



ProFouND: Prevention of Falls Network for Dissemination

DELIVERABLE D6.4

D6.4 Report on changes in participating centres and regions

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1. Introduction and Overview

ProFouND proposed to bring about change across Europe by influencing policy and practice, so as to improve the uptake of evidence-based falls prevention interventions and change knowledge and attitudes towards falls and their prevention whilst using novel ICT solutions.

As part of the work of ProFouND the Description of Work (DoW) proposes setting up monitoring systems to identify whether there is change in falls incidence and in service provision. This document reports on changes reported as a result of the ProFouND project.

DoW Deliverables

D6.4 Report on changes in participating centres and regions

For this work package we said we would report two types of data.

- 1) Falls data from existing datasets across Europe.
- 2) Examine process and outcome data from ProFouND by developing specific data collection tools.

1.1 Falls data from existing datasets across Europe.

As part of Task 6.1 partners were asked to identify local data, which are routinely collected and easily accessible. We then used online survey and consensus techniques to generate a consensus on what is available in our partner regions. Thus the consensus process takes into account practical considerations on top of scientific ones (see deliverable D6.3). Our aim was also, if possible to collect data on service provision, costs, and quality of life parameters from existing routine data held in participating regions/countries. However, usable data in these domains are meagre or non-existent and we have not been able to pursue these meaningfully without specialist prospective data collection, which is not resourced within ProFouND.

In order to identify data the link to an online questionnaire was circulated to all partners and participating centres requesting information on existing data bases in each country and region. Based on this we defined the core dataset. This enabled us to finalise the methods of data collection and to try and merge routine and administrative data bases in participating centres. However, the available data are sparse, and the variables routinely collected in most partner regions are restricted in number (see D6.3 and factsheet developed by EuroSafe in appendix 1). We have found through requesting the agreed core dataset from partners that even this limited dataset cannot be provided in a usable format, so as to show impact/change (see D6.3). Data have been provided by partners at both aggregate and case by case level and cannot be provided on a comparable scale. In order to collect data more than the most basic of fall related variables, (e.g. falls rates) it is clear that bespoke data collection would be required (as provided by some partners but not with any consistency). We proposed in D6.3 the potential to develop a ProFouND statement on what is currently a feasible dataset. However, following feedback from reviewers about the utility of such a statement we accept their position and thus focus on examining the process and outcome data from ProFouND. A separate epidemiological piece of work which estimates falls rates for all European countries (based on existing evidence) is underway.

Therefore the following deliverable will demonstrate what changes in service delivery have occurred which can realistically be attributed to be as a result of the ProFouND project. We focus on the dissemination of evidence based exercise training, whether this has changed practice and reached the older population at risk. Part one focuses on changes in services across our participating centres and part two focuses on reach directly to older people.

1.2 Examining process and outcome data from ProFouND by developing specific data collection tools.

Background

Each year approximately 10% of the elderly population (65+) will be treated by a doctor for an injury as the result of a fall and approximately 100,000 older people in the EU27 and EEA countries will die from injury from a fall (Eurosafe, 2013) .

There is increasing evidence that exercise programmes that include specific strength and balance training can significantly reduce the risk and rate of falls (Gillespie et al, 2012 & 2009; Sherrington et al, 2011 & 2008). Strength and balance training (SBT) has been described as ‘carrying out exercise that increase muscle strength in the legs and improve balance’ (Yardley et al, 2008: 554). The evidence based FaME and Otago strength and balance exercise programmes are two of the main specific programmes proven to reduce falls in frailer older people (Davis et al, 2009; Sherrington et al, 2008 & 2011; Skelton et al, 2005; Robertson et al, 2001) and are currently the main programmes adopted in the UK (RCP, 2012 p53). Successful training has been carried out with over 4,250 instructors trained in either FaME or Otago in the UK.

The Prevention of Falls Network for Dissemination (ProFouND) is dedicated to bring about the dissemination and implementation of best practice in falls prevention across Europe. As part of this project WP5 trained a cohort of instructors, through a train the trainer programme of cascade training (See Figure 1), across Europe in order to deliver evidence-based strength and balance programmes based on Otago (with some extra training on FaME approaches, such as retraining getting back up off the floor) where there is currently little or no provision. The ProFouND project has also provided evidence-based guidance on the provision of strength and balance programmes and effective exercise pathways for older people, through its website.

