



# Older people's experiences of therapeutic exercise as part of a falls prevention service

Patient and public involvement

**March 2012**

---

Commissioned by:

## **The Royal College of Physicians**

The Royal College of Physicians is a registered charity that aims to ensure high quality care for patients by promoting the highest standards of medical practice. It provides and sets standards in clinical practice and education and training, conducts assessments and examinations, quality assures external audit programmes, supports doctors in their practice of medicine, and advises the government, public and the profession on healthcare issues.

Citation for this report: Royal College of Physicians. *Older people's experiences of therapeutic exercise as part of a falls prevention service – patient and public involvement*. London: RCP, 2012.

## **Copyright**

All rights reserved. No part of this publication may be reproduced in any form (including photocopying or storing it in any medium by electronic means and whether or not transiently or incidentally to some other use of this publication) without the written permission of the copyright owner. Applications for the copyright owner's written permission to reproduce any part of this publication should be addressed to the publisher.

Copyright © Royal College of Physicians 2012

ISBN 978-1-86016-xxx-x

Royal College of Physicians

11 St Andrews Place, London NW1 4LE

[www.rcplondon.ac.uk](http://www.rcplondon.ac.uk)

Registered Charity No 210508

## Contents

Contents	3
List of tables	5
Report authors	7
Glossary	8
<b>Foreword</b>	<b>9</b>
<b>Executive summary</b>	<b>10</b>
Key messages	11
Recommendations	13
Next steps	13
<b>Background</b>	<b>14</b>
The importance of falls and fracture services	14
The series of national audits	14
Exercise interventions as part of a falls service	14
Key objectives	15
Aim of project	15
<b>Methods</b>	<b>15</b>
Recruitment of sites	15
Patient sample	16
Data collection and entry	16
<i>Questionnaires</i>	16
<i>Returning the questionnaires</i>	16
<i>Return rate</i>	17
<i>Data entry</i>	17
<i>Checking the quality of data entered</i>	18
<i>Comments</i>	18
Pilot audit	18
Information governance	18
Presentation of results	19
<b>Results</b>	<b>20</b>

Results of the patient questionnaire	20
Results of the staff questionnaire	44
<b>Summary of findings</b>	57
Evidence base	57
Other issues raised	58
Key messages	61
Recommendations	61
Next steps	61
<b>Appendices</b>	
References	1
Patient Involvement Project Group	2
National Falls and Bone Health Audit Steering Group	3
Patient invitation letter	4
Patient information sheet	5
Staff information sheet	6
Patient questionnaire	7
Staff questionnaire	8

## List of tables

Table	Table no.	Page
<b>Methods</b>		
Response rate	1	17
<b>Patient questionnaire</b>		
Gender	2	20
Age group	3	20
Q1a Do you know who referred you for an exercise programme?	4	21
Q1b Who referred you for an exercise programme?	5	21
Q2 Did someone explain why you were referred for an exercise programme?	6	22
Q3a Did you feel you had the opportunity to discuss the decision to be referred for an exercise programme?	7	23
Q3b Did you have the opportunity to raise any concerns about taking part in an exercise programme?	8	23
Q4a Do you feel that your exercise programme was appropriately timed to help your recovery, or was it too soon or too late?	9	24
Q5 Where was your exercise programme held?	10	25
Q6 If you participated in a class, were you also given exercises to do at home in addition to the class?	11	25
Q7 Were you given a printed booklet with the exercises in, to remind you what to do at home?	12	26
Q8 If yes, did this include illustrations of the exercises?	13	26
Q9a Did you receive any guidance about how often you should do the exercises?	14	27
Q10 Which of the following were you advised to do as part of your exercise programme?	15	28
Q11 Which of the following did you use with your exercise programme?	16	30
Q12 If you used ankle weights and/or exercise bands, were either of these available to use:	17	30
Q13 Were your exercises made more difficult for you as you improved, for example by increasing the number or changing the type of exercise or using ankle weights?	18	31
Q14a If you attended an exercise class how many times did you attend each week?	19	33
Q14b If you attended an exercise class how many weeks did the course run	20	33
Q15a If you were supervised at home how often were you visited?	21	34
Q15b If you were supervised at home over what period of time did the exercise instructor visit you at home?	22	35
Q15c Were you contacted between visits to check progress or encouraged to contact between visits yourself if there was anything you needed to discuss?	23	36
Q15d If yes was this by phone, letter, email or text?	24	36

Q16 At the end of your exercise programme what advice or information were you given about how to continue exercising?	25	37
Q17a Did you continue to exercise after the end of your exercise programme?	26	37
Q17b If you continued to exercise are you still exercising now?	27	38
Q17c If you are still exercising now what exercises are you doing?	28	38
Q18a Can you tell us about your overall experience of your exercise programme by ticking one statement that sums up your views?	29	41
Q19 Overall, how satisfied were you with your exercise programme?	30	41

### **Staff questionnaire**

Q1 Currently, what are the three main reasons for not offering an exercise intervention to a patient?	31	44
Q2 Currently, what are the three main reasons for patients declining an exercise programme?	32	45
Q3a Currently what is the waiting time for a home based exercise intervention?	33	46
Q3b Currently what is the waiting time for going a group/class based exercise intervention?	34	47
Q4a Which of the following exercises illustrated do you routinely prescribe?	35	48
Q5a-b Are ankle weights/exercise bands used for patients where clinically indicated?	36	49
Q6a Are your patients given a printed home exercise booklet?	37	49
Q6b If yes, does this include illustrations of the exercises?	38	49
Q7a If you provide a class based intervention how many times a week do patients attend?	39	50
Q7b How many weeks do the courses run for?	40	50
Q8a If you provide a home based exercise programme how often are patients visited?	41	51
Q8b Over what period of time does the exercise instructor visit the patient at home?	42	51
Q10a What level of training do staff receive in order to teach exercise interventions (either home based or class based)?	43	53
Q11a Are any follow-on community exercises classes available in your area?	44	54
Q11c In general what types of follow-on classes are available for older people in the community?	45	55
Q12 If patients are encouraged to attend a follow-on community exercise class what type of class is suggested?	46	56

## Report authors

Report prepared by:

Jackie Riglin, MCSP

Falls prevention coordinator and clinical specialist physiotherapist

Cambridgeshire Community Services NHS Trust

Clinical associate, falls

Clinical Effectiveness and Evaluation Unit, Royal College of Physicians

Derek Lowe, MSc, C.Stat

Medical statistician

Clinical Effectiveness and Evaluation Unit, Royal College of Physicians

Dr Amanda Buttery BAppSci MSc PhD MSCP

Honorary clinical specialist physiotherapist

Guy's and St Thomas' NHS Foundation Trust

Naomi Vasilakis, BA

Project co-ordinator, Falls and Bone Health Audit Programme

Clinical Effectiveness and Evaluation Unit, Royal College of Physicians

**Members of the Patient Involvement Project Group (see appendix 2).**

**Report approved by the National Audit of Falls and Bone Health Steering Group (see appendix 3).**

**Acknowledgement** We would especially like to thank the older people who completed and returned the questionnaire. Finally we would like to thank everyone who helped in the design, performance and analysis of this project.

## Glossary

**Evidence-based exercise programmes:** Research has shown the type, frequency, intensity, duration and progression of exercise which is necessary to be effective in reducing falls rates. Two programmes commonly used in the UK are strongly supported by existing research evidence:

- **FaME (Falls Management Exercise) programme** - Participants attend a weekly class run by a specialist exercise instructor, (for example a physiotherapist, postural stability instructor, registered exercise professional), lasting between 45 and 75 minutes over at least 48 weeks. The programme includes floor work to reduce falls and long lies. The exercise is modified according to individual progress and the participants are encouraged to perform the exercises at home at least twice weekly.
- **Otago home exercise programme** - Participants are seen at home by a specialist exercise instructor (for example a physiotherapist, postural stability instructor, Otago exercise leader, registered exercise professional) at least 4 times during the first 8 weeks with a booster visit at 6 months and telephone follow-up each month between visits. Participants are encouraged to perform the exercises at home at least three times weekly for one hour or more and also to walk indoors or outdoors on 2 other days of the week. They are also encouraged to continue exercises for at least one year. The exercises are tailored and progressed according to the needs of the individual.

**Falls Prevention Service:** The National Service Framework for Older People refers to ‘an integrated specialist falls service.’ For the purpose of this project a Falls Prevention Service is taken to mean a coordinated, integrated, multi-professional and multi-agency service:

*Coordinated*, using a regular mechanism or meeting to agree strategy, and review progress towards objectives.

*Multi-agency*, eg health, local authority, voluntary sector.

*Multi-professional*, eg medical, nursing, physiotherapy, occupational therapy, social work.

*Integrated*, working to agreed protocols & pathways, utilising agreed communication pathways.

## Foreword

This report presents the findings from a postal questionnaire which asked older people about their experiences of therapeutic exercise as part of a local falls prevention service. It follows on from concerns raised in an earlier programme of work looking at older people's experiences of falls prevention services in general and complements the findings from the recent national audit of falls and bone health report in older people 2010.<sup>1-2</sup>

The questionnaire was sent to patients who had recently attended an NHS run exercise programme to reduce falls. It included questions about whether patients had:

- whether patients had participated in a class or home-based programme
- whether any guidance was given about how often the exercises should be done
- which exercises patients were given
- whether ankle weights were used
- whether exercises were made progressively difficult
- how long the programme lasted.

These aspects were chosen as they reflect the current evidence base for effective exercise interventions for reducing falls risk. Patients were also asked about the availability of long-term exercise classes in the community.

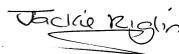
The patient questionnaire was supplemented by a survey of staff involved in the delivery of therapeutic exercise where these patients had attended. Staff were asked additional questions around the main reasons for not offering exercise to individuals and for patients declining an exercise programme, and the provision of follow-on community-based exercise classes.

Both questionnaires were developed by a multi-disciplinary group, which included members of the public who had participated in therapeutic exercise programmes to reduce falls (see appendix 2).

We encourage you to consider the summary of findings obtained from older people who have participated in NHS run exercise programmes, along with the key messages and recommendations within this report.



Janet Husk  
Programme manager



Jackie Riglin  
Clinical associate, Falls



Dr Jonathan Trembl  
CEEU Associate director

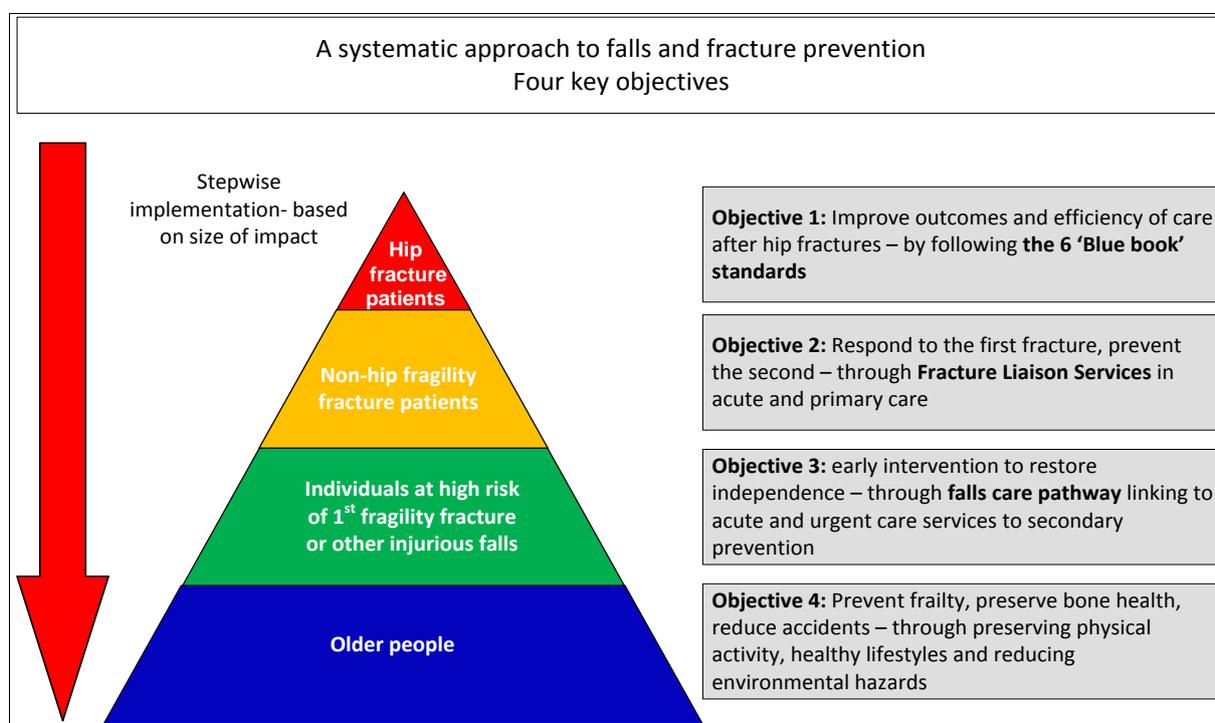
## Executive summary

Falling is a frequent, and often serious, occurrence in people aged 65 years and over. Falls and resultant fractures in people aged 65 and over account for over 4 million bed days each year in England alone.<sup>3</sup> Falling, and the fear of falling, has a significant effect on older people and their lifestyle resulting in loss of confidence, restriction of activity and subsequent reduction in quality of life.

### The Department of Health Prevention Package<sup>\*</sup>

In July 2009, partly in response to concerns raised by previous audits, the Department of Health (DH) in England published the *Prevention package for older people*. The *Prevention package* is intended to improve several aspects of NHS care for older people including falls and fractures.<sup>4</sup>

Four specific objectives are described in the *Prevention package*, prioritised on the size of health gain.



This report on therapeutic exercise is concerned primarily with delivering Objective 3: early intervention to restore independence, but encompasses delivery of Objective 2: responding to the first fracture to prevent the second and Objective 4: preventing frailty, preserving bone health and reducing accidents.

The evidence shows that active participation in an evidence-based exercise programme is a key component to a multi-factorial assessment and intervention plan to prevent and manage falls.<sup>5-6</sup>

This report presents the findings from a postal questionnaire which surveyed older people’s experiences of therapeutic exercise as part of a falls prevention service. The results are based on 1768 completed patient questionnaires returned to the Royal College of Physicians (RCP). A second questionnaire was sent to staff involved in the delivery of exercise to reduce falls where these patients had attended. One-hundred sites participated.

<sup>\*</sup> The *Prevention package* is available for download from:  
[www.dh.gov.uk/en/Publicationsandstatistics/Publications/DH\\_103146](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/DH_103146) [Accessed 8 March 2012]

## Key messages

The implementation of evidence-based exercise interventions by healthcare providers is incomplete and varies widely across participating sites.

There is a lack of long term follow-up classes for reducing falls in the community.

## Summary of findings

The evidence base for exercise interventions for reducing falls indicates that the exercise provided must be of the correct:

- type (ie targeted resistance training and dynamic balance)
  - frequency (ie minimum dose 50 hours, preferably at least three times each week)
  - intensity (ie sufficiently challenging to the individual and progressive)
  - duration (ie 15–52 weeks).<sup>7–8</sup>
1. *Responses from the patient and staff questionnaires indicated that many NHS providers are not delivering completely evidence-based interventions for reducing falls.*

For example:

- Only 29% of patients returning questionnaires used ankle weights for targeted resistance training to reduce falls.
- Only 52% of patients felt their exercise programme had been progressed.
- 81% of patients attending a class indicated that this had lasted 12 weeks or less.
- 73% of patients supervised at home indicated that their programme lasted for 3 months or less.

It is important to note that the FaME group programme was delivered to women aged 65 years and over living in the community who had sustained more than three falls in the last year.<sup>9</sup> The Otago home based programme was initially delivered to women aged 80 years and over living in the community and not undergoing rehabilitation ie had not been referred into the NHS.<sup>10</sup> However, participants in this current survey had either fallen or had balance problems and had been referred into healthcare and an exercise programme. Responses from the questionnaires suggest that those referred into NHS exercise programmes may be frailer than those participating in the studies above. A modified evidence-based exercise programme which is working towards reducing falls risk, rather than actual falls may be more appropriate. However, it remains paramount that all patients are encouraged to progress according to their ability.

2. *Patients need to be aware of the benefits of therapeutic exercise in falls prevention.*

Responses from the staff questionnaire showed that the two most common reasons perceived by staff for patients declining an exercise programme were that they 'don't feel exercise will help/is necessary' and that they 'feel too old to exercise.'

