2019
£2.2 M

[Multifactorial falls prevention programme compared with usual care in UK care homes for older people: multicentre cluster randomised controlled trial with economic evaluation.](#) Logan PA, Horne JC, Gladman JRF, Gordon AL, Sach T, Clark A, Robinson K, Armstrong S, Stirling S, Leighton P, Darby J, Allen F, Irvine L, Wilson ECF, Fox C, Conroy S, Mountain G, McCartney K, Godfrey M, Sims E. BMJ. 2021 Dec 7;375:e066991. doi: 10.1136/bmj-2021-066991. PMID: 34876412; PMCID: PMC8649897.

[A multi-domain decision support tool to prevent falls in older people: the FinCH cluster RCT.](#) Philippa A Logan, Jane C Horne, Frances Allen, Sarah J Armstrong, Allan B Clark, Simon Conroy, Janet Darby, Chris Fox, John RF Gladman, Maureen Godfrey, Adam L Gordon, Lisa Irvine, Paul Leighton, Karen McCartney, Gail Mountain, Kate Robertson, Katie Robinson, Tracey H Sach, Susan Stirling, Edward CF Wilson and Erika J Sims, Health Technol Assess [10.3310/CWIB0236](#) 2021;

Thinking falls – taking action: a falls prevention tool for care homes. Robertson K, Logan P, Ward M, Pollard J, Gordon A, Williams W, Watson J. (2012). British Journal of Community Nursing, 17(5), 206-209.



The FinCH study flow diagram

Older people living in care homes

Identification, screening and recruitment

Randomise homes

Control arm
Usual care as provided in the location

Intervention arm
Action Falls programme (formally known as GtACH)

Follow-up assessments at 3, 6, 9 & 12 months
Falls
Fall injuries
Fractures
Functional ability using the Barthel Index
Physical activity and mobility using the (PAM-RC)
Quality of Life
Use of services

Analysis: Rate of falls between 3 and 6 months

Process evaluation
6 care homes and a minimum 30 interviews

Realist methodology

Training of fall prevention experts, training of care home staff and implementation of the GtACH will be observed and assessed

Care home records will be reviewed to consider broad compliance with GtACH

Key stakeholders will be interviewed to explore the experience of introducing GtACH.

Analysis: All data will be analysed following the conventions of realist methodology (Gale 2013).

Economic evaluation

Baseline
Use of services using the ADult Service Use Schedule Care Home (AD-SUS-CH)

Quality of life using the EQ-5D-5L-P
DEMQOL-U-5D, DEMQOL-P-4D, EQ-5D-5L,

Follow-up assessments at 3, 6, 9 & 12 months
Quality of Life (as above)

Use of services using the ADult Service Use Schedule Care Home (AD-SUS-CH)

Analysis: cost-effectiveness and cost utility analysis measuring change in Quality Adjusted Life Years (QALYs)