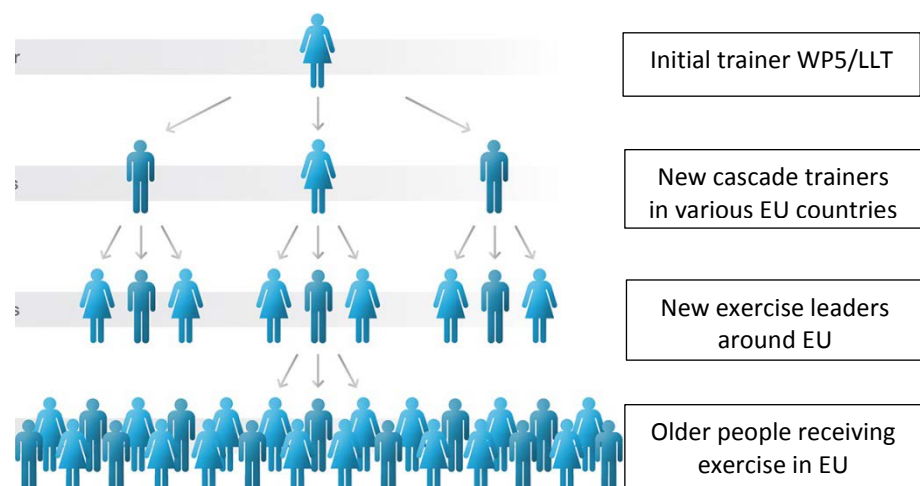


Figure 1: Cascade "Train the Trainer" Model

Below we explore:

Part 1. The impact of the ProFouND project on the delivery of evidence-based strength and balance programmes for falls prevention and service change across specific areas of Europe.

Part 2: The reach of the evidence based training directly with older people across specific areas of Europe.

2. Part 1

Research question.

Are there differences as a result of our cascade training intervention in the delivery of strength and balance training for falls prevention in specific areas of Europe over the ProFouND project period (2013-2016)?

2.1 Aims and Objectives

Aims.

To provide evidence of the impact of the ProFouND project on changes in the delivery of strength and balance training for falls prevention.

Objectives

- To establish how specific localities in countries in Europe deliver strength and balance training and if delivery is evidence-based.

- To explore the impact of both the evidence-based training and evidence-based guidance delivered by the ProFouND project on those specific localities.

- To provide further recommendations to localities and all European countries on how they can deliver effective strength and balance programmes for falls prevention.

2.2 Methods

Study design

We adopted a pre and post intervention design using quantitative methods. Monitoring and evaluation of any programme or intervention is vital to determine whether it works, to help refine programme delivery, and to provide evidence for continuing support of the programme (Rootman et al, 2001).

Sampling principles and procedures

The pre and post intervention design consisted of an online quantitative questionnaire distributed both at baseline (before Cascade training took place) and follow-up (October/November 2015 when all approached trainers had been trained). The questionnaire was sent to 101 service managers and staff delivering strength and balance or falls prevention programmes in localities of European countries (Cascade trainers and colleagues) where the ProFouND project is likely to have a direct

focused impact (Table 1). The questionnaire was sent to regions of Germany, Switzerland, Austria, Sweden, Norway, Italy, Spain, Greece and the Netherlands. Due to the ongoing training programme throughout the project we have chosen not to invite all Cascade trainers to complete the questionnaires e.g. Hungarian Cascade trainers had at the time of writing only just been trained so will not have had time to implement what they learned and change practice.

Data collection methods.

All ProFouND partners and associate members (in the identified areas) were asked to identify organisations that would be influenced by the project. Additionally, we have worked closely with the lead of WP5, who has been closely involved in delivering the cascade training, to identify and contact services. WP5 made the initial contact with the organisations and asked them if they were happy to participate in this data collection. Instructors were sent a link to a University of Manchester webpage, which included all participant information required to provide implicit informed consent to take part in the data collection and the link to the online questionnaire. The organisations were asked to complete the survey once at baseline (August 2014- May 2015, dependent on when the training took place) and towards the end of the project (October 2015) by which time there should have been opportunity to implement changes in services and delivery. We approached 101 Cascade trainers to complete the baseline and follow-up surveys.