This shows the importance of staff understanding the benefits of exercise interventions to older people in reducing falls and being able to communicate this effectively to patients, including the fact that the research trials show that exercises are effective in those aged 80 years and over. It also highlights the importance of motivation training for both patients and staff referring onto and delivering exercise programmes.

*3. Those delivering evidence-based exercise programmes for reducing falls should be appropriately trained.*

In addition to a professional qualification (eg physiotherapy or occupational therapy), staff delivering NHS run exercise interventions should have an additional exercise leaders award (at Otago and/or Postural Stability Instructor level, not chair based), or be supervised by someone with this qualification for delivering specific evidence-based exercise interventions for reducing falls in older people. Such additional training is recognised by the Register of Exercise Professionals and has been endorsed by professional organisations including the Chartered Society of Physiotherapy.

However, responses to the staff questionnaire show that only 54% of sites have staff who have completed PSI training and 41% of sites have staff who have completed Otago training.

Exercise professionals delivering community classes as a follow on from NHS run programmes should have appropriate training, including an Otago and/or PSI qualification.

Over a third of respondents, who advise patients to attend follow-on community classes, said that the qualifications of some or all of the people leading these classes were unknown to them. This is concerning as they may not hold a exercise qualification specific to older people, and may therefore be including exercises that are at best ineffective in reducing falls and at worst increasing the risk of falls and fractures.

*4. Funding priorities can be a barrier to delivering exercise programmes.*

Staff responses showed that reductions in funding affected availability of exercise interventions in terms of staff resources, equipment such as ankle weights, transport and venues. Lack of funding also affected staff training.

A lack of long term evidence-based exercise classes in the community is shown clearly in responses to the staff questionnaire. Comments given by patients on how their exercise programme could be improved included requests for longer courses, follow-up visits and better transport to classes.

These comments show that conflicting funding priorities can also be a barrier to delivering evidence-based exercise programmes for reducing falls.

*5. There is a lack of long term follow-up classes for reducing falls in the community.*

The evidence base for exercise interventions for reducing falls shows that as soon as the specific exercises are discontinued, the person will revert to their pre-intervention risk of falls.<sup>9</sup>

However, while 91% of patients said they continued to exercise (either at home or in a class) once their exercise programme finished, patient comments indicated that many may not be continuing with evidence-based exercises for reducing falls.

Evidence from the previous RCP patient involvement project looking at older people's experiences of falls and bone health services shows that most older people are more likely to continue exercising in a class than on their own at home.<sup>1</sup> However, only 11% of those still exercising said they continued to exercise in a class. Responses from staff show that in general patients are given appropriate advice about continuing an exercise programme, but this is often limited by a lack of long term follow-up classes in the community.

Therefore, in order to deliver effective exercise provision for reducing falls, an exercise continuum across health and other statutory and voluntary agencies needs to be developed at a local level.

## Recommendations

Commissioners need to commission a local, integrated exercise continuum across health and local authorities/voluntary sector to ensure long term provision of evidence-based exercise programmes for reducing falls run by appropriately qualified staff.

The quality of training and delivery of exercise programmes for reducing falls needs to be monitored locally and nationally against the evidence base for delivering effective exercise programmes to reduce falls.

## Next steps

If you are reading this report and are a chief executive we suggest you:

- review the provision of exercise programmes within your organisation to ensure they are evidence-based for reducing falls
- ensure staff delivering exercise programmes are appropriately trained in delivering specific evidence-based exercise interventions for reducing falls in older people
- ensure funding priorities within your organisation do not act as a barrier to delivering exercise programmes, eg adequate funding for staff, including staff training and essential equipment such as ankle weights.

If you are reading this report and are a commissioner we suggest you:

- review the provision of exercise programmes you commission to ensure they are evidence-based exercise for reducing falls (this may include disinvestment in existing non evidence-based exercise)
- commission specific long term follow-up classes for reducing falls, moving towards joint commissioning in an exercise continuum across health and other local statutory and voluntary agencies (this may include disinvestment in existing non evidence-based exercise).

If you are reading this report and are a lead clinician we suggest you:

- review the provision of exercise programmes within your organisation to ensure they are evidence-based exercise for reducing falls
- ensure staff delivering exercise programmes are appropriately trained in delivering specific evidence-based exercise interventions for reducing falls in older people
- ensure staff routinely explain to patients the benefits of exercise and why they are being referred for an exercise programme
- ensure patients are given an opportunity to express any concerns they may have about being referred and/or taking part in an exercise programme.

## Background

### The importance of falls and fracture services

Falling is a serious event and a frequent occurrence in people aged 65 years and over. Falls, and the fear of falling has a significant effect on older people and their lifestyle resulting in a loss of confidence, restriction of activity and subsequent reduction in quality of life. In addition to the individual costs, falls have considerable costs to care and health services such as ambulance call outs, inpatient treatments, rehabilitation and long term follow-up care and support.

Falls and resultant fractures in people aged 65 and over account for over 4 million bed days each year in England alone.<sup>3</sup> Injurious falls, including over 60,000 hip fractures annually, are the leading cause of accident-related mortality in older people.<sup>3</sup>

Well organised services, based on national standards and evidence-based guidelines can prevent future falls and reduce death and disability from fractures.<sup>4</sup>

### The series of national audits

The National Falls and Bone Health Audit Programme has produced a series of national audits looking at both the organisation of services for falls and bone health in older people and clinical care following hip and other fragility fractures.<sup>2, 11–13</sup>

To enhance audit findings and obtain the views of people using falls and bone health services, patient experience focus groups were convened in 2008 and were followed by a patient experience postal questionnaire in 2010.<sup>1</sup>

This previous patient and public engagement work highlighted inadequate local provision of long term evidence-based exercise programmes.

### Exercise interventions as part of a falls prevention service

The strongest evidence for preventing and managing falls is around participation in an exercise programme as part of a multi-factorial assessment and intervention plan. NICE Clinical Guideline 21 recommends strength and balance training particularly for older community-dwelling people with a history of falls and/or balance and gait deficits.<sup>6</sup> Guidelines outline that muscle strengthening and balance programmes should be individually prescribed and monitored by an appropriate health professional. Evidence from a recent Cochrane systematic review and meta-analysis confirmed that multiple-component group exercise reduced the rate of falls and risk of falling, as did individually prescribed multiple-component home-based exercise.<sup>10</sup>

Specifically, the exercise provided must be of the correct:

- type (ie targeted resistance training and dynamic balance)
- frequency (ie minimum dose 50 hours, preferably at least three times each week)
- intensity (ie sufficiently challenging to the individual and progressive)
- duration (ie 15–52 weeks).<sup>7–8</sup>

The evidence base for exercise interventions reducing falls shows that when the specific exercises are discontinued, the person will revert to their pre-intervention risk of falls.<sup>9</sup> The recent RCP patient

involvement project looking at older people's experiences of falls and bone health services reported that older people are more likely to continue exercising in a class than on their own at home.<sup>1</sup>

There are several established evidence-based exercise programmes for reducing falls and the risk of falling. Some, including Otago and FaME are exercise only interventions, and others including The Frailty and Injuries: Cooperative Studies of Intervention Techniques (FICSIT) are part of a multi-factorial intervention.<sup>14-15</sup>

Evaluation of the Otago exercise programme showed:

- a 35% overall reduction of falls
- the programme was more effective in those aged 80 years and over than those aged 65–79, especially in terms of the prevention of injurious falls
- those with and without history of falls benefit equally.<sup>16</sup>

Evaluation of the PSI programme showed:

- a reduction in falls by 54%
- injurious falls reduced by 75%
- a reduction in admissions to care homes or hospital one year later.<sup>9</sup>

## Key objectives

- To obtain patient feedback via a postal questionnaire about their experiences of NHS run therapeutic exercise to reduce falls.
- To obtain staff feedback about the availability and quality of therapeutic exercise being provided by the NHS to older people.
- To summarise the findings in a report and make recommendations.

## Aim of project

The aim of this project was to obtain patients' experiences of NHS run therapeutic exercise programmes to reduce falls. We developed a specific questionnaire based on concerns raised both by participants in the older people's experiences of falls prevention services report and in the 2010 national audit of falls and bone health.<sup>1-2</sup>

A second questionnaire was sent to staff members involved in the delivery of NHS run exercise interventions for reducing falls risk in NHS trusts.

The content of both questionnaires was developed by a multi-disciplinary project group (see appendix 2) which included patient and staff representatives.

## Methods

### Recruitment of sites

The initial assessment indicating suitability for participation in a long term exercise programme is usually provided by community services so in June 2011, all primary care providers in England, Local Health Boards in Wales, and Health and Social Care Trusts in Northern Ireland and the Islands were invited to participate by letters sent to the chief executive, and emails to the previous audit lead (for the National Falls and Bone Health Audit Programme) and clinical audit staff.

At this time some primary care organisations were at various stages of reforming their provider functions. A number of primary care providers had integrated with their local acute or mental health trust and so details of the project were sent to all trusts that completed the 2010 falls and bone health audit. Where sites had reformed and previous contact details were out of date, letters were sent to the falls clinical lead and clinical governance manager.

A total of 94 trusts agreed to take part. Several trusts chose to send out questionnaires from more than one of their sites making a total of 113 sites.

These included 11 Local Health Boards in Wales, 3 Health and Social Care Trusts in Northern Ireland, 41 community service providers and 58 integrated care organisations (eg a trust combining some of the following elements acute, mental health, social care and community services) in England and the Channel Islands.

## **Patient sample**

Participating sites were asked to identify up to 40 patients who had been referred to their local NHS falls prevention service for a multi-factorial falls risk assessment and then offered an exercise programme as part of the intervention plan to reduce risk of falls. Patients must have completed an exercise programme within the last 12 weeks. Sites were advised not to invite patients who had been discharged from services by more than 12 weeks as they may be less able to recall what had happened.

The exercise programme could be delivered in a patient's home or in a class. The exercise programme could be delivered by a trained healthcare professional or an exercise instructor.

## **Data collection and entry**

### **Questionnaires**

In October 2011 each participating site was sent 40 questionnaires to be distributed to patients. Not all sites were able to identify 40 patients that met the sample criteria.

Questionnaires, together with an invitation letter on local NHS trust headed paper (see appendix 4); a patient information sheet (see appendix 5) and a pre-paid reply envelope were sent/given to appropriate men and women who had recently completed a health based exercise programme.

Patients were advised that someone (eg a carer) could help them complete the questionnaire if required.

Staff questionnaires were emailed to the lead at each participating site.

### **Returning the questionnaires**

Patients completed the questionnaire and returned it anonymously to the RCP project team via a pre-paid envelope. As each questionnaire was received it was allocated a number and the date received was noted on the front page. Staff questionnaires were returned directly to the project team by email, post or fax. The staff questionnaires were not anonymous.

The original deadline to return the questionnaires was 18 November 2011, but questionnaires were accepted until data entry and cleaning finished on 3 January 2012. Thirteen questionnaires were received after this date but they were not included in the analysis.

## Return rate

### *Patient questionnaires*

A total of 1771 questionnaires were returned to the RCP. Three questionnaires were excluded, as they were either entirely blank or incomplete and included a note saying they had not been prescribed an exercise programme. This left a total of 1768 questionnaires which were included in the analysis.

Sites were asked to state how many questionnaires they had given out and they were asked for the breakdown of this total by gender and also by age group (<55, 55–64, 65–74, 75–84, 85–94, 95+). Of the 113 participating sites there were 86 that gave full usable data in this regard. From these 86 sites we were able to obtain estimates of overall response (57% (1402/2478)).

We were also able to obtain estimates of response rates by gender and by age group, as follows:

**Table 1: Response rate**

<b>Overall</b>	57%	(1402/2478)
<b>Male</b>	51%	(397/776)
<b>Female</b>	57%	(972/1702)
<b>Age &lt;55 years</b>	50%	(7/14)
<b>Age 55-64 years</b>	40%	(33/82)
<b>Age 65-74 years</b>	51%	(206/406)
<b>Age 75-84 years</b>	54%	(656/1215)
<b>Age 85-94 years</b>	60%	(443/733)
<b>Age 95+ years</b>	34%	(10/29)

Note that these slightly underestimate the response by gender and by age since gender was not known for 33 responders and age was not known for 47 responders.

### *Staff questionnaires*

A total of 113 questionnaires were sent out and 100 questionnaires were returned to the RCP.

## Data entry

The staff and patient questionnaires were entered by the project team into Microsoft Excel. Once completed this was exported into an SPSS data file.<sup>†</sup> Unanswered or missing answers were coded as such. Responses that were difficult to interpret, such as ticking more than one box or writing a contradicting comment alongside a tick box were recoded by agreement within the project team as follows:

- Those with no ticks were coded as missing (not interpretable), except in questions 1a, 7, 9a and 17b where the answer was entered as 'yes' if the subsequent question had been answered. If the patient had indicated in Q5 that they were only supervised at home the answer for question 6 was entered as 'not applicable I was supervised at home.'
- Those with more than one tick or contradicting answers were coded as missing (not interpretable), except in questions 11 and 12 where they were altered if the answers indicated that both ankle weights and exercise bands were used and/or they were available both in a class and at home.

<sup>†</sup> SPSS is computer software used for statistical analysis.

## Checking the quality of the data entered

A systematic method was used to check the questionnaire data entered against the hardcopy questionnaires. Using this method 100 questionnaires were identified for checking. A second person performed the checking. Of the selected questionnaires nine items needed correction, these all being simple typing mistakes. There were 103 data field columns and therefore 10300 cells for data entry, making an error rate of less than one in a thousand. No further checking was deemed necessary by the project statistician.

## Comments

There were opportunities to provide comments within the questionnaire. However, not everyone provided a comment when given the opportunity and some people provided a comment when they were not asked to. Patient's comments were entered verbatim unless what they said identified the patient or local service.

The comments were analysed using a qualitative research method called thematic analysis. Computer software (NVIVO 8 (QSR International Pty Ltd. Version 8, 2008)) was used to facilitate this process.

## Pilot audit

The staff and patient questionnaires were piloted in August 2011. Four sites were asked to distribute between 10 and 15 patient questionnaires. Nineteen patient questionnaires were returned to the project team. Twenty-three sites were asked to complete the pilot staff questionnaire and nine were returned to the project team. Regional workshops to disseminate the results of the 2010 falls and bone health audit were held during June, July and September and attendees were asked to complete the staff questionnaire and provide feedback.

The pilot and feedback from the workshops were evaluated by the project team, resulting in changes to both questionnaires which were signed off by the project sub group in September 2011.

## Information governance

The National Research Ethics Service (NRES) confirmed that an ethical review by an NHS Research Committee was not required for this project.

Patients were identified and contacted directly by participating sites and the RCP had no contact details for the patients. Questionnaires were returned by the patient directly to the RCP, these were anonymous and no patient identifiable information was collected. The patient covering letter and information sheet clearly stated that the patient did not have to take part and their treatment would not be affected by their participation. Patient consent was obtained by the patient completing and returning the questionnaire.

A letter was provided for clinical governance and/or audit departments after clinical leads were identified to ensure that the paper work used fulfilled their patient and public involvement requirements.

## **Presentation of results**

The national report shows the pooled, anonymised results from all participating sites.

Where percentages are given in tables this is usually the number that responded out of the 1768 for the patient questionnaire and 100 for the staff questionnaire. Where question responses only apply to a subset of participants, the size of the subset is specified.

Where percentages are given in text their denominators exclude the missing 'blank' responses and where appropriate the stated 'don't knows'.

Where participants were given the opportunity to comment, the number of comments received is reported. The key themes identified in the thematic analysis are presented alongside supporting examples extracted verbatim from the survey responses.

The percentages for the responses within tables have been rounded up or down so their total will not always equal 100.

Site-specific reports are provided to participating organisations with their site level information presented alongside the national data.

## Results

### Results of the patient questionnaire

The best estimate of questionnaire response is 57% (1402/2478) based on data from 86 sites that said how many questionnaires they had sent out. The results presented below are based on 1768 completed patient questionnaires returned to the RCP.

**Table 2: Gender**

Possible options	% (Number) of responses
Female	70% (1240)
Male	27% (485)
Response missing	2% (43)

**Table 3: Age group**

Possible options	% (Number) of responses
54 years or less	0.5% (8)
55–64 years	2% (40)
65–74 years	14% (256)
75–84 years	46% (822)
85–94 years	32% (565)
95 years or greater	1% (17)
Response missing	3% (60)

Age range = 48–101

Median (IQR) age = 82 (77–86)

Mean age = 81.0

The age and gender of people replying to this questionnaire is similar to other data collected from falls prevention services as part of the National Falls and Bone Health Programme, with the majority being female and above 75 years of age.