Recruitment

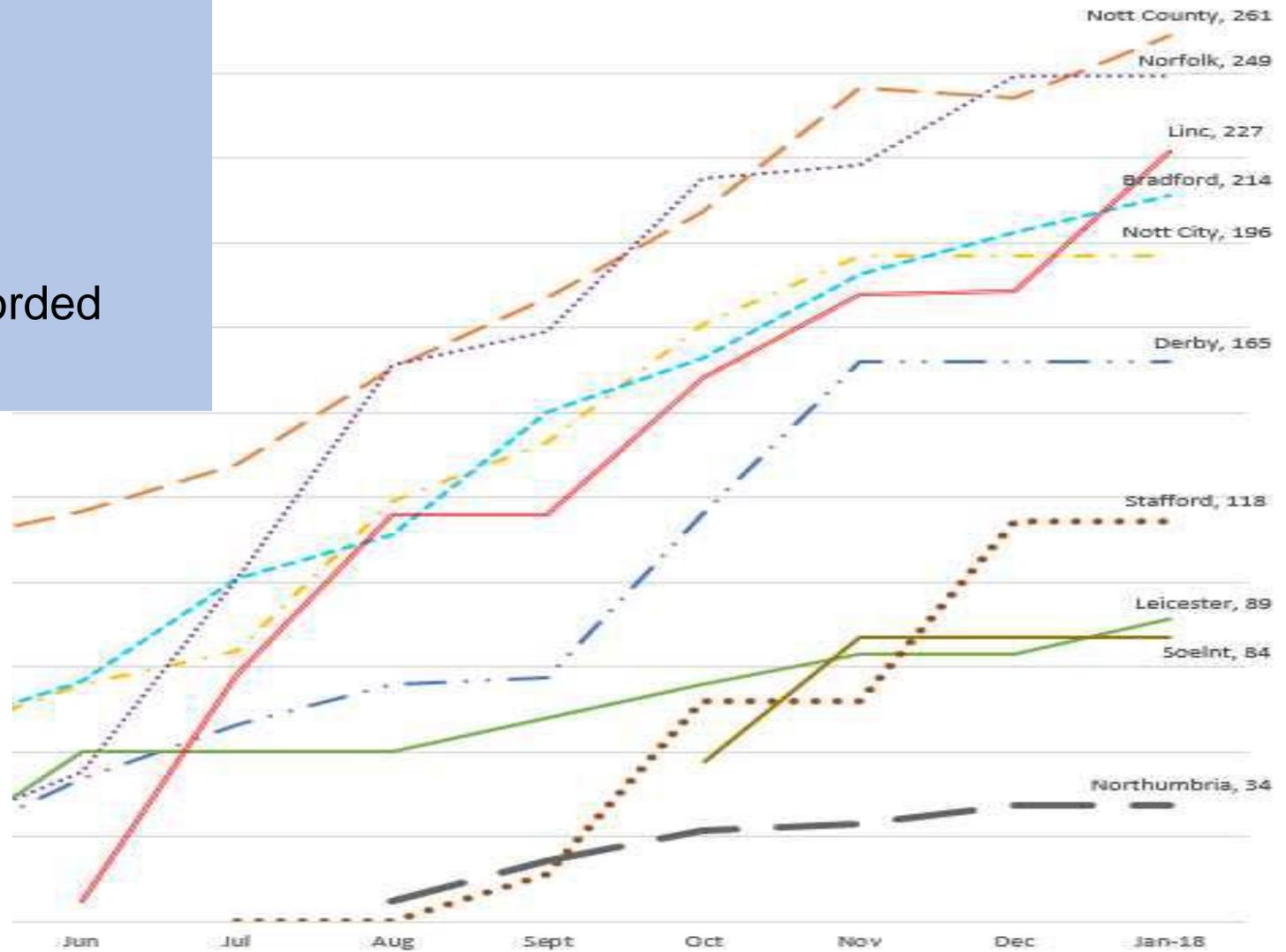
10 sites

87 care homes

1657 residents

1051 care home staff

< 20,000 medication events recorded



Observations

Focus Groups

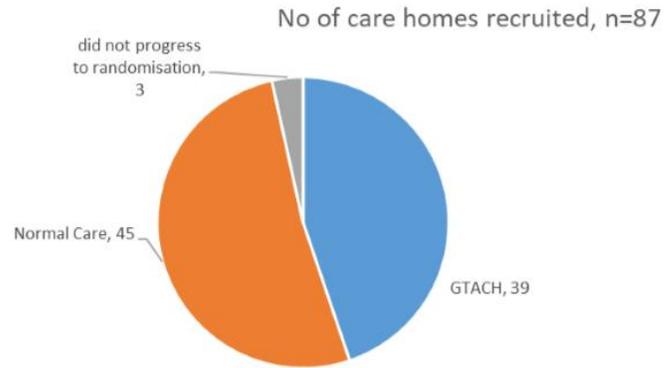
Process Evaluation

Interviews

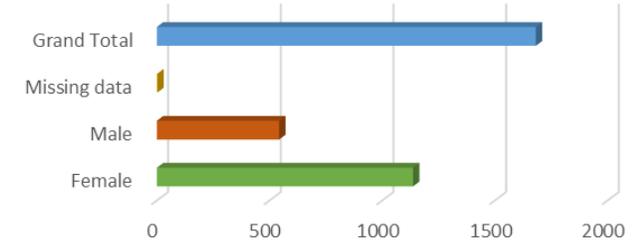
Documentation

Baseline Characteristics

	Overall n=1657	GTACH n=775	Usual Care n=882
Age at consent to FinCH (years): mean (SD)	85.04 (9.28)	86.03 (8.64)	84.16 (9.74)
Male: N (%)	532 (32.1%)	231 (29.8%)	301 (34.1%)
Consent: Resident	387 (23.4%)	186 (24.0%)	201 (22.8%)
Consultee	1270 (76.6%)	589 (76.0%)	681 (77.2%)
Time in care home (months): median (IQR)	18.6 (8.3 – 36.4)	18.8 (8.1 – 36.5)	18.1 (8.6 – 35.8)
Recorded diagnosis: Dementia N (%)	1109 (67.0%)	506 (65.4%)	603 (68.4%)
Diabetes	320 (19.3%)	150 (19.4%)	170 (19.3%)
Stroke	262 (15.8%)	118 (15.2%)	144 (16.3%)