Questionnaire Design

The first part of the quantitative questionnaire (Appendix 2) collected demographic information about which organisation and locality the data comes from. The next section asked about the content of the intervention, asking for feedback on five different types of service provision (see Table1 and D6.3), the dose of delivery (how many times a week they offer exercise and for how many weeks), content of the sessions (do they progress strength and balance), assessment and outcome measures and training undertaken to deliver them. It also established the services provided and the pathways and referral routes each organisation currently had established. The next section asked about maintenance and what is offered after the sessions provided, are there pathways to maintenance classes in the community. This questionnaire aimed to follow some of the principles of the Royal College of Physicians (RCP) survey carried out in the UK (RCP, 2011).

The questionnaire used exactly the same questions at baseline and follow-up, except that at follow – up some additional questions were added which asked about how many Otago leaders they had trained, how many older people they had delivered to since training (reported in Part 2 below) and

some open ended questions asking them about their future plans and additional comments.

2.3 Data analysis

When the results from the quantitative questionnaire were downloaded from the online survey they were checked for missing data, the data was then cleaned and coded and exported from excel into SPSS. The survey has been designed carefully in an attempt to avoid missing data. However, missing data is not always avoidable and strategies are in place to deal with its occurrence. A comments box was added to the end of the questionnaire so that if participants felt that they could not answer or nominate the answer they wanted then they could explain this. Quantitative data have been analysed using SPSS Release 22.0, and confidence intervals calculated using Confidence Interval Analysis (CIA release 2.2.0) (Altman, Machin, Bryant, Gardner, 2000). Descriptive statistics have been used to examine both the baseline and follow-up data. Parametric and non-parametric statistical analysis was undertaken as appropriate. The McNemar's test has been used to assess any changes between baseline and follow-up to establish whether there was significance to any observed changes in practice. As a consequence of the smaller than expected sample because of lower than expected response rates for follow-up data we have had to collapse some categories to enable meaningful comparison. As agreed at the review of 2015, comparison between countries is not possible. We only analysed key variables where data could be collapsed in a meaningful way (e.g. length of programme differs considerably between those delivering in hospital based rehabilitation and community based programmes and therefore could not be combined into one category for comparison between baseline and follow-up).

Qualitative data were analysed using thematic analysis (Braun and Clarke, 2006). The research generated categories and explanations directly from the data. However, to give further detail about each country's responses, all the quotes are summarised under each theme.

Ethical issues

Ethical approval was sought from the University of Manchester Committee on the Ethics of Research on Human Beings and deemed not required as the study was judged to be programme evaluation.

2.4 Results

There were N=81¹ respondents to the quantitative baseline questionnaire, with Sweden, Greece and Austria with the highest number of respondents (Table 1). We achieved a response rate of 80%.

¹ Baseline respondents differ from D6.3 as training delivered as rolling programme and more participants recruited.

There were only N=37 respondents to the follow-up questionnaire, with Sweden having the highest response rate. We achieved a response rate of 37/81 (46%) for the follow-up questionnaire.

Table 1: Sample and service characteristics

		Baseline N=81 /101 Number of respondents unless stated otherwise	Baseline for those with follow-up data. N=37 Number of respondents unless stated otherwise	Follow-up N= 37/81 Number of respondents unless stated otherwise
Country¹	Norway	5	2	2
	Austria	10	2	2
	Spain	8	4	4
	Germany	6	4	4
	Greece	13	4	4
	Italy	8	6	6
	Netherlands	5	4	4
	Sweden	25	11	11
	Not stated	1	0	0

Types of service provided	Service following injury or admission to hospital that uses rehabilitation exercises in groups to reduce the risk of future falls Hours of strength and balance	32 27.8 (SD 17.9 Range 5 to 60) (95% CI 21.3-34.3)	12 27.4 (SD 17.5 Range 8 to 50) ^a (95% CI 16.3-38.5)	11 17.5 (SD 12.4 Range 8 to 50) ^a (95% CI 9.2-25.8)
	Service following injury or admission to hospital that uses 1 to 1 rehabilitation exercises to reduce the risk of future falls Hours of strength and balance	42 18.5 (SD 14.4 Range 3 to 50) (95% CI 14.0-23.0)	21 23.5 (SD 16.1 Range 4 to 50) ^b (95% CI 16.2-30.8)	24 23.8 (SD 23.5 Range 4 to 100) (95% CI 13.9-33.7)
	Home based exercise service that uses exercise to reduce the risk of future falls Hours of strength and balance	23 15.4 (SD 13.8 Range 4 to 50) (95% CI 9.4-21.4)	12 21.0 (SD 16.8 Range 8 to 50) [†] (95% CI 10.3-31.7)	13 27.4 (SD 18.9 Range 4 to 50) ^a (95% CI 16.0-38.8)
	Community based group service that uses strength and balance exercises to reduce the risk of future falls Hours of strength and balance	15 34.9 (SD 19.5 Range 10 to 50) (95% CI 24.1-45.7)	8 35.0 (SD 20.0 Range 10 to 50) (95% CI 18.3-51.7)	6 41.6 (SD 39.3 Range 8 to 100*) (95% CI 0.4-82.8)
	General exercise service e.g. walking**	14	8	11