For example, in the patient and public involvement project 2010, 69% were female and 82% were above 75 years of age.<sup>1</sup>

Research trials show that the exercises are most effective in those aged 80 years and over with a reduction in frequency of falls and moderate injuries in participants over 80 years.<sup>10</sup> Therefore, it is encouraging that 83% of participants were over 75 years of age, with the oldest patient being 101.

**Table 4: Q1a Do you know who referred you for an exercise programme?**

Possible options	% (Number) of responses
Yes	93% (1640)
No	3% (47)
Don't know	4% (70)
Response missing	0.6% (11)

**Table 5: Q1b Who referred you for an exercise programme? (tick one or more boxes)**

Possible options	% (Number) of responses
GP	36% (635)
Hospital doctor	19% (330)
Physiotherapist	25% (441)
Occupational therapist	9% (164)
Nurse	7% (127)
Exercise instructor	3% (61)
Family	1% (26)
You, your self	4% (74)
Other	8% (140)
Don't know	0.3% (5)
Response missing / whole question left blank	7% (130)

Other responses for this question included:

- Healthcare professionals.
- Sheltered housing staff.
- Voluntary sector.
- Social services.
- Leisure services.
- Fire service.
- Friend/family/neighbour.

These results show that the majority of people are referred to an NHS run exercise programme by a healthcare professional. With an increase in the amount of information now available to the general public on why people are less steady on their feet as they get older and what can be done to help, a higher percentage of self or family referrals might have been expected. However, such information often recommends visiting the GP as a first step, who may refer onto the local falls prevention service. This is reflected in the returned questionnaires.

**Table 6: Q2 Did someone explain why you were referred for an exercise programme?**

Possible options	% (Number) of responses
Yes	84% (1486)
No	9% (154)
Don't know	4% (77)
Response missing	3% (51)

There were comments from 272 respondents commented about whether someone explained why they were referred.

Many respondents described the explanations given by healthcare professionals and social workers for their referral, such as to improve their confidence, their muscle and bone strength and to reduce the likelihood of future falls. Others described the timing of the referral and how it had occurred following attendance at an Emergency Department or following a hospital admission and how staff at the time had explained their referral for an exercise programme.

Other respondents emphasised the important role of family and friends in initiating referrals and explaining the reasons for referral, for example:

*'Family explained it was to help get mobile again.'*

*'I had friends who went to the local class and they said it had helped and they walked more easily.'*

Some older people commented how they were proactive about seeking help, for example:

*'My husband and I attended a programme several years back, finding it beneficial. Enquired if our GP would refer us again.'*

*'It was I who mentioned to the nurse my fear of falling.'*

*'After having had 2 serious falls with a broken wrist and badly injured knees, I had several months unable to walk and my legs became very weak so I asked my GP for help and he told me about the falls prevention service.'*

Others commented how health promotion initiatives had contributed to self-referral, for example:

*'Council open days have advice on many things for senior citizens and we were informed of the preventing falls programme.'*

*'Saw the leaflet about falls at the Doctors surgery.'*

**Table 7: Q3a Did you feel you had the opportunity to discuss the decision to be referred for an exercise programme?**

Possible options	% (Number) of responses
Yes	78% (1381)
No	11% (192)
Don't know	5% (94)
Response missing	6% (101)

**Table 8: Q3b Did you have the opportunity to raise any concerns about taking part in an exercise programme?**

Possible options	% (Number) of responses
Yes	70% (1236)
No	17% (307)
Don't know	6% (102)
Response missing	7% (123)

As motivation and compliance are key components to a successful evidence-based exercise programme for reducing falls, it is encouraging that the majority of patients referred (87%, 1486/1717) knew why they had been referred (Q2), and 75% (1236/1645) felt they had an opportunity to discuss the reason for referral (Q3a) and to raise any concerns about taking part in an exercise programme (Q3b).

Of the 187 comments received about having the opportunity to raise concerns most respondents provided further details about how their concerns had been addressed.

The key themes about their concerns centred on their perceived ability to be able to participate, venue location and transport. For example:

*'I was concerned about my fragile bones. The physio assured me of the programmes safety and gentleness.'*

*'I was assured that if I found the exercises too strenuous or uncomfortable I would be able to stop at any time and rest until I felt I was more ready to try again.'*

*'Yes, my concern was the venue and the distance from home, however it was eventually arranged nearer home due to the numbers able to attend the local civic centre.'*

*'I had doubts about my ability to cope but I figured the doctor knew what he was doing. I don't tend to question people in authority about decisions.'*

However, a minority of patient comments showed that they were not aware of their referral and that they did not have an opportunity to raise concerns. For example:

*‘Although I was surprised when first contacted I was pleased to accept the exercise programme.’*

*‘First time yes. Second time no, not really. Never received a letter – had no idea how long the programme was or where I was being taken!’*

**Table 9: Q4a Do you feel that your exercise programme was appropriately timed to help your recovery, or was it too soon or too late?**

Possible options	% (Number) of responses
Too soon	0.7% (13)
About right	79% (1395)
Too late	7% (127)
Don’t know	7% (131)
Response missing	6% (102)

Given the current financial constraints on the NHS, with a corresponding reduction in staff resources in many services leading to longer waiting lists, it is encouraging that 84% (1395/1666) of those returning questionnaires felt that their exercise programme was at an appropriate time to help recovery.

There were comments from 170 respondents about the timing of their exercise programme. The key reasons for patients feeling their referral was too late were due to waiting lists and lack of staffing. For example:

*‘Strong demand for places with limited numbers.’*

*‘Home programme too late as therapist on leave.’*

Others felt the opportunity to participate in the programme sooner or earlier in life would have provided greater benefits. For example:

*‘I am too old now I should have had this sooner.’*

*‘I would have benefited starting earlier - only in terms of my age (94 years).’*

*‘If someone had offered the programme years ago it would have helped sooner.’*

*‘Perhaps if my exercise programme had been sooner I may have avoided some of the falls. Just a thought!’*

Some comments related to delayed referral processes and poor administration of referrals. For example:

*‘I was lucky. My family telephoned to chase referral.’*

*'Took too long to be able to join class. Initial letter went to wrong place. I had to remind GP surgery I had not heard after a month.'*

Other comments related to a lack of awareness of falls prevention services and included:

*'I've been falling over and not hurting/injuring myself for years. I hadn't realised that other people don't fall over as much as me! I didn't know until I was hospitalised for recent falls injury that there was help available for falls prevention.'*

**Table 10: Q5 Where was your exercise programme held? (please tick all that apply)**

Possible options	% (Number) of responses
In a hospital	35% (613)
GP practice	2% (31)
Community venue eg church hall, sheltered housing, day centre	30% (535)
Leisure centre/gym	6% (100)
Own home	23% (399)
Other	11% (199)
Response missing	4% (64)

Of the 198 additional comments made, 125 indicated community health venues and 14 other community venues. Many of the residual others were local names eg 'zion' which could not be interpreted.

Responses indicate that two-thirds of patients engaged in group-based exercise programmes located either at a hospital or community venue. Nearly a quarter reported they participated in a home-based exercise.

**Table 11: Q6 If you participated in a class, were you also given exercises to do at home in addition to the class?**

Possible options	% (Number) of responses
Not appropriate: I was supervised at home	19% (338)
<b>Possible options (excluding not appropriate) (N=1433)</b>	
Yes	91% (1301)
No	5% (74)
Response missing	4% (55)

As the current evidence base for exercise programmes for reducing falls indicates that exercises need to be completed on at least three days each week, it is encouraging that over 90% of patients were given a home exercise programme to complete as well as attending a class.<sup>7-8</sup>

**Table 12: Q7 Were you given a printed booklet with the exercises in, to remind you what to do at home?**

Possible options	% (Number) of responses
Yes	87% (1531)
No	10% (182)
Don't know	0.5% (8)
Response missing	3% (47)

Of the 221 additional comments provided in response to this question most commented that they had been given a leaflet or printed sheets rather than a booklet. Some specified that they were provided with an Otago booklet. However, a few commented that they would have liked to receive a booklet indicating that this was not provided. Some described that hand drawn exercises were also given. Many respondents commented on the high quality of booklets and printed materials, however very few reported poor quality materials. For example:

*'Single sheets given (rather scruff!) A booklet would be easier to keep and handle.'*

Additionally, one participant reported:

*'Was given the opportunity to purchase an exercise book, also theraband which I did.'*

It is disappointing that not all patients were given printed booklets as all the Otago and PSI exercises, with illustrations, are available to the general public free of charge on the Later Life Training website.<sup>‡</sup>

**Table 13: Q8 If yes (to Q7, N=1531), did this include illustrations of the exercises?**

Possible options	% (Number) of responses
Yes	98% (1499)
No	0.9% (14)
Don't know	0.7% (11)
Response missing	0.5% (7)

It is interesting to note that while 98% of staff reported giving patients a printed home exercise booklet (Q6a page 49) only 89% (1531/1721 after excluding missing blank responses) of patients reported being given one (Q7). Of these, 98% included illustrations (Q8).

Some participants commented on other ways that exercise materials were provided such as DVDs and tapes. One participant described that illustrated exercises were given also *'on a printed tea towel'*.

Seven staff provided further details for not giving a printed booklet and comments related mainly to a lack of electronic resources for providing printed materials. For example:

*'Sometimes exercises are drawn and written out. To make exercises specific to patient in home environment, drawing and written explanations are more appropriate as lack of electronic resources in community setting.'*

<sup>‡</sup> [www.laterlifetraining.co.uk/home-exercise-booklets-free-to-download/](http://www.laterlifetraining.co.uk/home-exercise-booklets-free-to-download/) [Accessed 8 March 2012]

**Table 14: Q9a Did you receive any guidance about how often you should do the exercises?**

Possible options	% (Number) of responses
Yes	90% (1594)
No	5% (83)
Don't know	2% (44)
Response missing	3% (47)
<b>If yes (N=1594), was this:</b>	
Every day	55% (872)
4–6 days a week	10% (153)
2–3 days a week	27% (430)
Once a week	4% (56)
Less often	0.4% (6)
Other	4% (67)
Response missing	0.6% (10)

Other responses included:

- Anytime.
- 5 times a day.
- As much as possible.
- Don't know.
- For me to decide.
- When watching TV.

Of the 90% of patients who received guidance as to how often they should complete their exercise programme, 64% were advised 4 or more days a week, which is within the evidence-based recommendation of at least 3 days a week. Another 27% who were advised to complete the exercises 2–3 days a week may have been within the recommendation.

55% of patients were advised to complete their exercise programmes daily, but the guidance for strength exercises is at least three times a week.<sup>7–8</sup> If completed daily, this could increase the risk of injuries and soreness as there is insufficient time for the muscles to rest between sessions.

The strength exercises could be split up so that different muscle groups are worked on different days, or patients could be advised for example to do the balance exercises daily and strength exercise every other day. This was described by one participant in the 'other' response section:

*'Although some exercises were prescribed for 4 to 6 days a week, certain ones (with weights) for 2 to 3 days a week.'*

It is disappointing that not all those leading evidence-based exercise programmes for reducing falls are giving accurate guidance on how often the exercises should be completed.

**Table 15: Q10 Which of the following were you advised to do as part of your exercise programme?**

Possible options	% (Number) of responses		
	Yes	No	Missing (Blank)
Calf (Heel raises)	82% (1441)	69	258
Toe raises	78% (1383)	93	292
Side hip strengthening	76% (1348)	98	322
Front knee strengthening	77% (1363)	111	294
Back knee strengthening	69% (1228)	167	373
Knee bends	74% (1301)	118	349
Toe walking	63% (1119)	213	436
Heel toe standing	72% (1270)	140	358
Heel toe walking	66% (1161)	164	443
One leg stand	70% (1244)	138	386
Sideways walking	65% (1142)	192	434
Heel walking	54% (963)	272	533
Sit to stand	78% (1375)	95	298
Backwards walking	53% (929)	303	536
Heel toe walking backwards	45% (796)	365	607
Walking and turning around (figure of 8)	50% (879)	333	556
Stair walking	39% (681)	460	627
Walking programme	26% (463)	228	1077

NOTE: 7% (123/1768) left the entire question BLANK. This could either mean 'NO' or 'Not answered' but because questions either side of this question were completed they probably mean 'NO'. Many respondents merely placed a tick against several pictures of exercises and left the remaining pictures BLANK instead presumably of placing a cross (X) against them. Occasionally some responders used a mix of ticks and crosses and leaving BLANK. It is presumed though that the majority of BLANKS mean NO.

The illustrated exercises used in the survey comprise the evidence-based Otago Exercise Programme and were selected due to their common use in NHS run exercise programmes. They were selected by the project steering group as likely to be at an appropriate level for most people attending therapeutic exercise programmes. Although alternative and more advanced exercises may be suitable for some people, they were not included in the survey in an attempt to reflect the types of exercises initially prescribed in NHS run programmes rather than those which may be more likely to be appropriate at a follow-on long term community class.

Table 15 illustrates how many patients were prescribed each type of exercise. Overall, patients reported that both strength and balance exercises were prescribed. The least common exercises prescribed were stair walking or a walking programme.

Of those completing the staff questionnaire 99% indicated that they routinely prescribed calf raises and 100% prescribed sit to stand. As with the patient questionnaire walking programme (60%), heel toe walking backwards (63%) and stair walking (65%) were the least frequently prescribed exercises. (Q4a page 48).

Comments were made by patients and staff that stair walking was only done with those who have stairs at home, and a walking programme only given to those able to walk outdoors independently. However, these exercises should be included for all patients, as they are part of the evidence-based programme and excluding them may reduce efficacy of the programme.

Those who cannot walk outdoors alone can be encouraged to complete walking circuits indoors. It is acknowledged that stair walking is more difficult to adapt if the home and/or class venue do not have stairs to practise on. However, in order to increase independence, the ability to step up and down is essential and most venues will have at least a step that can be used instead of stairs.

Staff were asked to describe the reasons for not prescribing any of the illustrated exercises, 82 respondents provided comments. Key themes included:

- Patient safety and risk. For example:
  - low staff to patient ratios restricting the intensity of the exercises that could be safely prescribed
  - concerns with patients performing the exercises safely without supervision as part of a home exercise programme.
  
- The need for individualised exercise prescription. For example:
  - patients may have other health problems such as multiple co morbidities, reduced cognition, musculoskeletal problems, and therefore not all exercises may be suitable
  - some of the exercises included in the survey were too advanced for the clients referred to their services.
  
- Prescription of alternative exercise and programmes. For example:
  - use of functional and dynamic activities
  - providing other falls interventions such as 'Tinetti balance exercise plans'.
  
- Environmental restrictions to exercise prescription. For example:
  - limited space meant that some exercises were not prescribed or were modified.
  
- Lack of staff training. For example:
  - not all staff trained to deliver all of the exercises presented in the survey
  - only the physiotherapist could perform some exercises eg progressive strengthening training.
  
- Patient adherence to exercise. For example:
  - a reduced number of exercises may be prescribed to some patients in an attempt to increase adherence to the programme.

Comments included:

*'Alternative exercises used instead/more functional alternatives used.'*

*'Lack of space and adequate support for toe/heel/backward walking.'*

*'All exercises prescribed in a group setting but may not be in everybody's home exercise programme if there are safety concerns due to lack of supervision and falls risk.'*

*'Stair climbing undertaken for those who need to do stairs.'*

*'Most patients we see do not have the level of balance to carry out these exercises. A high percentage of patients are also housebound and therefore cannot take place in a walking programme.'*

*'No longer have staff to supervise walking programme so only offered if patient safe to be independent.'*

*'Staff not fully trained in all exercises.'*

The comments raise important issues about the delivery of evidence-based exercise programmes for reducing falls, which are discussed later in the report (*Summary of findings* page 57).

**Table 16: Q11 Which of the following did you use with your exercise programme?**

Possible options	% (Number) of responses
Ankle weights	12% (219)
An exercise band	34% (598)
Both ankle weights and an exercise band	14% (244)
I did not use ankle weights or exercise bands	27% (479)
Don't know	2% (31)
Response missing	11% (197)

**Table 17: Q12 If you used ankle weights and/or exercise bands (N=1061), were either of these available to use:**

Possible options	% (Number) of responses
As part of a class	44% (465)
In class and at home	41% (431)
At home only with the exercise instructor present	1% (14)
At home with or without the exercise instructor present	9% (99)
Response missing	5% (52)

Excluding the missing blank responses 29% (463/1571) of patients completing the survey reported using ankle weights in their exercise programmes even though progressive resisted strength training is a key element of evidence-based exercise for reducing falls.