CHD	234 (14.1%)	100 (12.9%)	134 (15.2%)
Mean (SD) number of falls per person 3 months prior to baseline	0.71 (1.82)	0.61 (1.57)	0.79 (2.02)
Number of medications in period 3 months prior to baseline on			
None	0	0	0
One to three	56 (3.4%)	26 (3.4%)	30 (3.4%)
Four or more	1601 (96.6%)	749 (96.6%)	852 (96.6%)
Physical activity (PAM-RC) score at baseline: mean (SD)	8.61 (6.09)	8.57 (5.95)	8.66 (6.21)
Activities of Daily Living (Barthel) score at baseline: mean (SD)	8.57 (6.05)	8.86 (6.12)	8.30 (5.99)
DEMQOL self-completion at baseline	0.82 (0.16)	0.83 (0.16)	0.81 (0.16)
DEMQOL proxy at baseline	0.74 (0.12)	0.74 (0.12)	0.74 (0.12)
EQ-5D-5L self-completion at baseline	0.49 (0.36)	0.52 (0.36)	0.46 (0.35)
EQ-5D-5L proxy at baseline	0.35 (0.37)	0.36 (0.37)	0.34 (0.36)

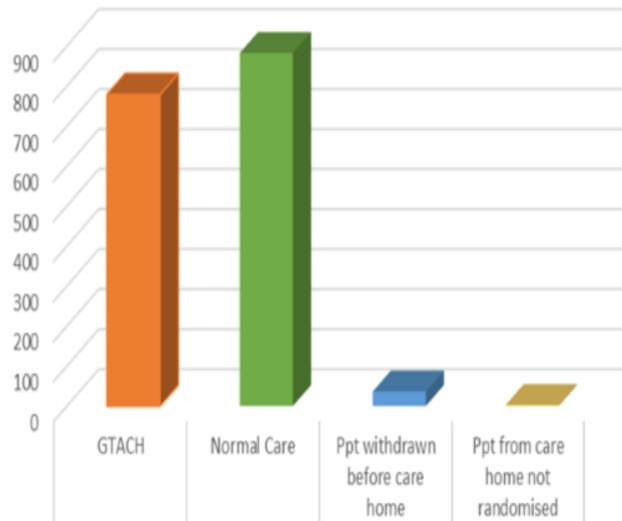


Number of participants per gender (total n=1682)