*100 hours was entered where the participant reported that the class was unlimited. **Hours of exercise not reported as reported to be continuous. ^a N=10 ^b N=19 [†] N=21 [‡] N=6 [§] N=8 ^{||} N=11

1. Please see D5.6 for numbers of cascade trainers and exercise delivery instructors trained in each country by end of February 2016.r

Table 2: Changes in delivery following Cascade Training

Respondents with baseline and follow-up data (N=37)	Baseline Number of respondents unless stated otherwise	Follow-up Number of respondents unless stated otherwise
Assessment		
Before the exercise intervention starts the older adults receives a pre-exercise assessment e.g. of their strength/balance/gait/function	25	28
Pre-exercise assessment is used to adapt exercises to suit the older adult's health conditions	24	28
Pre-exercise assessment is used to tailor the exercises to older adults' goals	22	27
Re-assess the pre-exercise assessments at the end to demonstrate change ¹	19	26*
Progression		
Progress strength exercises	22	26
Increase sets and repetitions	20	24
Increase number of different exercises ¹	19	26
Increase weights	18	22
Peak strain	5	7
Progress balance exercises	23	26
Increase the number of different exercises	19	23
More challenging exercises	21	26
Reduce hand holds	21	24
Vestibular/Proprioceptive challenges	15	15
Continuation		
Advice given about continuation	23	28
Home exercise booklet given	17	22

*McNemar's exact $p < 0.05$

¹Please note that although both these variables appear to change identically only "reassessment at end" is statistically significant. This is a function of the McNemar test being based on responses that change rather than total response and ignoring those that do not change ("reassessment at end" 7 in 9 change; "increase different exercises" 7 in 11 change).

Changes in service delivery following training

We tested the difference between participants before and after training on variables related to assessment, progression and continuation of exercise (Table 2). Although, descriptive data suggest improvements across a range of the measures (closer alignment to the evidence base) after training, with for example increased numbers of respondents reporting progression of exercise, only the number of trainers re-assessing older adults using the baseline assessment measures was significantly increased (19 versus 26, McNemar's exact $p < 0.05$). However it should be noted that our small sample size does not rule out the possibility of type 2 error in those cases where we did not detect a significant change. We also used the Wilcoxon matched-pairs signed-ranks test statistic to test the differences in hours of intervention that participants reported older people got before and after we carried out the cascade training and found no significant differences ($p > 0.05$). However, this could again be due to the very small sample size. Please note when inspecting Table 1 that data at follow-up (and the comparator number at baseline) refer to smaller sample size ($n=37$) than at baseline ($n=81$). Thus, service provision has not reduced markedly; indeed it would appear in the face of it to have increased (NB 95% CIs), albeit non-significantly.

Number of Otago leaders trained by Cascade Trainers

Based on survey response at October 2015 we had 15 Cascade trained respondents from Germany, Norway, Greece, Italy, Spain, The Netherlands, Sweden and Greece who reported that they were actually training others to be Otago exercise leaders. Because of the differences in training date between centres, to make the data comparable we had to calculate how long trainers had been trained on our census date so that we could calculate a training of new trainers rate. At the census date, we calculated that between them they had a total of 185 person months since initial training. In this period they had trained 307 new Otago exercise leaders i.e. a rate of 1.7 new Otago exercise leaders per month for those delivering Otago exercise training. Since the survey was carried out a large number of our partners have reported much higher levels of training and these are reported in appendix 3.