11% of those completing the staff questionnaire indicated that ankle weights were used for all patients where clinically indicated, 19% for most patients and 33% for some patients (Q5a-b page 49).

Reasons for not using ankle weights were given by 45 staff and 19 staff reported reasons for not using exercise bands:

Key themes were:

- Lack of funding for equipment.
- Lack of staff training to use weights.
- Concerns about patient health and safety including infection control issues relating to shared use of equipment.

Reasons for not using ankle weights where clinically indicated included:

*‘Cost and availability.’*

*‘Fragility of many of our patients.’*

*‘Infection control.’*

*‘No resources. No trained staff to use such equipment.’*

*‘Weights not generally used due to difficulty applying weights, possible skin problems and lack of sensation.’*

*‘Unable to find any evidence to support this.’*

Although completing these or similar strength exercises without weights may improve muscle strength in more frail patients, this is not evidence-based practice for reducing falls.

These comments again raise important issues about the delivery of evidence-based exercise programmes, and issues around staff training which are discussed later in the report (*Summary of findings* page 57).

**Table 18: Q13 Were your exercises made more difficult for you as you improved, for example by increasing the number or changing the type of exercise or using ankle weights?**

Possible options	% (Number) of responses
Yes	44% (779)
No	29% (512)
Don't know	11% (194)
Response missing	16% (283)

Exercise programmes to reduce falls and the risk of falls need to be progressed in order to be effective. It is disappointing only 52% (779/1485) of patients responding to this question reported that their exercise programme had been progressed.

Patients were asked for comments about how they felt their exercises were made more difficult, 305 patients provided comments.

Patients described numerous ways that exercises were progressed consistent with established and effective exercise principals. These included:

- increasing the number of times exercises were performed (repetitions)
- using heavier weights
- increasing the resistance of exercise bands (increasing load)
- increasing the difficulty of exercises
- performing a greater number of exercises.
- increasing the intensity of exercises
- changing the speed of exercises (both faster and slower)
- from being performed seated to being performed standing
- decreasing hand support with exercises
- receiving less supervision from staff
- using additional equipment eg wobble board, gym balls or balance equipment
- increasing the distance walked
- climbing more stairs.

Those completing the staff questionnaire gave similar comprehensive examples of how strength and balance exercises were progressed (Q9a-b page 52).

There were also comments from patients related to how exercises and advice were tailored to individual need and progress. For example:

*'Each person works at their own level with advice from the instructor.'*

*'Not considered stable enough (for progression).'*

*'I tried all the exercises but some proved too difficult. Unfortunately some made my arthritis pains worse. The therapist was very helpful with suggestions as to which would be most helpful to continue with.'*

A minority of patients described adverse events in their responses. For example:

*'Ankle weights bruised my ankles.'*

*'I found the ankle weights made my knees painful.'*

**Question 14a-b. If you attended an exercise class (N=1430)****Table 19: Q14a How many times did you attend each week?**

Possible options	% (Number) of responses
Less than once a week	1% (15)
Once a week	73% (1037)
Twice a week	9% (124)
Three times a week	0.8% (12)
More than 3 times a week	0.3% (5)
Other	2% (23)
Don't know	0.1% (1)
Response missing	15% (213)

These responses show that 85% (1037/1217) of those participating in an exercise class attend once a week, with 12% (141/1217) attending more than once a week. 86% of those completing the staff questionnaire indicated patients attend a class based intervention once a week, with 6% attending more than once a week (Q7a page 50).

This reinforces the need for patients to be given a home exercise programme to complete in addition to attending a class, as delivery of an evidence-based exercise programme for reducing falls requires the programme to be completed *at least* three times a week.<sup>7-8</sup>

**Question 14a-b. If you attended an exercise class (n=1430)****Table 20: Q14b How many weeks did the course run for?**

Possible options	% (Number) of responses
4 to 6 weeks	15% (217)
8 weeks	15% (221)
10 weeks	11% (155)
12 weeks	22% (315)
More than 12 weeks	10% (146)
Don't know	2% (27)
The course is ongoing	8% (108)
Other	4% (61)
Response missing	13% (180)

Excluding the 'Don't Know' responses, the missing blank responses and those for who their course was still ongoing then 81% (908/1115) patients attended short duration exercise classes for 12 weeks or less.

Of the 126 patients who gave additional comments, 40 attended for between 3 and 6 months, 14 for between 6 and 9 months and 4 people between 9 and 12 months.

One participant described the health benefits of attending an ongoing class:

*'I go to the class every week and I have done this for more than 3 years. I know the exercises have helped me more than words can say. I have many mobility problems and bad balance swollen ankles and many problems but I now walk quite well I catch the local bus to the town 8 miles away and travel much more. Because I am doing so well I have introduced at least 5 people to the exercises with them asking their doctors - all still go, and have similar results. All of us over 70 years.'*

Those completing the staff questionnaire indicated that 56% of patients attend a class for 12 weeks or less and 23% attend for more than 12 weeks (Q7b page 50).

The large discrepancy between staff and patients answers to 'more than 12 weeks' maybe due to staff including the availability of follow-on classes which patients may have decided not to attend.

The evidence base for effective duration of exercise provision shows that:

- Improving strength, power, static balance and gait takes 8–12 weeks.
- Improving mood, depression, anxiety, and self esteem takes 12+ weeks.
- Improving dynamic balance and endurance takes 12–24 weeks.
- Improving bone strength (hip, spine, and wrist) takes 36+ weeks.
- Reducing number of falls takes 15–52 weeks.<sup>9,16</sup>

**Question 15a-d. If you were supervised at home: (N=338 who in response to Question 6 said they were supervised at home)**

**Table 21: Q15a How often were you visited?**

Possible options	% (Number) of responses
Twice a week	7% (23)
Once a week	33% (110)
Once every 2 week	16% (55)
Once every 4 weeks	10% (35)
Other	13% (44)
Response missing	21% (71)

There is a wide variation in the number of visits to those whose exercise programme was supervised at home. From the 63 patients who gave additional comments it is clear that the number of visits varied widely from as little as 'nil' and 'visited just once' to 'five times per week'. Some patients described the number and timing of visits as described in the original Otago home exercise programme protocol, for example:

*'Varied over a period of time – once a week initially, then every 2 weeks and then once every 4 weeks.'*

This is endorsed by those completing the staff questionnaire. When asked if patients were visited twice a week, once a week, once every 2 weeks or 'other', 62% said 'other'. There were 13 staff comments that the number of visits was determined by clinical need, and 5 comments that were made in line with the original Otago home exercise programme (Q8a page 51).

**Table 22: Q15b How many weeks did the course run for? (N=338)**

Possible options	% (Number) of responses
1 month	13% (44)
6 weeks	18% (61)
2 months	12% (40)
3 months	12% (41)
6 months	5% (18)
Don't know	6% (21)
Other	15% (52)
Response missing	18% (61)

Excluding the 'Don't Know' responses and the missing blank responses then these responses show that the home exercise programme was of short duration ie 12 weeks or less for 73% (186/256) of participants.

There were 12 additional comments indicating that the programme was ongoing. Other comments included:

*'Intermittently because of illness.'*

*'We made an appointment convenient to both of us every so often.'*

*'2 months prior to class course.'*

Those completing the staff questionnaire indicated that just under a half of patients were supervised at home for 3 months or less. Nearly a half said 'other' (Q8 page 51).

There were 22 staff comments indicating that the length of programme was not fixed, and depended on clinical need. For example:

*'Depends on patient's compliance, motivation, progression and ability to progress further.'*

*'Varies according to patient need but maximum 6 visits over 3 months.'*

*'3 months then review at 6 months and 1 year.'*

**Table 23: Q15c Were you contacted between visits to check progress or encouraged to contact between visits yourself if there was anything you needed to discuss? (N=338)**

Possible options	% (Number) of responses
Yes	49% (165)
No	29% (99)
Response missing	22% (74)

Excluding the missing blank responses then 63% (165/264) of patients were contacted between visits or encouraged to contact the instructor between visits themselves if there was a problem.

**Table 24: Q15d If yes (to Q15c, N=165) was this by (please tick all that apply)**

Possible options	% (Number) of responses
Phone	92% (151)
Email	0% (0)
Text	0% (0)
Letter	1% (2)
Phone & email	0.7% (1)
Phone & letter	3% (5)
Response missing	4% (6)

Telephone monitoring was the most common way patients were contacted between visits.

The Otago home exercise protocol which showed a reduction in falls, visited patients at weeks 1, 2, 4 and 8, 6 months and 1 year. After the 4<sup>th</sup> visit patients were encouraged to continue with the exercise programme on their own at least 3 times a week and to telephone the physiotherapist with any problems. They were also encouraged to walk outside the home at least 3 times a week. Participants were telephoned regularly to maintain motivation and asked to record whether they had completed the prescribed exercises or walked each day.

The answers to question 15a-c indicate that evidence-based practice for reducing falls through a home exercise programme was not implemented for the majority of patients (also see *Summary of findings* page 57).

Please note: Participating sites were asked to only distribute questionnaires to patients who had finished an exercise programme in the last 12 weeks, but 255 patients indicated that their programme had not finished. The following questions refer to what happened at the end of the course and the patient's overall experience of the programme, therefore the group of patients who indicated their programme was ongoing have been excluded from the analysis for questions 16–19.

**Table 25: Q16 At the end of your exercise programme what advice or information were you given about how to continue exercising? (N=1513) (please tick all that apply)**

Possible options	% (Number) of responses
Advice about joining another strength and balance follow-up class	24% (357)
Advice about general local exercise groups	22% (338)
Advice about carrying on exercising at home	68% (1022)
No information or advice given	7% (100)
Response missing	15% (226)

Over two-thirds of patients (79%, 1022/1287) were given advice about carrying on with their exercise programme at home, although it is recognised that it is more challenging to maintain motivation to exercise at home alone than in a class setting.

The importance of long term adherence to evidence-based exercises for reducing falls has already been stated. It is disappointing that only 28% (357/1287) of patients were given advice about joining an evidence-based follow-on strength and balance class, although this is likely to be at least in part due to lack of availability (see *Summary of findings* page 57).

**Table 26: Q17a Did you continue to exercise after the end of your exercise programme? (N=1513) (Could tick more than one response)**

Possible options	% (Number) of responses
Yes, I continued to exercise at home	74% (1126)
Yes, I continued to exercise in a class	7% (113)
Yes, I continued with or started another form of exercise	5% (80)
No I stopped exercising once my exercise programme finished	6% (90)
Response missing	14% (205)

It is encouraging that the majority of patients responding to this question reported they continued to exercise and only 7% (90/1308) of patients reported that they stopped exercising completely at the end of their programme.

**Table 27: Q17b If you continued to exercise are you still exercising now? (N=1220)**

Possible options	% (Number) of responses
Yes, I am still exercising	89% (1086)
No, I stopped exercising due to ill health	5% (66)
No, I stopped exercising for other reasons	4% (43)
Response missing	2% (25)

Again, it is encouraging that 91% (1086/1195) of patients who said they continued to exercise after their programme finished are still exercising now.

**Table 28: Q17c If you are still exercising, what exercises are you doing? (N=1086)**

Possible options	% (Number) of responses
I continued to do the same exercises at home, and am still doing so	75% (815)
I continued to exercise in a class, and am still exercising in a class	11% (115)
I continued to exercise at home, but made the exercises easier	15% (161)
I continued with another form of exercise	7% (78)
Response missing	3% (29)

Responses about what sort of exercises patients were doing included:

- Water based exercise.
- Dancing.
- Healthy hips and hearts.
- Housework and walking to shops.
- T'ai Chi.
- Private physio for neck problem.

88% (930/1057) of patients who said they continued to exercise after their programme finished said they were continuing with their home and/or a class based exercise programme. However, comments about the type of exercise patients continued with raise important questions about increasing long term compliance to evidence-based exercise programmes for reducing falls:

*'I have domestic chores can do some gardening and have selected appropriate exercises from those suggested - some and modify.'*

*'I continued to exercise at home on an ad hoc basis was not stringent doing the exercises but did what was easy.'*

*'I do some exercises from TV called chair aerobics.'*

*'I continue with my tennis elbow and pelvic muscle exercises rather than my falls exercises.'*

*'Just do 2 exercises, going up onto toes and turning head round as far as it will go. The other exercises I couldn't do as well, also frightened of falling at home due to my balance.'*

These responses, show that many of the exercises patients continue with are not evidence-based and will not reduce falls.

Patients were asked to provide additional comments about why they continued to exercise, stopped exercising or changed their exercises. Of the 775 comments received most related to the reasons for continuing to exercise. Key themes for continuing to exercise included patients:

- feeling exercises would be beneficial to their health eg to maintain and improve their balance, mobility, muscle strength, flexibility, levels of energy, fitness and confidence
- feeling exercise would help other health conditions such as Parkinson's disease and stroke
- being advised by health professionals to continue exercising
- fearing a deterioration in health if they stopped exercising
- finding exercises became habitual and enjoyable
- realising the social and motivational benefits of attending a group exercise class.

For example:

*'I think the exercises helped me move forward and develop my strength. It also helped very much to rebuild my confidence.'*

*'I continue to exercise because my walking is stronger and my morale is higher- not only because of the exercises but my being with other people in the same boat.'*

*'I continue to exercise because it helps me remain functional and independent. I hope to be able to continue attending this class for years to come, having seen how the exercises help those older than me.'*

*'I continued to exercise because I felt they were essential to progress and also had been instructed to do so. I had every confidence in the advice given.'*

Key themes for stopping exercise included patients:

- developing new health problems and/or having a deterioration of health eg deteriorating arthritis, knee surgery , episodes of the 'flu' and deteriorating eyesight
- lacking interest and motivation to continue exercising independently
- feeling no need to continue with exercise eg feeling that they had improved and 'returned to normal' or were performing adequate levels of alternative exercise
- having a lack of time and other commitments, experiencing difficulties with and cost of transport for attending group classes.

For example:

*'I stopped because I have a great deal of painful arthritis with sciatica. It's difficult to have enthusiasm.'*

*'I had to stop due to having a knee replacement, will be going back when I get the OK from the Consultant.'*

*'Think my fitness is satisfactory, or more so for my age.'*

*'The exercises programme gave me confidence so I didn't think I needed so much exercise.'*

*'I don't exercise enough because motivations is hard outside a class.'*

*'I think I am lazy. I really enjoyed going to class, but at home - you put off saying oh I do them tomorrow. I would like to go back to the class.'*

*'I stopped exercising because I was getting exercising walking, gardening, housework.'*

*'Did exercise at home for a time. Transport would prove to be too expensive to go to the class on a regular basis.'*

*'Because exercising in isolation is so boring.'*

*'Nobody to crack the whip!!'*

Some of the patient responses above highlight the need for the provision of more information about the benefits of continuing to exercise and the need for long term support to continue exercising, together with adequate local follow-up classes in the community.

Key themes for changing exercise included:

- a lack of available classes
- patient preferring an alternative exercise option.

For example:

*'I changed exercises because there was no other classes from the 'falls' available.'*

*'GP referral to gym instructor arranged a programme which suits me well.'*

The evidence base for exercise interventions for reducing falls shows that as soon as the specific exercises are discontinued, the person will revert to their pre-intervention risk of falls.<sup>9</sup> Responses from patients show that:

- The majority say they continue to exercise but many are not continuing with appropriate exercises for reducing falls.
- Patients find it harder to continue exercising at home than in a class.

Responses from staff show that in general patients are given appropriate advice about continuing an exercise programme, but this is often limited by a lack of long term follow-up classes in the community (Q11a-b page 54).

Therefore, an exercise continuum across health and other statutory and voluntary agencies needs to be developed at a local level to ensure that patients continue to progress and sustain any improvement made in their NHS run class.

**Table 29: Q18a Can you tell us about your overall experience of your exercise programme by ticking one statement that sums up your views? (N=1513)**

Possible options	% (Number) of responses
Beneficial to me	76% (1143)
Quite beneficial to me but could be better	8% (120)
Not beneficial to me	4% (53)
Blank	13% (197)

It is encouraging that (after excluding blank responses) 96% (1263/1316) of patients felt that the exercises were either beneficial or quite beneficial. Patients who answered 'not beneficial' or 'could be better' were asked to explain the reasons for their choice. However, a greater number (164) of patients provided additional comments at the end of this section. Most commented on their positive experience of their exercise programme.

The key themes for improving the patient's overall experience were:

- increasing the duration of both classes and home based programmes
- providing more intensive exercises
- addressing venue and locality problems
- increasing the availability of repeat 'refresher' courses
- having a greater focus on exercise rather than education/talks.