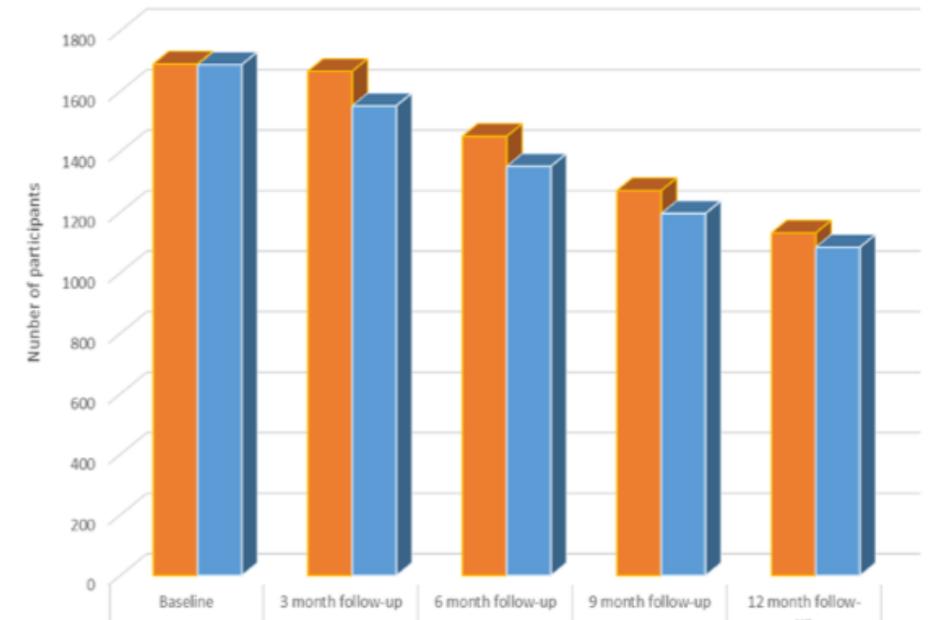
	Female	Male	Missing data	Grand Total
Number of participants per gender	1137	543	2	1682

Number of participants per randomisation arm (n=1698)



Randomisation Arm	Number of participants
GTACH	778
Normal Care	882
Ppt withdrawn before care home randomisation	36
Ppt from care home not randomised	2

Falls CRFs completion



Follow-up Point	Number of falls CRFs expected	Number of falls CRFs completed
Baseline	1690	1688
3 month follow-up	1666	1552
6 month follow-up	1451	1352
9 month follow-up	1272	1196
12 month follow-up	1132	1085

Primary Outcome - 90 days, occurring between 91 days and 180 days after randomisation

Fall rate in the GtACH group was reduced compared to that in the usual care group

6.0/1000 residents in the GtACH group and 10.4/1000 residents in the usual care group

	GtACH			Usual Care			Unadjusted		Adjusted for baseline falls	
	N at risk	N falls	Fall rate	N at risk	N falls	Fall rate	IRR (95% CI)	p-value	IRR (95% CI)	p-value
pre-randomisation*	773	0.61 (1.57)	6.97 (17.67)	882	0.79 (2.02)	9.48 (24.14)				
0 – 90 days	708	0.55 (1.36)	6.93 (20.56)	826	0.88 (2.37)	10.24 (27.26)	0.6 (0.49,0.73)	<0.001	0.74 (0.60,0.92)	0.006
91 – 180 days	630	0.49 (1.13)	6.04 (14.02)	712	0.89 (2.60)	10.38 (29.52)	0.57 (0.45,0.71)	<0.001	0.63 (0.52,0.78)	<0.001
181 – 270 days	547	0.60 (1.29)	7.28 (16.67)	633	0.73 (1.85)	9.21 (28.77)	0.85 (0.69,1.05)	0.128	0.91 (0.74,1.12)	0.369
271 – 360 days	502	0.55 (1.14)	6.22 (12.88)	573	0.79 (2.37)	9.22 (27.36)	0.79 (0.60,1.03)	0.078	0.93 (0.71,1.22)	0.614

Process evaluation

“if we want to change anything or do anything, we have to do it as an organisation. So it would not be sort of, if you like, correct for us to suddenly stop using what we already use, and to take on board a different tool, unless we could get that tool approved for the rest of the organisation, particularly around falls and falls prevention.” (Manager – Home C).

“I think, we have struggled filling the paperwork in but the knowledge has stayed in our head. I don't know if that's the right or wrong thing to say but the knowledge is certainly there and we do talk and look at why people are falling, but I think some of the care staff struggled with the paperwork.” (Falls Champion – Home B).

“I thought it was really informative. It was especially useful because things she (trainer) was discussing related to residents in the home. Staff took away ideas and ways of recording. She pointed out that things seen as normal could be related to falls.”