Qualitative feedback

Qualitative feedback from the questionnaire was provided by $N=23$ respondents at follow-up (qualitative feedback from baseline and separate qualitative interim feedback is already provided in D6.3). The following themes arose from coding the data; *future training, changes in practice and delivery, new exercise classes and barriers to reaching older people*. The data which fit within the

theme *barriers to reaching older people* are summarised and discussed under part 2 of this deliverable as it is about reaching older people.

When discussing *future training* most respondents reported their intention to train more Otago leaders, this training was carried out either by setting up specific Otago courses, through training within university courses (e.g. BSc Physiotherapy or nursing, or MSc Gerontology) or by skilling up other physiotherapists within the workforce. Respondents reportedly *changed their practice* by including more assessments and delivering more person centred and individually tailored exercise programmes, this is supported by the quantitative data reported above. Participants also discussed how delivering different types of classes e.g. follow-on classes/community classes could be difficult as they were constrained by the healthcare system they worked within. Participants reported how they had *set up classes* or intended to set up *new classes* delivering Otago to older people. For some, it was just a change to the way they delivered one to one sessions, into which they have now incorporated evidence based exercise.

Table 3: Qualitative comments from questionnaire

<p>Future Training</p>	<p>We are presently organizing a widespread OEP in the community in the framework of the 2015-2019 regional plan of fall prevention... but we are presently at the very start (Italy).</p> <p>No cascade trainer trained/available --> no further plans concerning Otago/other fall prevention programmes in the near future (Germany)</p> <p>We have number of classes we need, but hope to train 2-3 new instructors in Jan 2016 (Norway)</p> <p>Apart from the training I have done in Lamia I am now going to train new OEP Leader in Athens (Greece).</p> <p>In my municipality we are planning on putting together a Group to firstly practice the OTAGO-regime and then start to teach other leaders (Germany).</p> <p>Planning to...training new instructors (Norway)</p> <p>I am planning to deliver training for new instructors (Germany).</p> <p>We intend to continue attracting more physios for training (Greece)</p> <p>Have some project funding for a 4month project training Otago leaders in Northern Sweden, in nearby regions, that lacking evidence based training</p>
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	<p>for fragile older people (Sweden).</p> <p>We have included the Otago exercise programme as part of the Physiotherapy curriculum in Umea. However the students will not get certification as Otago leaders (Sweden).</p> <p>We are thinking of providing OTAGO courses at our academic institution for the general community around the institution (Germany).</p> <p>There is a plan for 2 years to train about 150 new OEP leaders (Italy)</p> <p>We are starting to training university student (bachelor degree nursing or physiotherapy) (The Netherlands)</p> <p>Training new instructors: Donosti course (Spain)</p> <p>I would like to open a centre for older people to deliver Otago exercise (Spain)</p> <p>In Holland physiotherapist can apply for training OTAGO from December 2015 (The Netherlands)</p> <p>The plan was to train new instructors this fall but now unsure if we are going to have the time (Sweden)</p> <p>In Tuscany we're setting up new OEP leader courses (Italy)</p> <p>At the moment I decided to devote the time that I have outside the University to train more Otago Leaders as well as to make a campaign in the country (among Physiotherapists, other health professions and directly to older people on the Otago benefits) (Greece).</p>
<p>Changes in practice/delivery</p>	<p>We will - provide better person-centred interventions; offer more individually requested rehab-plans - implement the instrument COPM and other relevant assessments (Sweden)</p> <p>The way the Healthcare is divided in our region of the country makes for certain types of exercise Groups that we can offer (Sweden).</p>

<p>New exercise classes</p>	<p>We have number of classes we need (Norway)</p> <p>We are planning to set up classes to local houses for elderly and community duelling (Greece).</p> <p>Planning to set up new Groups (Norway)</p> <p>Currently planning to start an OEP at work with the service users! (Greece)</p> <p>We intend to disseminate and organise more groups and one to one sessions with elderly (Greece).</p> <p>In Germany we are just starting to roll out the OTAGO program on a broader level so the courses are not on a regular basis yet let alone follow-up courses (Germany).</p> <p>There are Physios in the area trained in Otago and delivering it in a modified manner to older people at the moment mainly in one to one basis (Greece).</p>
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2.5 Conclusions

Overall, the findings from the questionnaire indicate positive changes in practice that, over time, will have an increased impact on older people's health and well-being and reduced falls risk. We established in deliverable D6.3 that not all regions delivered evidence based strength and balance programmes and that delivery in a variety of settings so as to support long-term maintenance of exercise was patchy.