For example:

*'Course finished too soon. But was a boost to my confidence.'*

*'Needs continuity without long gaps between courses.'*

*'I would have wished for the exercises to be made more difficult for me at the last few sessions to test the manipulation of my left leg affected by the stroke.'*

*'Have trouble with steps and wish this had been included.'*

*'Not enough given to each exercise. Talks unnecessary instead of practising exercises.'*

**Table 30: Q19 Overall, how satisfied were you with your exercise programme? (N=1513)**

Possible options	% (Number) of responses
Very satisfied	64% (961)
Satisfied	28% (424)
No opinion either way	3% (38)
Unsatisfied	1% (21)
Very unsatisfied	0.7% (10)
Blank	4% (59)

Again, it is encouraging that over 90% of patients (95%, 1385/1453) were satisfied or very satisfied with their exercise programme.

People were asked for comments on what could help improve the exercise programmes, 515 comments were received. The overall key themes for improving the exercise programme were:

- the need for ongoing programmes
- increasing the duration of classes
- increasing the number of classes held each week
- providing more follow-up and refresher courses
- having earlier access to falls prevention programmes
- improving waiting times
- improving the availability of transport to exercise classes
- improving the publicity of programmes
- providing more spacious venues
- providing more equipment and weights at sessions
- tailoring exercises more to individuals (within classes)
- holding exercise groups in sheltered accommodation and residential homes
- providing advice and practical sessions on how to get up from the floor in the event of fall
- spending less time on education sessions.

Examples include:

*'I believe that 12 weeks is too short a period of instruction. Twenty weeks would lead to a greater improvement in confidence general well being and establish new habits and posture and flexibility. Patients need much more information about what this service actually does and the availability - more publicity please.'*

*'I do not want it to stop. I have no close relatives and I live alone. It is very important to me to keep fit and retain my independence.'*

*'I would like to have refresher course. The exercises also lifts depression. Instructor was very good.'*

*'I wish more old people could attend such a clinic without having to fall!'*

*'I feel frustrated about the delay between being referred to the Falls Clinic/exercise programme and being able to attend. A shorter waiting time might have reduced the risk of me falling/breaking my hip.'*

*'I would like to join another class but don't have transport.'*

*'Since problem is one's balance, then assuming one can get to a class by public transport is...shall I say...NOT SENSIBLE!'*

*'To be picked up and brought home was really important. I could not have participate otherwise. It was a lot of fun and really helped my movements. 8 weeks is not enough, a continued programme ...would be better.'*

*'The exercises could have been better tailored to me as I have trouble standing, bending knees and I get dizzy.'*

*'Posture training to deal with round shoulders and to be upright when walking. This could help.'*

*'Would like more strengthening exercises and tips - how to get up from the floor when fallen down.'*

*'I felt that some of the talks after the exercise sessions were a bit out of date e.g. bunions. Also I felt that they were a bit too long as I was very tired after the exercise and just wanted to go home and rest.'*

The vast majority of comments about the exercise programme were positive. For example:

*'I don't know how to express my gratitude for all the help they have given. They have been wonderful. They have restored my confidence.'*

*'I have never done anything like this before and I would not have tried it without the advice and encouragement I was given. I was nervous at first but I gained confidence and got to enjoy it. I slowly noticed the benefits and I looked forward to going each week.'*

*'The attitude of the staff helped win me over as I had no intention of going beyond the first session. However they convinced me that even at 82 it would be beneficial.'*

It is important that healthcare professionals harness this enthusiasm and ensure that exercise programmes they provide are evidence-based interventions for reducing falls and that patients are informed about how to continue exercising once their programme ends.

## Results of staff questionnaire

Of those 113 sites participating in the patient involvement survey the response to the staff questionnaire was 88% (100/113). The 100 sites participating in this staff survey had a mean 16, median 16 and IQR 9–22 patient responses in the patient involvement survey, which was similar to the 13 sites that did not participate in this staff survey that had a mean 13, median 12 and IQR 8–21 patient responses.

The results presented below are based on 100 completed staff questionnaires returned to the RCP.

**Table 31: Q1 Currently, what are the 3 main reasons for not offering an exercise intervention to a patient? (please rank 1, 2, 3 with 1 being the most frequent) (N=100)**

Possible responses	1	2	3	Total
Not applicable all patients are offered an exercise intervention	19	1	3	23
The patient's level of motivation	9	20	25	54
The patient's level of cognitive function	15	25	27	67
The patient is too unwell	47	18	6	71
There are no classes near to the patient	4	4	0	8
The patient is already doing a form of strength and balance exercise	3	8	5	16
Lack of resources (e.g. staff, venue funding)	5	2	4	11
Other	5	1	6	12

Note that 74 sites gave three reasons ordered as 1, 2 and 3. Nineteen sites just gave a single first choice, predominantly that all patients were offered an exercise intervention. Three sites selected three reasons but did not place these in order and these were all taken as joint first choices. Two sites selected more than three reasons but used joint ordering up to 3. Finally two sites selected only selected first and second reasons.

The two most common reasons for not offering patients an exercise programme are poor health and cognitive impairment.

Other responses included:

- Patient declines.
- Not suitable for our level of intervention.
- Funding recently reduced (unable to pay for transport/venues).

All the above issues are important in the delivery of evidence-based exercise programmes for reducing falls and are discussed again in the *Summary of findings* section (page 57).

**Table 32: Q2 Currently, what are the 3 main reasons for patients declining an exercise programme? (please rank 1, 2, 3 with 1 being the most frequent) (N=100)**

Possible responses	1	2	3	Total
Don't feel exercise will help/ is necessary	44	12	15	71
Don't want to leave home to attend a group	16	7	12	35
Don't want someone coming into their home for a home programme	0	2	8	10
No transport is provided	6	10	3	19
Other difficulties with transport	4	4	7	15
Other commitments	10	14	8	32
Feel they are too old to exercise	10	18	16	44
Do not have the energy to exercise	7	11	7	25
Feel that intermittent illness will make exercise difficult	10	14	13	37
Unwilling to pay to attend a class	1	2	3	6
Other	4	3	3	10

Note that 88 sites gave three reasons ordered as 1, 2 and 3. One site just gave a single first choice. Five sites selected three reasons but did not place them in order and these were taken as joint first choices. Four sites selected more than three reasons but used joint ordering up to 3. Finally two sites only selected first and second reasons.

The two most common reasons staff reported for patients declining an exercise programme are that they do not feel the exercise programme will help and that they feel too old to exercise. Patients not wanting to leave home to attend a group, and patients feeling that intermittent illness will make exercise difficult were the next most common reasons reported by staff.

Other responses included:

- Patient already participating in exercise.
- Lack of patient confidence.
- Lack of patient motivation.

These staff responses highlight the importance of addressing patient concerns regarding the effectiveness of therapeutic exercise. Staff perceptions that patients may feel too old to exercise demonstrate the need to effectively discuss with patients the evidence base for exercise interventions in reducing falls for older adults (80 years and over).

It also highlights the importance of adequate training for staff inviting patients to participate in therapeutic exercise, as different approaches may be required for patients with low confidence and motivation.

**Table 33: Q3a Currently, what is the waiting time for a home based exercise intervention? (Free text response)**

<b>Response categorised as:</b>	<b>Frequency</b>
N/A no home based intervention offered	14
0–1 week	9
1 week	3
1–2 week	3
2 weeks	11
2–3 weeks	6
3 weeks	1
3–4 weeks	1
4 weeks	5
5 weeks	2
4–6 weeks	2
6 weeks	4
6–8 weeks	4
8 weeks	3
12 weeks	3
>12 weeks*	1
Varies depending on locality (largest variation 1– 13 weeks, smallest variation 0– 5 weeks)	5
Varies depending on need/priority (eg 2 weeks for emergency referrals. 6– 8 weeks for non-emergency)	11

\*13 weeks

Note there were 9 other responses which were difficult to categorise eg ‘less than government guidelines’ or a waiting time covering a wide range such as 6–20 weeks or 4–8 weeks.

Of the 100 respondents, 14 reported they did not provide a home based exercise intervention. Wide variations in waiting times, from less than 1 week up to 13 weeks were reported. Some staff reported they selected patients for earlier participation than others by offering a priority referral system, for example:

*‘2-3 weeks if urgent, 6-10 weeks if routine.’*

Other staff commented that a home-based service was only offered to a minority of patients for example:

*‘Those who cannot leave their partner or those with continence problems.’*

**Table 34: Q3b Currently what is the waiting time for a group/class exercise intervention? (Free text response)**

<b>Response categorised as:</b>	<b>Frequency</b>
N/A no group/class based intervention offered	19
0–1 week	3
1 week	2
1–2 week	2
2 weeks	4
2–3 weeks	2
2–4 weeks	2
3 weeks	5
3– 4 weeks	2
4 weeks	6
6 weeks	4
6–8 weeks	4
8 weeks	8
10–12 weeks	1
12 weeks	4
>12 weeks*	2
Varies depending on when the next group starts	11
Varies depending on locality (largest variation 1–13 weeks, smallest variation 4–8 weeks)	5

\*13 weeks (1), 16 weeks (1)

Note there were 13 other responses which were difficult to categorise. The largest range in this category was 1 week to 6 months.

Only 81% of respondents provided a group exercise intervention within their organisation. As with home-based exercise services there is a wide variation in waiting times for group exercise interventions ranging from less than 1 week up to 6 months.

Forty-six staff provided additional comments around exercise provision and waiting times. Key themes included:

- Lack of funding and resources eg a lack of staff, delayed advertisement of staff vacancies, an inability to pay for venues and transport.
- Increasing demand for services.
- The effect of waiting times of other service providers and agencies eg patients waiting for nursing and GP assessment prior to participation or for an available place on patient transport services to attend.

These comments reflect a number of issues which impact on the provision of evidence-based exercises for reducing falls.

**Table 35: Q4a Which of the exercises illustrated do you routinely prescribe? (N=100 sites)**

Possible options	Number of responses
Calf (Heel raises)	99
Toe raises	97
Side hip strengthening	94
Front knee strengthening	94
Back knee strengthening	77
Knee bends	96
Toe walking	79
Heel toe standing	88
Heel toe walking	88
One leg stand	92
Sideways walking	95
Heel walking	73
Sit to stand	100
Backwards walking	78
Heel toe walking backwards	63
Walking and turning around (figure of 8)	67
Stair walking	65
Walking programme	60

These responses can be compared with those of the patient questionnaire together with reasons given for not prescribing any of the exercises (Q10 pages 28–30).

**Table 36: Q5a–b Use of ankle weights and/or exercise bands. (N=100)**

**5a. Are ankle weights used for patients where clinically indicated?**

Possible options	Number of responses
Blank	2
No, no patients	35
Yes, all patients	11
Yes, most patients	19
Yes, some patients	33

**5b. Are exercise bands used for all patients where clinically indicated?**

No, no patients	13
Yes, all patients	40
Yes, most patients	23
Yes, some patients	23

**5a/5b Either ankle weights or exercise bands used for**

Yes, all patients or Yes, most patients	74
--	----

These responses can be compared with those of the patient questionnaire together with reasons given for not prescribing ankle weights (Q11–12 pages 30–31).

**Table 37: Q6a Are your patients given a printed home exercise booklet? (N=100)**

	Number of responses
Yes	98

**Table 38: Q6b If yes (6a) does this include illustrations of the exercises? (N=98)**

	% (Number) of responses
Yes	100% (98)

These responses can be compared with the patient questionnaire together with further comments (Q7–8 page 26).

**Table 39: Q7a If you provide a class based intervention how many times a week do patients attend? (N=100)**

Possible responses	Number of responses
N/a no class based interventions	14
<b>If applicable (N=86)</b>	
Less than once a week	0
Once a week	86% (74)
Twice a week	6% (5)
Three times a week	0
More than 3 times a week	0
Other	8% (7)

These responses can be compared with those of the patient questionnaire together with further comments (Q14a page 33).

**Table 40: Q7b How many weeks do the courses run for? (N=100)**

Possible responses	% (Number) of responses
N/A no class based interventions	14
<b>If applicable (N=86)</b>	
4–6 weeks	10% (9)
8 weeks	19% (16)
10 weeks	10% (9)
12 weeks	16% (14)
More than 12 weeks	23% (20)
Rolling programme	3% (3)
Other	17% (15)

Staff providing services for more than 12 weeks were asked to specify duration. These included:

*'5 weeks education and exercise class prior to attending a 12 week postural stability class.'*

*'12 months.'*

*'Each patient receives an individual programme of exercise that lasts as long as they need to achieve their goals.'*

*'Programmes 12 weeks but possibility of attending 2nd group.'*

These responses can be compared with those of the patient questionnaire together with further comments (Q14b pages 33–34).

**Table 41: Q8a If you provide a home based exercise programme how often are patients visited? (N=100)**

Possible responses	Number of responses
Blank	1
N/A no home based interventions	19
<b>If applicable (N=80)</b>	
Twice a week	3% (2)
Once a week	29% (23)
Once every 2 weeks	6% (5)
Once every 4 weeks	0
Other	62% (50)

Fifty 'other' responses showed a wide variation in the structure of home-based programmes, some included the use of telephone monitoring. Staff descriptions of home-based services were markedly varied. For example:

*'Visits were conducted once a week for 6 weeks and then phone calls and visits for the remaining duration of the programme.'*

*'AS per OTAGO protocol 1, 2, 4 and 8 week visits.'*

*'Up to 5 visits.'*

*'Not visited at home. Reviewed in clinic (with home exercise prescribed).'*

These responses can be compared with those of the patient questionnaire together with further comments (Q15a page 34).

**Table 42: Q8b Over what period of time does the exercise instructor visit the patient at home? (N=100)**

Possible responses	Number of responses
Blank/don't know	2
N/A no home based interventions	22
<b>If applicable (N=76)</b>	
1 month	4% (3)
6 weeks	18% (14)
2 months	14% (12)
3 months	9% (7)
6 months	7% (5)
Other	46% (35)

'Other' responses included:

*'No more than 2 visits.'*

*'Variable according to patients needs.'*

*'1 year.'*

These responses can be compared with those of the patient questionnaire together with further comments (Q15b see page 35).

### **Question 9a How does your falls prevention service progress strength exercises?**

Ninety-eight respondents commented on how strength exercises were progressed:

Staff summarised exercise principals including rest, rate, recovery, repetitions and resistance. Some referred to FITT (frequency, intensity, time and type) principals also.

Predominantly respondents described increasing resistance through weights, exercise bands, gravity and positioning to progress strength exercises and increasing repetitions and sets of exercises.

Prescribing slower movements, longer 'holds' of exercises, reduced upper limb support and additional functional exercises were also described.

Some respondents described the staff member that was responsible for exercise progression eg *'as assessed by the physiotherapist'*. Only one respondent commented that they did not tend to progress exercises in the class.

### **Question 9b How does your falls prevention service progress balance exercises?**

Ninety-four staff commented on how balance exercises were progressed:

Staff largely described reducing hand support to progress balance exercises. For example, reducing from bilateral hand support to one hand support and then to no hand support.

Others described reducing the standing base of support for example semi-tandem stance, tandem stance and single leg stance.

Varying sensory input eg eyes closed, introducing uneven surfaces, obstacles, wobble boards and gym balls were described.

Introducing cognitive tasks (dual tasking) was a popular method to progress balance exercises.

Adding complex movements such as head turns and progressing static balance exercises to dynamic exercises were described.

Others described the use of structured balance progression exercises such as Tinetti balance exercises from level 1–5 and FaME and Otago programmes.

For example:

*'Increase repetitions, decrease support, introduce distractions (ie cognitive tasks e.g. times tables), harder exercises, very sensory input (ie eyes closed).'*

These responses together with further comments can be compared with those of the patient questionnaire (Q13 page 31–32).

**Table 43: Q10a What level of training do staff receive in order to teach exercise interventions (either home based or class based)? (Tick all that apply)**

Possible responses	Number of responses
PSI	54
Otago	41
Other recognised national exercise qualification	17
Chair based exercise training	24
In house training	63

When asked to name what other nationally recognised exercise qualifications staff teaching exercise interventions held the following responses were included:

- Exercise science degree.
- Physiotherapy degree.
- Occupational therapy degree.
- Physiotherapy technical instructor.
- NVQ.
- CYQ GP exercise on referral qualifications.
- Phase 1v cardiac rehabilitation qualification.
- Later Life Training exercise leaders award.
- OCN leading dance with older people level 3.
- Exercise to Music level 2.
- Extend.
- BACR (British Association of Cardiac Rehabilitation) training.