“... I liked the training. It was a refresher for myself and the other qualified [staff] ... I think, again, it made us look a bit beyond what, why, you know, what medication are they on, have they got an infection? I think we pretty much do that anyway. But there was factors on there that I perhaps didn't think of myself. You know, because it does tell you through the list of other things to look for.” (Falls Champion. Home B).

Health Economics

The incremental cost was £108 (95% CI -271.06, 487.58), incremental QALYs gained were 0.024 (95% CI 0.004, 0.044) for EQ-5D-5L-P.

The incremental costs per EQ-5D-5L-P based QALY were £4,544.

The cost per fall averted was £191.

The cost per participant was £108.



Conclusion



- The intervention reduced falls rates by 43%
- The intervention was cost effective
- The intervention can be delivered in care homes



We celebrated

and then thought

There are 15,000 care homes in the UK

And they will all ask us.....

What is the intervention?

How can we get it?

How much will it cost us?

How will we know if it works for us?



ACTION FALLS



What is the intervention?

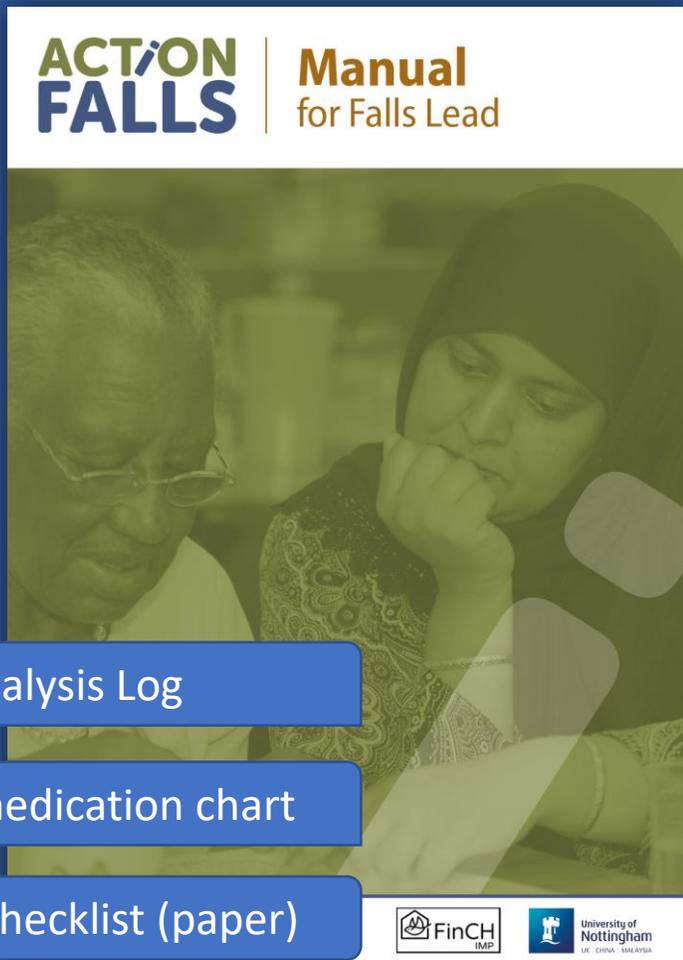
Action Falls Programme (formally GtACH)

..guides their (care staff)
thought processes CH1

..Facilitates 'thinking
outside the box' CH2



The Action Falls Manual for Care Homes



Falls Analysis Log

Traffic light medication chart

Action Falls Checklist (paper)



What is the Action Falls Checklist?

- Evidence based checklist which comes in both paper and electronic format
- Identifies risk factors of significance for the individual
- Suggests actions that may be taken to reverse, reduce or modify that risk

ACTION FALLS Checklist: A Guide to Action for Care Homes

Resident's Name: _____ D.O.B.: _____

• Underline statements relevant to the person you are completing the tool with
• If section is not relevant, write this in action box
• Date and sign when actions taken