The questionnaire indicates that a range of services are delivered across the localities involved in the ProFouND project. Follow-up data indicates that there have been improvements in evidence based and tailored assessments of older people, in the delivery of exercise (e.g. it is more progressive), and in the advice given around maintenance of exercise. However, only re-assessment of patients to show change (important for both demonstrating impact for funding of services and in promoting motivation and adherence for older people) significantly increased between baseline and follow-up.

Just under 40% of those with follow-up data reported that they had trained Otago exercise leaders. This is not surprising as half of the participants were only trained in the spring of 2015, leaving little time to set up training courses. Participants report an impressive number of Otago exercise leaders trained so far and highlight plans for further training. Reports from partners at the final ProFouND meeting in Bologna (Feb 2016) indicate that training has continued to be rolled out and knowledge about dissemination of training and of evidence based practice was reported and shared (Appendix

3). The number of new Otago exercise leaders illustrate the potential for substantial service change and reach with older people, this is also supported by the qualitative comments.

There are several limitations to the study. A major challenge to demonstrating the impact of WP5 cascade training is that the training programmes have run during the entire project. Thus there was no point in inviting all cascade trainers to complete the questionnaires, since some have only recently been trained (e.g. Hungarian Cascade Trainers) and there has been no time for implementation to commence. The different initiation times of cascade training in the various regions means that direct comparisons cannot be made between countries. We have also had loss to follow-up with only 37 of the original 81 responders responding to the follow-up questionnaire. Based on feedback given at the final ProFouND meeting in Bologna it seems that this loss to follow-up has led to a major underestimation of impact by this study. The data reported in the final network meeting in Bologna in February was from partners who had direct contact with their local cascade trainers and some of who were themselves directly involved in rolling out Otago in their regions. These data are presented in appendix 3, as can be seen these provide even more promising outcome results for the project in terms of roll out, than our survey of cascade trainers (e.g. Germany have reported training 700 Otago exercise leaders not included in our original figures). The proximity of the partners reporting these data to “events on the ground” add credibility.

In conclusion, despite the limitations of the study and loss to follow-up, the results suggest that changes in practice are taking place and indicate the potential for further changes and improvements in the delivery of evidence based exercise provision for falls prevention. Later Life Training will monitor and continue to support the cadre of cascade trainers and the Otago exercise leaders that they have trained. There is commitment from partners to continue to be engaged in cascade training which should enable continued roll out. Indeed training has been requested from a number of regions following the end of ProFouND funding from EC and the business model for this continued training is under development and will be taken forward by the SME Later Life Training, working with Demokritos to support online portal training and continuing professional development monitoring.

3. Part 2

3.1 Research Question, Aims and Objectives

Research question.

Has the Cascade and Otago exercise leaders training led to older people receiving evidence based strength and balance programmes?

Aim

To demonstrate the reach of the Cascade and Otago exercise leaders training programmes to older people.

Objectives

- To establish how many older people have received evidence based strength and balance programmes from a Cascade trainer or Otago exercise leader trained by the cascade programme.
- To explore future plans for delivery and the potential impact on older people.

3.2 Methods

We adopted a cross sectional, observational design using pre-dominantly quantitative methods.

Sampling and data collection

We distributed an online quantitative questionnaire at one time point (October 2015) to Otago exercise leaders. We approached a sample of Norwegian, Greek, German, Swiss and Austrian Otago exercise leaders (N=76) through their Cascade trainers. It was estimated that those who were trained at an early time-point in the project would provide an indication of impact for older people, the WP5 lead identified this sample as the leaders who had been given the most time to implement what they had learnt. As the Otago exercise leaders did not all have good English, the Cascade trainers translated the questionnaire and the questionnaire was created online in Greek, Norwegian and German. The Cascade trainers distributed the link and an email inviting Otago leaders to participate. The Norwegian Cascade trainer discussed the questionnaire with the Otago leaders and provided feedback on behalf of all Norwegian Otago exercise leaders trained.

All 81 Cascade Trainers were also approached and asked about whether they had delivered evidence based exercise directly to older people following their training. The same questions on reach used

within the Otago exercise leaders' questionnaire were included in the follow-up questionnaire outlined above for the Cascade trainers.