Whilst most of the above are nationally recognised exercise qualifications, only an additional exercise leaders award (at Otago and PSI level, not chair based) is a recognised qualification for delivering specific evidence-based exercise interventions for reducing falls in frailer older people.

When asked for further details on in-house training for those delivering exercise interventions for reducing falls, the following responses were included:

*'From physiotherapists who are PSI and Otago trained.'*

*'A physiotherapist always leads the class. Junior staff have some training from senior physio staff.'*

*'Bee active.'*

*'Competency based training for rehabilitation assistants provided by falls specialist physiotherapists or O.Ts; if identified within PDP, staff can do PSI or Otago training as indicated.'*

*'Falls study day, shadowing senior clinician.'*

*'In service training and observation.'*

*'Lectures on related illness.'*

*'Study days by specialist falls team. Tai chi training, outcome measure (use of standardised tools), Annual Falls Conference run by specialist falls team in conjunction with Elder Care Consultants.'*

Whilst most of the above are good examples of in house training those delivering the training must be experienced PSIs with evidence of continuing professional development in this specialist field.

**Table 44: Q11a Are any follow-on community exercise classes available in your area? (N=100)**

	Number of responses
Yes	86

86% of participating sites have some form of follow-on community exercise classes for older people who have fallen.

**11b At the end of the healthcare exercise intervention what advice is given to patients about the continuation of an exercise programme (either at home or at a community exercise class)?**

Comments from staff showed some examples of good practice but also highlight the wide variation in the provision of long term evidence-based exercise for reducing falls in the community.

Ninety-six staff provided comments. Key themes were:

- Advice given on local exercise groups including transport services. However, some staff highlighted that local exercise groups were limited and not always specific for falls prevention.
- External agencies and community follow-up group/lifestyle coordinators invited to introduce services in healthcare settings.
- Advice given on the importance of lifelong exercise and incorporating exercise into daily routines including involvement of family and carers.
- Advice given to continue home exercise programme and independent exercise progression.
- Further telephone monitoring and ongoing review.
- Written and DVD exercise materials given to patients.

**Table 45: 11c In general what types of follow-on classes are available for older people in the community? (tick all that apply) (N=100)**

Possible responses	Number of responses
PSI/FaME	39
OTAGO	21
Chair based	62
Exercise referral scheme	61
Tai Chi	53
General 50+ exercise class	73
Extend	27
Keep fit association	7
Other	20

Note: 4 sites left this section entirely blank

Chair based classes were reported by staff as more commonly available than PSI or Otago follow-on classes, making it difficult for many staff to recommend an evidence-based class of sufficient exercise intensity for some clients.

Only 39% of staff reported Postural Stability classes being available and only 21% reported that Otago classes were available. This has important implications for the long term prevention of falls in older people and will be discussed again later in the report (*Summary of findings* page 57).

In order to continue preventing falls, some of the more able patients attending a NHS run falls prevention exercise intervention may do well in a general 50+ type exercise class with an appropriately qualified instructor, but most will require a more specific evidence-based exercise programme.

**12a. If patients are encouraged to attend a follow-on community class, what type of class is suggested?**

Classes suggested other than those in question 11c included:

- Condition specific eg Parkinson’s disease class.
- Personalised gym programme.
- Walking programme.
- Gentle pilates.
- Circuit class.
- Aqua aerobics and swimming.
- Yoga .
- Tai Chi.
- 50+ exercise class.
- Weight reduction class.
- Tea dances.

There is a wide variety of availability, type and content of follow-on community classes. This is well illustrated in the table 46.

**Table 46: Q12a If patients are encouraged to attend a follow-on community exercise class what type of class is suggested? (N=100)**

Number of classes suggested	Number of responses
0	9
1	38
2	22
3	15
4	9
5	5
6	0
7	2

Just 9% of participating sites had no classes they could encourage patients to attend at the end of their health based exercise programme.

91% of sites had 1 one or more class(es) they could suggest, with 53% having two or more classes they could suggest and only 2% had seven.

**12b. What range of qualifications do the people leading community classes that you suggest in question 12a have? (Please indicate if this is not known).**

Qualifications other than those mentioned in question 10a included:

- Unknown.
- No specific qualifications for falls prevention classes.
- STARS competency.
- First aid.
- Physical activity co-ordinators.
- T'ai Chi trained instructor.
- Community activators.
- Trained by council based lifestyle team.

As before, unless these instructors also have an Otago or PSI qualification they are not nationally recognised qualifications for delivering evidence-based exercise interventions for reducing falls in older people, which is very specific .

Eighty-seven respondents answered this question, 33 of the respondents said that the qualifications of some or all of the people leading community classes that they suggest to patients to attend were unknown to them. This is concerning as they may not hold an exercise qualification specific to older people, and may therefore be including exercises that are at best ineffective in reducing falls and at worst increasing the risk of falls and fractures.

## Summary of findings

### Evidence base

The evidence base for exercise interventions for reducing falls indicates that the exercise provided must be of the correct:

- type (ie targeted resistance training and dynamic balance)
- frequency (ie minimum dose 50 hours, preferably at least three times each week)
- intensity (ie sufficiently challenging to the individual and progressive)
- duration (ie 15–52 weeks).<sup>7-8</sup>

There is wide national variation in the delivery of evidence-based exercise to reduce falls in terms of type, frequency, intensity and duration. Overall, the types of exercises prescribed appear appropriate however the frequency, intensity and duration of most programmes are low and do not appear to meet recommended guidance.

#### *a) Type of Exercise (targeted resistance training and dynamic balance)*

Included in this questionnaire were illustrations of the evidence-based Otago Exercise Programme.

Overall, patients record that both strength and balance exercises were prescribed. Likewise, staff reported prescribing most (between 60 and 100%) of the strength and balance exercises presented in the survey.

Both patients and staff reported that walking programmes and stair climbing were the least commonly prescribed component of exercise programmes. This may reflect findings that walking alone does not improve balance in older people.<sup>8</sup> However, a walking programme is included in the Otago programme and excluding this may reduce the effectiveness of the programme and limit patient access to the numerous other health benefits that walking may provide.

Staff reported the key reasons for not prescribing some of the Otago exercises presented related to patient risk and safety, individual tailoring of exercises and lack of staff training.

#### *b) Frequency (at least 3 times each week)*

Overall, the majority of patients who received advice to perform their exercise programmes reported performing these within the recommended guidance (at least 3 times per week).

Most staff (86%) reported low frequency of their exercise classes (once per week), well below recommended guidance. Similarly, the frequency of home visits reported by patients and staff was very low. However, most patients (89%) reported receiving home exercise booklets indicating that although contact with health professionals in group exercise classes and through home visits was low, additional independent home exercises could still be performed. It is important that staff re-inforce the importance of additional independent home exercise.

#### *c) Intensity (progressive and sufficiently challenging to the individual)*

Although only 52% of patients reported a progression of exercises, some patients were able to give detailed examples of how their programmes were progressed.

29% of patients completing the survey reported using ankle weights in their exercise programmes even though progressive resisted strength training is a key element of evidence-based exercise for reducing falls.

About three-quarters of staff reported using some form of resistance exercise training for all or most patients in their therapeutic exercise programmes. The key reasons that staff reported for not using ankle weights and exercise bands for progressive strengthening training was lack of funding for equipment, lack of staff training to use weights and concerns about patient health and safety including infection control issues relating to shared use of equipment.

#### *d) Duration (15–52 weeks)*

Most patients and staff reported short duration exercise programmes (less than 12 weeks) well below recommended guidance.

The evidence base for effective duration of exercise provision shows that:

- Improving strength, power, static balance and gait                      takes 8–12 weeks.
- Improving mood, depression, anxiety, and self esteem                takes 12+ weeks.
- Improving dynamic balance and endurance                                takes 12–24 weeks.
- Improving bone strength (hip, spine, and wrist)                         takes 36+ weeks.
- Reducing number of falls     takes 15–52 weeks.<sup>9,16</sup>

These responses from patients and staff indicate that in general, the NHS is not delivering completely evidence-based exercise interventions for the reduction of falls.

## **Other issues raised**

### *a) Population of fallers referred into healthcare.*

It is important to note that the original Otago home programme was first delivered to women aged 80 years and over living in the community and not undergoing rehabilitation.<sup>10</sup> The FaME group programme was delivered to women aged 65 years and over living in the community who had sustained >3 falls in the last year.<sup>9</sup>

Responses from the questionnaires would suggest that those referred into the NHS may be frailer than those participating in the studies above.

For some of these people, especially those unable to exercise in supported standing, a modified evidence-based exercise programme which is chair based but working towards reducing falls risk, rather than falls may be more appropriate. However, it is paramount that all patients are encouraged to progress according to their ability.

### *b) Patients need to be aware of the benefits of therapeutic exercise in falls prevention.*

Most patients reported they were referred to exercise programmes by health professionals and few indicated they referred themselves. Most reported they understood why they were referred and felt they had an opportunity to discuss the decision for referral. Most felt the timing of the referral was at an appropriate stage in their recovery.

The two most common reasons staff reported for patients declining an exercise programme were that patients don't feel exercise will help/is necessary and that patients feel too old to exercise. This highlights the importance of addressing patient concerns regarding the effectiveness of therapeutic exercise.

There is evidence that older people are more likely to take up exercise to prevent falls if they are educated in the wider benefits of exercise to maintain independence rather than in terms of preventing falls<sup>11</sup> Staff perceptions that patients may feel too old to exercise demonstrate the need to be able to effectively discuss with patients the evidence base for exercise interventions in reducing falls for older adults (80 years and over).

*c) Those delivering evidence-based exercise programmes for reducing falls should be appropriately trained.*

Question 10a of the staff questionnaire asked what level of training staff received in order to teach exercise interventions.

Whilst most of the qualifications included are nationally recognised, for example physiotherapy and occupational therapy professional qualifications and an exercise science degree, , only an additional exercise leaders award (at Otago and PSI level, **not** chair based) is recognised by the Register of Exercise Professionals and endorsed by The Chartered Society of Physiotherapy as a qualification for delivering specific evidence-based exercise interventions for reducing falls in older people.

Other less specific interventions may reduce the relative risk of falling rather than the number of falls.

Only 54% of sites have staff who have completed PSI Training and 41% of sites have staff who have completed Otago training.

The staff questionnaire asked whether patients were encouraged to attend a follow-on community class and what range of qualifications the people leading these classes had. As for Q10a above, there were a range of qualifications included. As before, unless these instructors also have an Otago or PSI qualification they are not nationally recognised qualifications for delivering evidence-based exercise interventions for reducing falls in older people. 40% of respondents answering this question said that the qualifications of some or all of the people leading community classes that they suggest patients attend was unknown to them. This is concerning as potentially these instructors do not have an exercise qualification specific to older people, and may therefore be including exercises that are at best ineffective in reducing falls and at worst increasing the risk of falls and fractures

These responses, together with those already discussed under delivery of evidence-based exercise programmes run by the NHS ,show the importance of monitoring the quality of exercise interventions that older people who have fallen or are at risk of falls are referred to both within health and the community.

*d) Funding priorities can be a barrier to delivering exercise programmes.*

Lack of funding and resources were given by staff as a reason for not offering an exercise intervention to a patient, in terms of the cost of staff, transport and venues.

Staff responses show a wide variation in waiting lists to start a class, from 1–14 weeks for a home based programme and between 1 week and 6 months for a class. Waiting lists were also commented on by patients.

Transport difficulties were reasons given by staff for patients declining an exercise programme.

Cost and availability were given as reasons for not using ankle weights and exercise bands together with lack of training for staff to be able to use them.

A lack of provision of long term exercise classes in the community is shown clearly in the staff questionnaire with staff commenting that the choice is often limited and not always specific.

Additional comments given by patients on how their exercise programme could be improved included requests for longer courses, follow-up visits and better transport to classes.

These comments show that funding priorities can also be a barrier to delivering evidence-based exercise programmes for reducing falls.

*e) There is a lack of long term follow-up classes for reducing falls in the community.*

The evidence base for exercise interventions for reducing falls shows that as soon as the specific exercises are discontinued, the person will revert to their pre-intervention risk of falls.<sup>10</sup>

However, while 91% of patients said they continued to exercise (either at home or in a class) once their exercise programme finished and were still exercising, additional comments made indicated that the majority are not continuing with evidence-based exercises for reducing falls.

Only 28% of patients said they were given advice about joining an evidence-based follow-on strength and balance class, although this is likely to be at least in part due to lack of availability.

Over 4/5 of patients say they are continuing with their home or class based exercise programme. However, comments from patients show that many are not continuing with an evidence-based programme for reducing falls.

Responses from the staff questionnaire show that in general patients are given appropriate advice about continuation of an exercise programme, but this is often limited by a lack of long term follow-up classes in the community to refer onto. For example, 9% of participating sites had no classes they could encourage patients to attend at the end of their NHS run exercise programme. 91% of sites had one or more class(es) they could suggest, with 53% having two or more classes they could suggest and only 2% had seven. These findings assume that staff have fully sourced available classes.

## Key messages

- Implementation of evidence-based exercise interventions by healthcare providers is incomplete and varies widely across participating sites.
- There is a lack of long term follow-up classes for reducing falls in the community.

## Recommendations

- Commissioners need to commission a local, integrated exercise continuum across health and local authorities/voluntary sector to ensure long term provision of evidence-based exercise programmes for reducing falls run by appropriately qualified staff.
- The quality of training and delivery of exercise programmes for reducing falls needs to be monitored locally and nationally against the evidence base for delivering effective exercise programmes to reduce falls.

## Next steps

If you are reading this report and are a chief executive we suggest you:

- review the provision of exercise programmes within your organisation to ensure they are evidence-based for reducing falls
- ensure staff delivering exercise programmes are appropriately trained in delivering specific evidence-based exercise interventions for reducing falls in older people
- ensure funding priorities do not act as barrier to delivering exercise programmes, eg adequate funding for staff and essential equipment such as ankle weights.

If you are reading this report and are a commissioner we suggest you:

- review the provision of exercise programmes you commission to ensure they are evidence-based exercise for reducing falls (this may include disinvestment in existing non evidence-based exercise)
- commission specific long term follow-up classes for reducing falls, moving towards joint commissioning in an exercise continuum across health and other local statutory and voluntary agencies (this may include disinvestment in existing non evidence-based exercise).

If you are reading this report and are a lead clinician we suggest you:

- review the provision of exercise programmes within your organisation to ensure they are evidence-based exercise for reducing falls
- ensure staff delivering exercise programmes are appropriately trained in delivering specific evidence-based exercise interventions for reducing falls in older people
- ensure staff routinely explain to patients the benefits of exercise and why they are being referred for an exercise programme
- ensure patients are given an opportunity to express any concerns they may have about being referred and/or taking part in an exercise programme.