Falls risk factors	Suggested action	Action taken	Date action taken & by whom
History of falls • History of falls prior to admission to care home • Falls reason for admission to care home	Review all incidents using Incident Analysis form, look for any patterns to falls e.g. time of day, activity at time of fall - fill in 'Fall Incident Analysis'		
History of falls • History of falls since admission	Inform GP of falls history and any recent falls		
Recent falls • 2 or more falls in past 6 months (A fall is defined as an unexpected event in which residents come to rest on the ground or floor)	Postural blood pressure to be checked i.e. in lying, sitting and standing - alert GP if drop is greater than 20mmHg Request medical review to identify any medical causes of falls e.g. infection, stroke, low blood pressure, heart problems Identify any possible causes of those risks		
Fractures • Has broken bones as result of fall: Wrist, hip, arm, pelvis, spine, ribs, collar bone, shoulder, ankle • Is at risk of fracture because takes steroids, has rheumatoid arthritis or drinks 3 or more units of alcohol a day	At risk of Osteoporosis Ask GP to review if person is falling and has previous fracture(s)		
Hospital admission • Attended A&E due to fall to hospital • Ambulance called - not taken to hospital • Admitted to hospital due to fall	Review causes of fall Initiate any treatment recommended Inform GP		
Other injury due to fall • Head injury, cuts, bruises, grazes, skin tear			
Coping strategies • Unable to get up from floor without help • Unable to summon help	Ensure call buzzer easily accessible and working. Consider use of sensor equipment Increase level of supervision and document		
Fear of falling • Is anxious/worried about falling, lacks confidence • Remains seated for much of the day due to fear of falling	Consider reasons for fear of falling Increase supervision Ensure mobility maintained Encourage and reassure		

E-Link...<https://actionfalls.paperform.co/>

ACTION FALLS

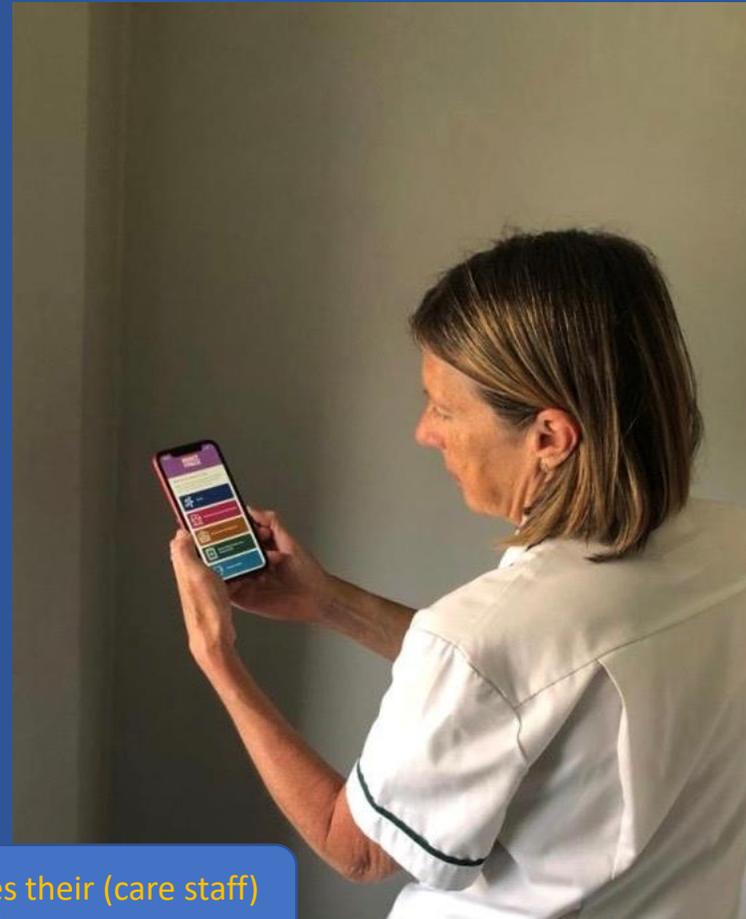
What is the intervention?