## Appendix 1

### References

1. Royal College of Physicians. *Older people's experiences of falls prevention services*. London: RCP: 2010
2. Royal College of Physicians. *Falling standards, broken promises; Report of the national audit of falls and bone health in older people 2010*. London: RCP, 2011
3. Hospital Episode Statistics – Inpatient data, 2008–9. [www.hesonline.org.uk/Ease/servlet/ContentServer?siteID=1937&categoryID=192](http://www.hesonline.org.uk/Ease/servlet/ContentServer?siteID=1937&categoryID=192) [Accessed 8 March 2012]
4. Department of Health. *Prevention Package for Older People*. London: DH, 2009
5. Department of Health. *Falls and fractures – exercise training to prevent falls*. London: DH, 2009
6. National Institute for Health and Clinical Excellence. *Falls the assessment and prevention of falls in older people (CG21)*. London: NICE, 2004
7. Summary of the updated American Geriatrics Society/British Geriatric Society Clinical Practice Guideline for preventing falls in older people (2011) *JAGS* 59:148-157
8. Gillespie LD, Robertson MC, Gillespie WJ, Lamb SE, Gates S, Cumming RG, Rowe BH. Interventions for preventing falls in older people living in the community. *Cochrane Database of Systematic Reviews* 2009, Issue 2. Art.No.: CD007146. DOI: 10.1002/14651858.CD007146.pub2.
9. Skelton DA, Dinan S, Campbell M, Rutherford O. Tailored group exercise (Falls Management Exercise – FaME) reduces falls in community-dwelling older frequent fallers. *Age Ageing* 2005 34;6:636-639
10. Campbell AJ, Robertson MC, Gardner MM, Norton RN, Tilyard MW, Buchner DM. Randomised controlled trial of a general practice programme of home based exercise to prevent falls in elderly women. *BMJ* 1997;315:1065-1069.
11. Royal College of Physicians. *National audit of the organisation of services for falls and bone health in older people*. London: RCP, 2006
12. Royal College of Physicians. *National clinical audit of falls and bone health in older people*. London: RCP, 2007
13. Royal College of Physicians. *National audit of the organisation of services for falls and bone health in older people*. London: RCP, 2009
14. Sherrington C, Whitney j, Lord S, Herbert R and Close J Effective Exercise for the prevention of falls: A systematic review and meta-analysis. *JAGS* 2008 0002: 8614-8618)
15. Skelton DA. Effects of Physical activity of postural stability, *Age and ageing*. 2001; 30 (Suppl 4): 33-39
16. Robertson MC, Devlin N, Gardner MM, Campbell AJ. Effectiveness and economic evaluation of a nurse delivered home exercise programme to prevent falls. *BMJ* 2001;322:697-701

## Appendix 2

### Patient Involvement Project Group

Title	Forename	Surname	Job title or project role
Ms	Amy	Charters	Age UK and patient representative
Ms	Melody	Chawner	Clinical physiotherapy specialist (older people) and falls coordinator
Dr	Albert	Grimstone	Service user
Mr	Donald	Grimwood	Service user
Mr	Simon	Hanna	Clinical exercise specialist and Later Life Training tutor and assessor
Ms	Vicky	Johnston	Specialist physiotherapist and Later Life Training tutor
Ms	Rachel	King	Falls coordinator
Ms	Jackie	Riglin	Falls prevention coordinator and clinical associate
Ms	Georgina	Thompson	Service user
Ms	Naomi	Vasilakis	Project coordinator

## Appendix 3

### National Falls and Bone Health Audit Steering group

Title	Forename	Surname	Representing
Dr	Jonathan	Treml	Clinical Effectiveness and Evaluation Unit, Royal College of Physicians (Associate director and chair)
Dr	Kevin	Stewart	Clinical Effectiveness and Evaluation Unit, Royal College of Physicians (Director)
Ms	Janet	Husk	Clinical Effectiveness and Evaluation Unit, Royal College of Physicians (Programme manager)
Ms	Naomi	Vasilakis	Clinical Effectiveness and Evaluation Unit, Royal College of Physicians (Project coordinator)
Dr	Jay	Banerjee	College of Emergency Medicine
Dr	Timothy	Beringer	Northern Ireland
Dr	Hugh	Chadderton	British Geriatrics Society Nurse Consultants Special Interest Group
Mr	Kostakis	Christodoulou	Faculty of Public Health
Dr	Philip	Clissett	Royal College of Nursing
Dr	Gary	Cook	Faculty of Public Health
Dr	Graham	Davenport	General Practice
Dr	Frances	Healey	National Patient Safety Agency
Dr	Antony	Johansen	Wales
Ms	Rachel	King	AGILE, Clinical Interest Group of the Chartered Society of Physiotherapy
Ms	Zoe	Foan	British Association of Occupational Therapists and College of Occupational Therapists
Dr	Finbarr	Martin	British Geriatrics Society
Ms	Catherina	Nolan	College of Occupational Therapy Specialist Section Older People
Dr	Margit	Physant	Age UK
Dr	Susan	Poulton	British Geriatrics Society
Ms	Jackie	Riglin	Community Provider Services
Dr	Nick	Sorby	Royal College of Psychiatrists
Ms	Debbie	Stone	Wales, nursing and osteoporosis
Ms	Gail	Tucker	Social Services
Dr	Robert	Wakeman	Orthopaedics
Dr	Jane	Youde	British Geriatrics Society
Ms	Sarah	Zareian	Royal Pharmaceutical Society of Great Britain

## Appendix 4

### Patient invitation letter

For printing on local NHS trust headed paper

Dear <Insert patient name>

**Re: Older people's experiences of exercise programmes as part of a falls prevention service.**

We would like to invite you to take part in a national patient involvement project which aims to improve the availability and quality of falls prevention exercise classes, helping older people to stay independent. Your views are very important because you have recently taken part in a falls prevention exercise class.

Falls and fractures (broken bones) are a common and serious problem affecting older people. For example, people in England aged 65 and over spend 4 million days in hospital each year as the result of falls and fractures.

Falls and fractures can also lead to loss of confidence and increased difficulty carrying out day to day activities both indoors and outdoors. This may result in increased dependency on families, carers and services and reduce quality of life.

Research has shown that the most effective way to improve balance and unsteadiness as people get older is to participate in specific strength and balance exercises.

We are therefore inviting people who have fallen or lost their balance to complete a questionnaire about their experiences of exercise programmes as part of their local falls prevention service. This will help to inform the future provision of exercise programmes available following a fall. We are very interested in hearing about your experiences and getting your feedback.

The project is being run jointly by <Add your trust name or service here> and the Royal College of Physicians (London). It has been funded by the Healthcare Quality Improvement Partnership (HQIP), which is a government funded body whose role is to commission projects to assess the quality of services provided by the National Health Service (NHS).

Please be assured that feed back will be entirely anonymous, to encourage people to be entirely open about the care they have received.

Please read through the attached information and if you wish to take part complete the enclosed questionnaire and return it in the pre paid envelope to the Royal College of Physicians.

If you need more information about the project please contact <Add your lead name and contact number here > or the project co-ordinator at the Royal College of Physicians on 020 3075 1266.

If you do not wish to take part, you do not need to do anything and we will not contact you again. It will not affect your treatment if you decide not to take part.

We hope that you will take part in this project and complete the enclosed questionnaire.

Yours sincerely,

## Appendix 5

### Participant information sheet

---

On behalf of the Royal College of Physicians we would like to invite you to take part in completing a questionnaire. Before you make a decision to take part, it is important that you understand why the project is being carried out, by whom and what your participation will involve. Please take time to read the following information carefully and discuss it with others (family, friends) if you wish before making a decision. If anything is not clear, or if you would like more information, we would be happy to discuss this with you. Please contact a member of the project team on 020 3075 1266.

#### **Purpose of the project**

The purpose of the project is to find out what types of exercise programmes are offered to patients who have attended falls prevention services following a fall or loss of balance. We are very interested in hearing about your experiences and getting your feedback.

#### **1. Why have I been chosen?**

Your views and recent first-hand experience of an exercise programme as part of your local falls prevention service will help to develop services and information for patients. To get balanced feedback, we need to obtain the comments and opinions of a cross section of people who have used falls prevention services.

#### **2. Do I have to take part?**

Absolutely not! Your involvement is entirely voluntary and you may withdraw at any time. We would like to assure you that the standard of care you receive will not be affected at any time if you participate or choose to withdraw.

#### **3. What happens next if I agree to take part?**

If you decide to take part in the project, you should read and keep this information sheet before completing the questionnaire. Once completed, the questionnaire should be posted to us in the pre-paid envelope.

Each questionnaire has a site code which shows us which service it was sent or given out from, but you will not be identified as no personal information is asked for in the questionnaire.

#### **4. What will happen to the results of the project?**

We will produce a report on the overall findings, which will be sent to each service taking part in order to help them improve their service. We will also present the results at future meetings and conferences attended by doctors, nurses, physiotherapists, occupational therapists, exercise instructors to help with the development of falls prevention exercise programmes in other areas.

#### **5. Who has approved the project?**

The project has been approved by the Healthcare Quality Improvement Partnership (HQIP) which is a government funded body whose role is to ensure the quality of services provided by the NHS.

#### **6. Contact for further information**

The project lead within your hospital will give you his/her name and their contact number when he/she sends you the invitation letter about the questionnaire. If you would like any further information about this project please contact Naomi Vasilakis, the project co-ordinator on 020 3075 1266 or email [naomi.vasilakis@rcplondon.ac.uk](mailto:naomi.vasilakis@rcplondon.ac.uk).

## Appendix 6

### Staff information sheet

---

#### Older people's experiences of exercise programmes as part of a falls prevention service

##### Project background

This project aims to explore patient's experiences of participating in exercise programmes as part of their local falls prevention service. This work builds upon the programme of falls and bone health in older people audits currently being conducted by the Clinical Effectiveness and Evaluation Unit (CEEU) of the Royal College of Physicians (RCP), London. The first phase of the national audit undertaken in 2005 focused on the **organisation** of the services, based on the NSFOP standards and NICE Guidelines on Falls and on Osteoporosis and was repeated in 2008. The second phase, the national **clinical** audit in 2007, captured the details of service provision at the individual patient level. In 2010 a combined organisational and clinical audit was carried out. The 2007 and 2010 data included information on specific patient related activities, but did not capture patient's views of these services. Ascertaining the experiences of service users requires a patient centred enquiry into the process of assessment, information provision and to treatment planning which can then be used to inform future provision of services.

##### Methodology

A project steering group has been established, comprising of individuals who are working in the field of evidence based exercise for reducing risk of falls together with three patient representatives, and linking the National Falls and Bone Health Steering Group.

In order to obtain patients' experiences of participating in exercise programmes as part of a falls prevention service, questionnaires will be sent or given out by appropriate healthcare professionals to people who have recently completed an exercise programme. Data from these questionnaires will be analysed by the CEEU and a generic report will be available for providers and the wider falls and bone health community later this year.

We have contacted your Chief Executive to make them aware of this national patient / public involvement audit project. We have also given you a letter to pass onto your Clinical Audit / Clinical Governance Department to ensure that the project follows appropriate information governance requirements for your Trust.

The National Information Governance Board (NIGB) has been contacted and the process of individual Trusts identifying their patients, sending or giving out questionnaires with the project information is acceptable. Patients consent to take part by completing and returning the questionnaire. Due to ethical constraints, the Royal College of Physicians can not recruit patients directly as this has to be performed by **a member of NHS staff involved in patient care or organisation of care**. However, once patients have been identified and have been given or sent the questionnaire the analysis and reporting will be undertaken by RCP project staff.

Potential participants must be approached by an individual (identified locally) involved in the day to day provision of exercise programmes as part of a falls prevention service (eg physiotherapist, exercise instructor.) Questionnaires should be sent or given out to people who have recently completed such as an exercise programme locally. Patients who have been discharged more than 12 weeks should not be sent questionnaires because they might not be able to recall the details of their exercise programme.

The patient questionnaire does not take long to complete. The majority of answers are tick boxes but we do ask for comments.

### **What happens next?**

#### **Once you or your trust has signed up**

- You will identify up to **40 patients** (recent users of falls services).
- A member of the RCP project **staff will** email you the template invite letter.
- A member of the RCP project staff will **send you in the post** 40 questionnaires with your site code in the footer, 40 patient information sheets and 40 pre-paid reply envelopes.
- We (the RCP project staff) will update you on the progress.
- You will need to identify who will send or hand out the invite letters along with the questionnaire, patient information sheet and the reply envelope.
- You will need to print the invite letters on your headed paper to send or give to patients along with the questionnaire, patient information sheet and the reply envelope.
- If you are requested by RCP project staff to identify more patients please do not photocopy the questionnaires because we would like to log how many are sent out to get an accurate picture of response rates.
- An appropriate person in your Trust will need to complete a short second questionnaire for staff providing exercise programmes as part of the local falls prevention service and return to the Royal College of Physicians.

### **The participants**

Questionnaires will be sent or given out by an appropriate person within the Trust to people that have recently completed an exercise programme for reducing falls risk . Participants need to be able to complete the questionnaire. It can be completed by a carer or a family member but it should be the patient's views that are expressed in the replies. The potential participants will be invited by letter from the local service provider (you) and given an information sheet and the questionnaires providing more detail about the project and a pre paid return envelope. Any questions regarding the project should be answered by the member of staff in charge of recruitment or a member of the project team (contact details provided on the information sheet).

### **Safety and Confidentiality**

Data collected will be anonymised and participants can withdraw their participation at any stage of the project with no consequence to them or their care.

### **Reports and outputs**

The questionnaire material will be reported to participating Trusts and nationally. Chief executives and Clinical Audit/Governance Managers will receive a summary.

Results will be disseminated through meetings/presentations, the CEEu website, publications and the networks available to the steering group.

**Any further questions:** Project Co-ordinator: Naomi Vasilakis, Tel: 020 3075 1266 Email: [naomi.vasilakis@rcplondon.ac.uk](mailto:naomi.vasilakis@rcplondon.ac.uk)

## Appendix 7

### Patient questionnaire

---

Please return by 18<sup>th</sup> November 2011.

#### Older people's experiences of exercise programmes as part of a falls prevention service

This questionnaire does not take long to complete. For most of the questions you just need to tick the box. Please take your time to read the questions and reply to each question by ticking a box in the column on the left, or by writing your comments. There are no right or wrong answers.

Please do not worry if you cannot remember. Just tick the box which says "don't know" next to that question. This is important so that we know that you have not missed the question accidentally.

If the questionnaire is difficult to read, someone else can read it for you and write your answers in for you **but it is your views that are important to us.**

Your participation is voluntary and your answers will be treated in confidence. The staff who provide your local Falls Prevention Service won't see your individual answers.

#### 1a. Do you know who referred you for an exercise programme?

- Yes – go to question 1b
- No – go to question 2
- Don't know – go to question 2

#### 1b. Who referred you for an exercise programme? (tick one or more boxes)

- GP
- Hospital doctor
- Physiotherapist
- Occupational therapist
- Nurse
- Exercise instructor
- Family
- You, your self
- Other, please write here if known.....
- Don't know

**2. Did someone explain why you were referred for an exercise programme?**

- Yes
- No
- Don't know

Please add any comments you would like to make in the space below:

**3a. Did you feel you had the opportunity to discuss the decision to be referred for an exercise programme?**

- Yes
- No
- Don't know

**3b. Did you have the opportunity to raise any concerns about taking part in an exercise programme?**

- Yes
- No
- Don't know

Please add any comments you would like to make in the space below:

**4a. Do you feel that your exercise programme was appropriately timed to help your recovery, or was it too soon or too late?**

- Too soon
- About right
- Too late
- Don't know

**4b. If you felt your exercise programme may have been too soon or too late then please suggest why in the space below:**

**5. Where was your exercise programme held? (please tick all that apply)**

- In a hospital
- GP practice
- Community venue eg church hall, sheltered housing, day centre
- Leisure centre/gym
- Own home
- Other (please specify) .....