Action Falls Programme (formally GtACH)

<https://www.reactto.co.uk/resources/react-to-falls/>

<https://play.google.com/store/apps/details?id=com.reacttofalls>

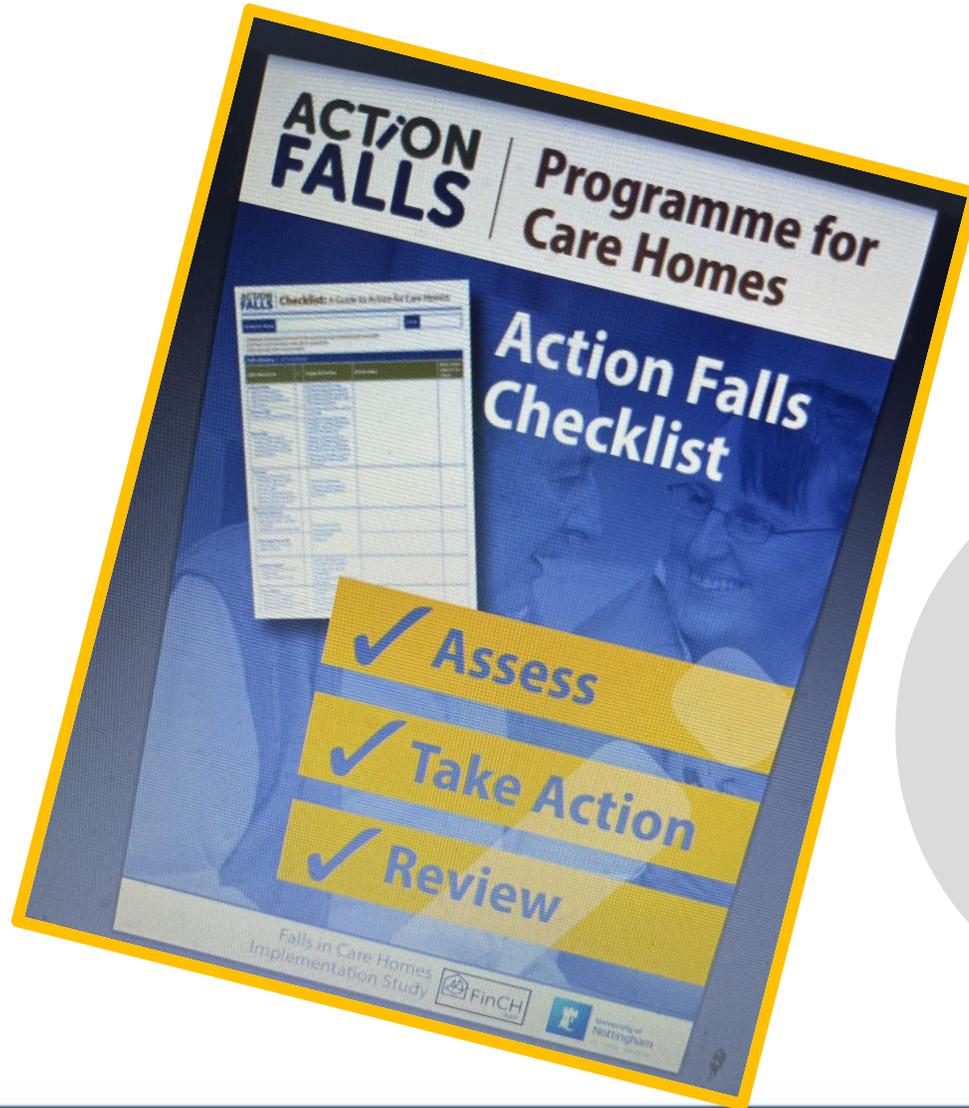
<https://apps.apple.com/us/app/react-to-falls/id1511531738?ls=1>



..guides their (care staff)
thought processes CH1

..Facilitates 'thinking
outside the box' CH2

Falls Awareness Poster



Falls Lead
(NHS)

Falls Champion
(Care Home)

FUNDED BY
NIHR | National Institute
for Health Research



**ACTiON
FALLS**

**FinCH Implementation
Study**

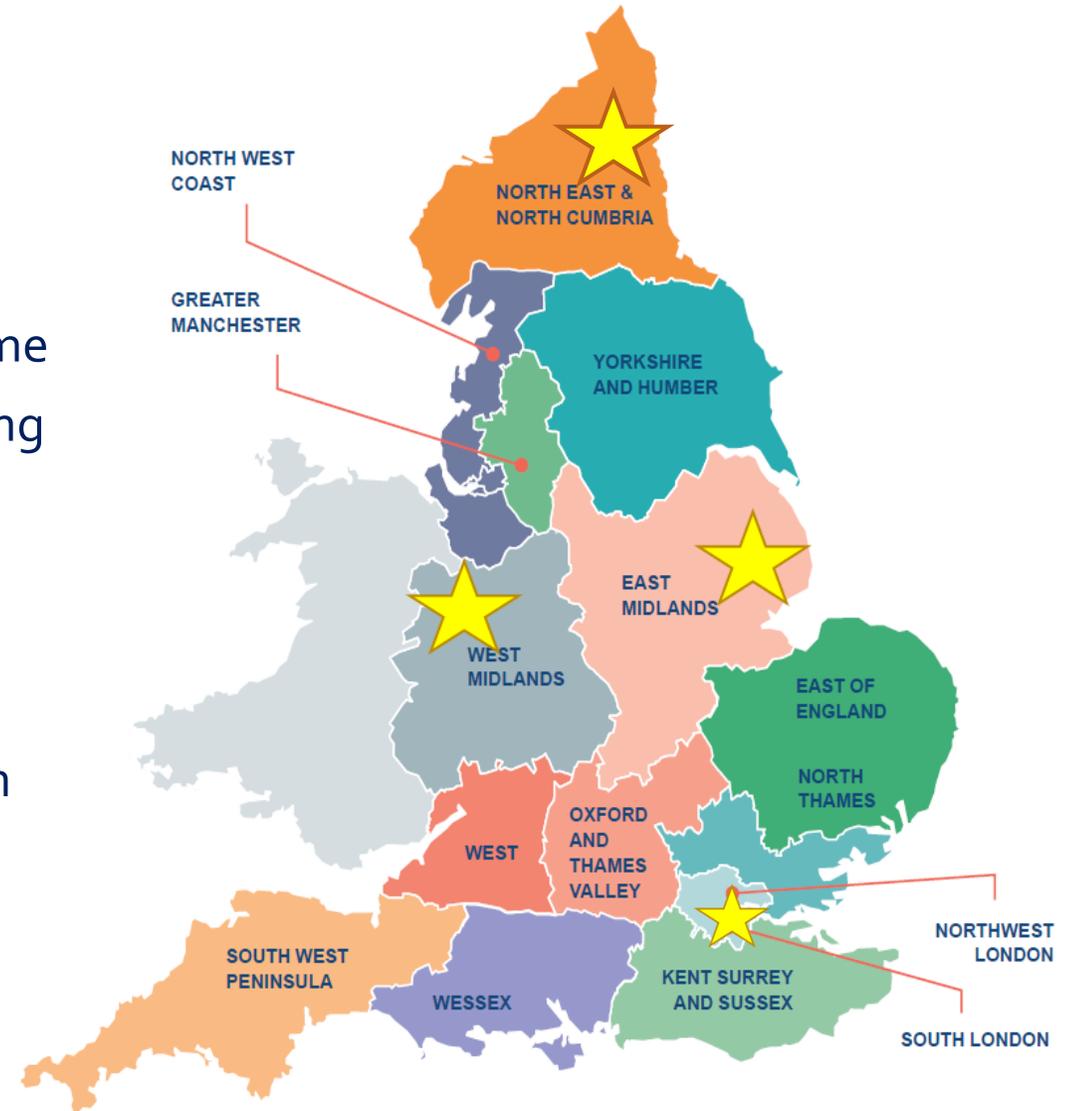
Aim of the study

To understand the best ways to enable Care Homes to use the Action Falls Programme in day-to-day care

What are we doing?

- Working with 60 Care homes across 4 locations
- Training care home staff to use the Action Falls programme
- Talking to care home staff about their experiences of using Action Falls
- Collecting data from questionnaires, events, falls records
- Updating the resources, writing how to use guides, return on investment guides, working with the NHS E, Local Authorities to get wider adoption.

Support-listen-adapt



Thank you for listening



ACTiON
FALLS