**6. If you participated in a class, were you also given exercises to do at home in addition to the class?**

- Yes
- No
- Not appropriate: I was supervised at home

**7. Were you given a printed booklet with the exercises in, to remind you what to do at home?**

- Yes
- No
- Don't know

Please add any comments you would like to make in the space below:

**8. If yes, did this include illustrations of the exercises?**

- Yes
- No
- Don't know

Please add any comments you would like to make in the space:

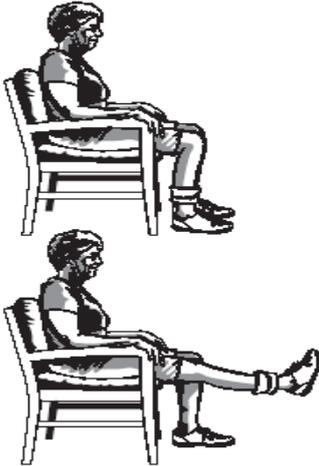
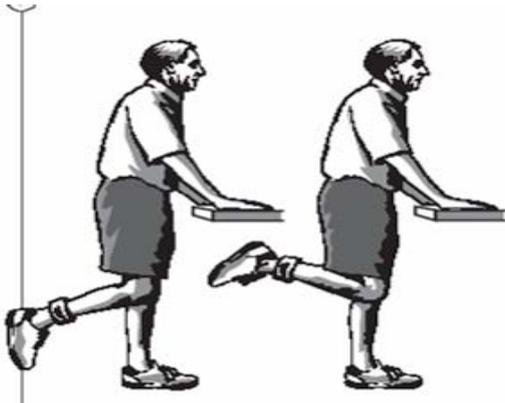
**9a. Did you receive any guidance about how often you should do the exercises?**

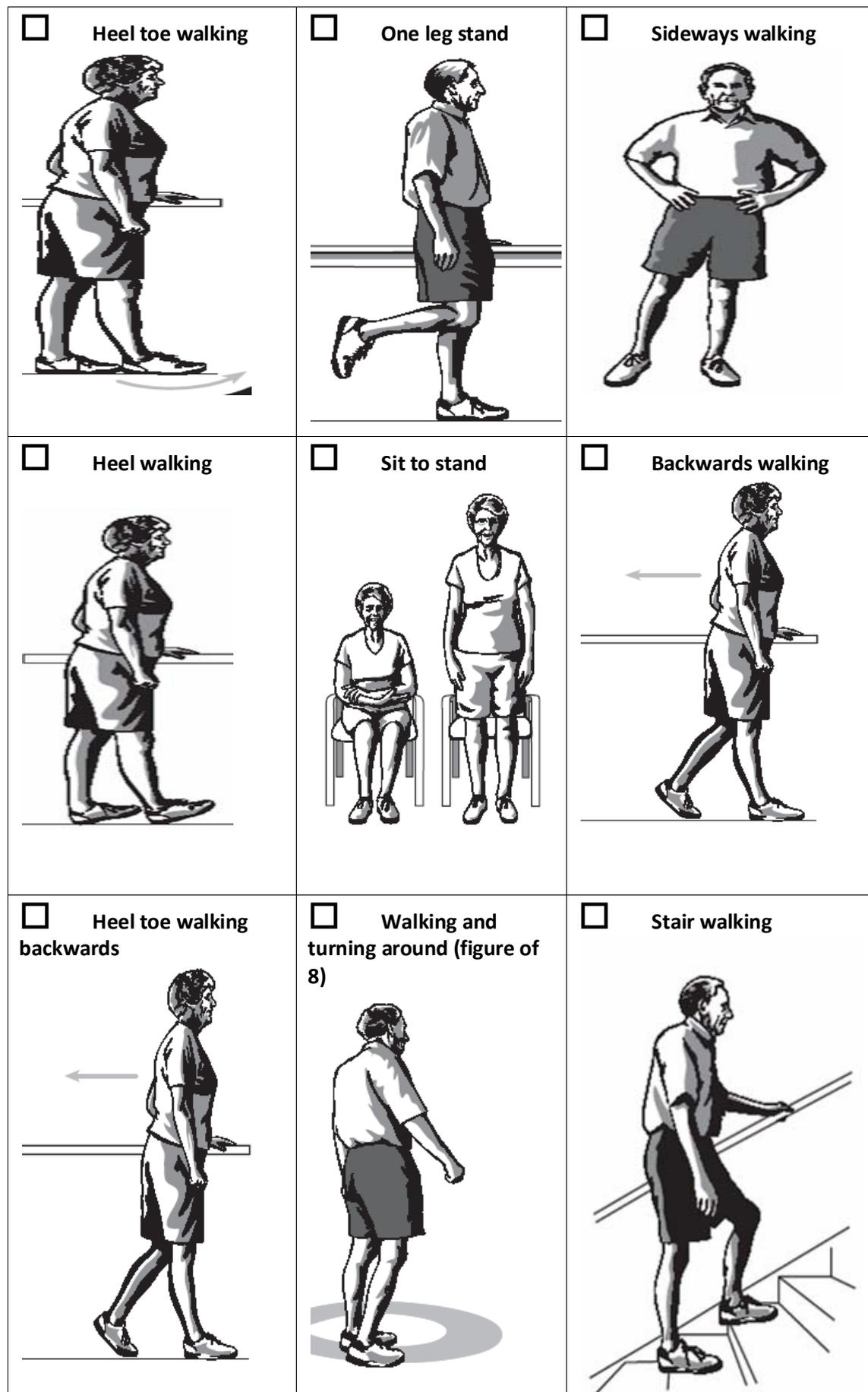
- Yes
- No
- Don't know

**If yes, was this:**

- Every day
- 4-6 days a week
- 2-3 days a week
- Once a week
- Less often
- Other –please give details .....

10. Which of the following were you advised to do as part of your exercise programme? (please either tick (✓) to mean YES or cross (X) to mean NO)

<input type="checkbox"/> Calf (Heel raises) 	<input type="checkbox"/> Toe raises 	<input type="checkbox"/> Side hip strengthening 
<input type="checkbox"/> Front knee strengthening 	<input type="checkbox"/> Back knee strengthening 	
<input type="checkbox"/> Knee bends 	<input type="checkbox"/> Toe walking 	<input type="checkbox"/> Heel toe standing 





### Walking programme



**11. Which of the following did you use with your exercise programme?**



Ankle weights



An exercise band



Both ankle weights and an exercise band



I did not use ankle weights or exercise bands (go to Q13)



Don't know (go to Q13)

**12. If you used ankle weights and/or exercise bands, were either of these available to use:**



As part of a class



In a class and at home



At home only with the exercise instructor present



At home with or without the exercise instructor present

**13. Were your exercises made more difficult for you as you improved, for example by increasing the number or changing the type of exercise or using ankle weights?**



Yes



No



Don't know

Please add any comments about how the exercises were made more difficult in the space below:

If you did not attend an exercise class, but were supervised at home please go to question 15.

14. If you attended an exercise class:

a) How many times did you attend each week?

- Less than once a week
- Once a week
- Twice a week
- Three times a week
- More than 3 times a week
- Other - please specify .....
- Don't know

b) How many weeks did the course run for?

- 4 to 6 weeks
- 8 weeks
- 10 weeks
- 12 weeks
- More than 12 weeks – please specify .....
- Don't know
- The course is ongoing
- Other – please specify.....

If you were not supervised at home but did attend an exercise class please go to question 16.

15. If you were supervised at home:

a) How often were you visited?

- Twice a week
- Once a week
- Once every 2 weeks
- Once every 4 weeks
- Other, please specify.....

b) Over what period of time did the exercise instructor visit you at home?

- 1 month
- 6 weeks
- 2 months
- 3 months
- 6 months
- Don't know
- Other - please specify.....

c) Were you contacted between visits to check progress or encouraged to contact between visits yourself if there was anything you needed to discuss?

- Yes
- No

d) If yes was this by (please tick all that apply):

- Phone
- Email
- Text
- Letter

**16. At the end of your exercise programme what advice or information were you given about how to continue exercising? (please tick all that apply)**

- Advice about joining another strength and balance follow up class
- Advice about general local exercise groups
- Advice about carrying on exercising at home
- No information or advice given about any of the above.

**17a. Did you continue to exercise after the end of your exercise programme**

- Yes, I continued to exercise at home
- Yes, I continued to exercise in a class
- Yes, I continued with or started another form of exercise (please specify)  
.....
- No, I stopped exercising once my exercise programme finished – go to question 17d

**17b. If you continued to exercise are you still exercising now?**

- Yes, I am still exercising
- No, I stopped exercising due to ill health –go to question 18a
- No, I stopped exercising for other reasons – go to question 17d

**17c. If you are still exercising now what exercises are you doing**

- I continued to do the same exercises at home, and am still doing so
- I continued to exercise in a class, and am still exercising in a class
- I continued to exercise at home, but made the exercises easier
- I continued with another form of exercise (please specify)  
.....

**17d. Please add comments below about why you continued to exercise, stopped exercising or changed your exercises:**

**18a. Can you tell us about your overall experience of your exercise programme by ticking one statement that sums up your views?**

- Beneficial to me (go to question 19)
- Quite beneficial to me but could be better (go to question 18b)
- Not beneficial to me (go to question 18b)

**18b. If you answered not beneficial or could be better to question 18a, please can you explain why?**

**19. Overall, how satisfied were you with your exercise programme?**

- Very satisfied
- Satisfied
- Unsatisfied
- Very unsatisfied
- No opinion either way

**20. Do you have any other comments that could help improve your exercise programme?**

**This section is about you**

**Are you?**

- Female
- Male

**How old are you: .....**

**Thank you for your participation in this survey. It is really appreciated.**

Please check that you have completed all the questions and then please put your questionnaire in the envelope provided and post it to us. No stamp is required.

If for any reason your envelope has been mislaid please send your questionnaire back to us at the following address:

Freepost (57), CEEU, The Royal College of Physicians of London, 11 St Andrews Place, Regent's Park, London, NW1 4LE

## Appendix 8

### Staff questionnaire

---

Organisation name: .....

Site code (can be found on the first page of the patient questionnaire):.....

Contact email address:.....

#### Section 1: Health based exercise programmes

**1. Currently, what are the 3 main reasons for not offering an exercise intervention to a patient? (please rank 1, 2, 3 with 1 being the most frequent)**

- Not applicable all patients are offered an exercise intervention
- The patient's level of motivation
- The patient's level of cognitive function
- The patient is too unwell
- There are no classes near to the patient
- The patient is already doing a form of strength and balance exercise
- Lack of resources (e.g. staff, venue funding) please specify .....
- Other please specify.....

**2. Currently, what are the 3 main reasons for patients declining an exercise programme? (Please rank 1, 2 3 with 1 being the most frequent)**

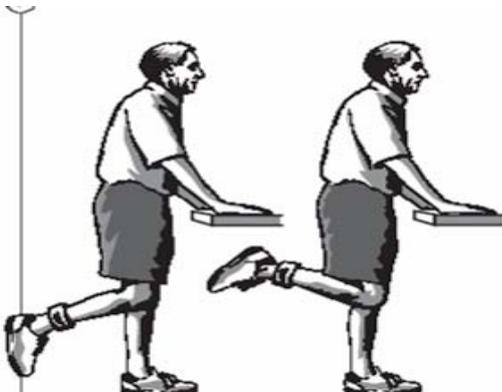
- Don't feel exercise will help/ is necessary
- Don't want to leave home to attend a group
- Don't want someone coming into their home for a home programme
- No transport is provided
- Other difficulties with transport please specify .....
- Other commitments
- Feel they are too old to exercise
- Do not have the energy to exercise
- Feel that intermittent illness will make exercise difficult
- Unwilling to pay to attend a class
- Other please specify .....

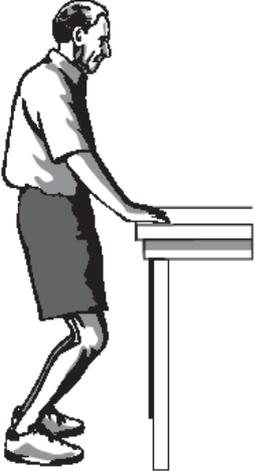
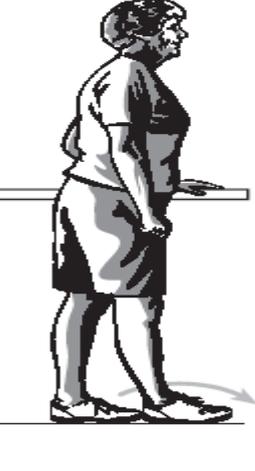
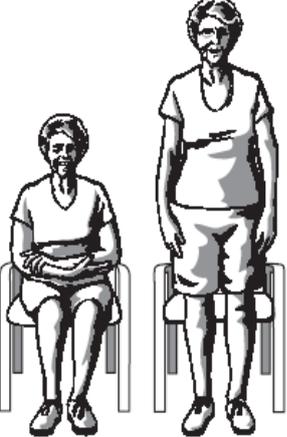
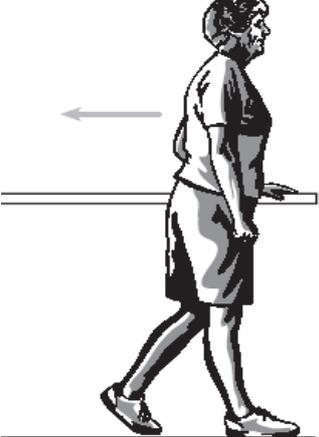
3a. Currently what is the waiting time for a home based exercise intervention? (please indicate below if your organisation does not provide home based programmes)

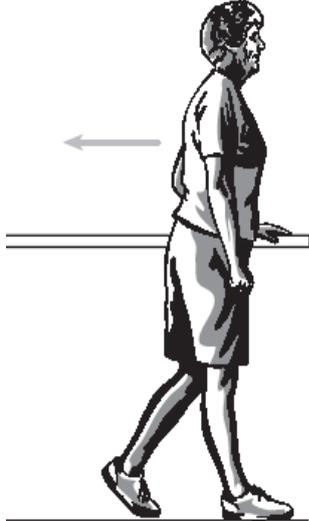
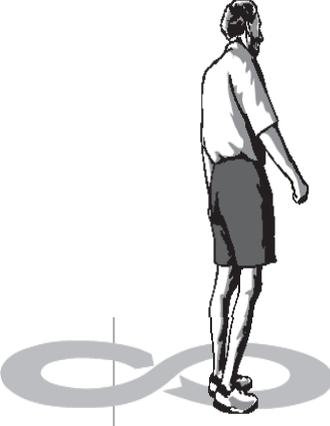
3b. Currently what is the waiting time for going a group/class based exercise intervention? (please indicate below if your organisation does not provide class based programmes)

3c. Please add any comments you would like to make in the space below:

4a. Which of the exercises illustrated do you routinely prescribe? (please tick **✓** to mean YES or cross **X** to mean NO, as appropriate)

<input type="checkbox"/> Calf (Heel raises) 	<input type="checkbox"/> Toe raises 	<input type="checkbox"/> Side hip strengthening 
<input type="checkbox"/> Front knee strengthening 	<input type="checkbox"/> Back knee strengthening 	

<input type="checkbox"/> <b>Knee bends</b> 	<input type="checkbox"/> <b>Toe walking</b> 	<input type="checkbox"/> <b>Heel toe standing</b> 
<input type="checkbox"/> <b>Heel toe walking</b> 	<input type="checkbox"/> <b>One leg stand</b> 	<input type="checkbox"/> <b>Sideways walking</b> 
<input type="checkbox"/> <b>Heel walking</b> 	<input type="checkbox"/> <b>Sit to stand</b> 	<input type="checkbox"/> <b>Backwards walking</b> 

<input type="checkbox"/> <b>Heel toe walking backwards</b> 	<input type="checkbox"/> <b>Walking and turning around (figure of 8)</b> 	<input type="checkbox"/> <b>Stair walking</b> 
<input type="checkbox"/> <b>Walking programme</b> 		

**4b. What are the reasons for not prescribing any of the exercises illustrated?**

**5a. Are ankle weights used for patients where clinically indicated?**

- Yes, all patients
- Yes, most patients
- Yes, some patients
- No, no patients

**If no, please indicate the reasons for this**

**5b. Are exercise bands used for all patients where clinically indicated?**

- Yes, all patients
- Yes, most patients
- Yes, some patients
- No, no patients

**If no, please indicate the reasons for this**

**6a. Are your patients given a printed home exercise booklet?**

- Yes
- No

**If no, please indicate the reason for this**

**6b. If yes, does this include illustrations of the exercises?**

- Yes
- No

**If no, please indicate the reason for this**

**7a. If you provide a class based intervention how many times a week do patients attend?**

- Less than once a week
- Once a week
- Twice a week
- Three times a week
- More than 3 times a week
- Other, please specify.....
- N/A no class based interventions

**7b. How many weeks do the courses run for?**

- 4 to 6 weeks
- 8 weeks
- 10 weeks
- 12 weeks
- More than 12 weeks – please specify .....
- Rolling programme
- N/A no class based interventions

**8a. If you provide a home based exercise programme how often are patients visited?**

- Twice a week
- Once a week
- Once every 2 weeks
- Once every 4 weeks
- Other, please specify.....
- N/A no home based interventions

**8b. Over what period of time does the exercise instructor visit the patient at home?**

- 1 month
- 6 weeks
- 2 months
- 3 months
- 6 months
- Don't know
- Other - please specify.....
- N/A no home based interventions

**9a. How does your falls prevention service progress *strength* exercises?**

**9b. How does your falls prevention service progress *balance* exercises?**

**10a. What level of training do staff receive in order to teach exercise interventions (either home based or class based)? (Tick all that apply)**

- PSI
- Otago
- Other recognised national exercise qualifications, please specify .....
- Chair based exercise training
- In house training, please specify .....

**Section 2: Follow on community based exercise classes**

**11a. Are any follow on community exercises classes available in your area?**

- Yes
- No

**11b. At the end of the healthcare exercise intervention what advice is given to patients about the continuation of an exercise programme (either at home or at a community exercise class)?**

**11c. In general what types of follow on classes are available for older people in the community? (tick all that apply)**

- PSI/FAME
- Otago
- Chair based
- Exercise referral scheme
- Tai Chi
- General 50+ exercise classes
- Extend
- Keep fit association

Other, please specify

.....  
**12a. If patients are encouraged to attend a follow on community exercise class what type of class is suggested?**

Class suggested	Content of the class

**12b. What range of qualifications do the people leading community classes that you suggest (in 12a) have? (please indicate if this is not known)**

Once completed please return to: Naomi Vasilakis

Post: Clinical standards department, Royal College of Physicians, 11 St Andrews Place, Regent’s Park, London, NW1 4LE  
 Fax: +44 (0)20 7487 3988  
 Email: fbhop@rcplondon.ac.uk