Questionnaire design

The first part of the quantitative questionnaire collected demographic information about which organisation and locality the data comes from. The second part asked them about when they trained to deliver, whether they currently deliver exercise to older people using what they have learnt, the types of service they deliver (e.g. hospital, community, group based, one to one) and the number of older people who receive each type of service (see appendix 4). Finally we asked them about their future plans/other comments.

3.3 Data analysis

When the results from the quantitative questionnaire were downloaded from the online survey they were checked for missing data, the data was then cleaned and coded and ported from excel into SPSS. The survey has been designed carefully in an attempt to avoid missing data. A comments box was added to the end of the questionnaire so that if participants felt that they could not answer or nominate the answer they wanted then they could explain this. Quantitative data has been analysed using SPSS Release 22.0. Descriptive statistics have been used to describe the data. We then looked at the number of older people who participants reported had received an evidence based intervention since the participants had been trained and calculated how many people they had trained per month (based on number of months since trained).

Qualitative data from the comments boxes were analysed using thematic analysis (Braun and Clarke, 2006). The research generated categories and explanations directly from the data. However, to give further detail about each country's responses, all the quotes are summarised under each theme.

Ethical issues

Ethical approval was sought from the University of Manchester Committee on the Ethics of Research on Human Beings and deemed not required as the study was deemed to be programme evaluation.

3.4 Results

We received responses from 38 Cascade trainers, including 3 trainers from Greece, 3 from Norway, 8 from Sweden, 8 from Germany, 1 from Austria, 5 from the Netherlands, 3 from Spain and 7 from Italy. Out of the 76 Otago leaders approached 37 (48.7%) responded; this included 18 Greek, 2

German, 1 Swiss and 16 Austrian leaders (the Norwegian respondent is included under the Cascade Trainers and she responded for all Otago leaders). Out of this sample we had 59 trained respondents who were actually trained and delivering the evidence based programme to older people.

Number of older people receiving evidence based exercise

Because of differences between centres in training date we had to calculate in terms of person months exposed and calculated that between them they had a total of 328 person months since initial training. In this period they had delivered to 2749 new older people i.e. a rate of 8.4 new older people per month per person trained. This means that the evidence from the questionnaire indicates that we are reaching the higher estimates made on reach by WP5 (see Figure 2). If this model of reach is accurate we can expect more than 140,000 older people to have received Otago training by February 2017. Data reported in Bologna at the final ProFouND meeting indicates that because of the greater number of Otago trainers trained by the cascade trainers the actual number is very likely to be much higher than our estimate (see appendix 3).

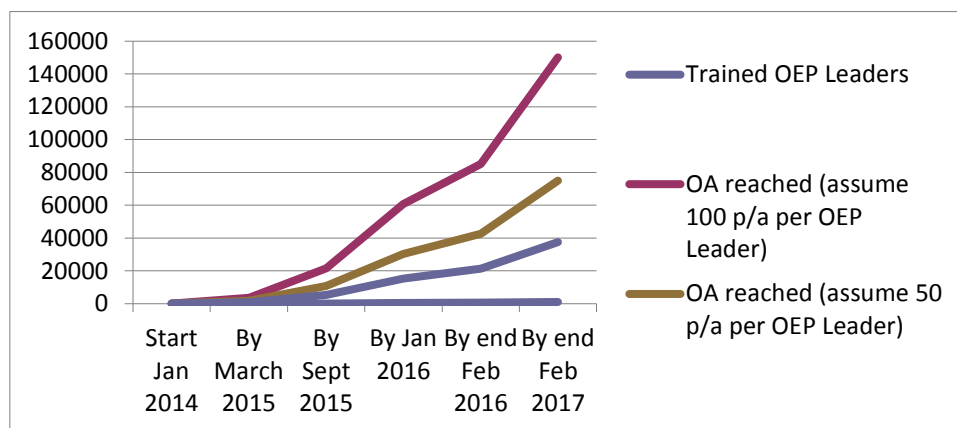


Figure 2: WP5 estimations of potential reach (our data indicates approx 100 older people reached p/a per person trained i.e. the top estimate).

Qualitative feedback

Qualitative feedback from the questionnaire specifically related to delivering evidence based exercise to older people was provided by just N=3 Cascade trainers (Greek and Norwegian) and N=19 Otago exercise leaders (German, Austrian and Greek). The following themes arose from coding the data; *setting up new classes and delivery, presentations to others, the benefits of the programme*

and *barriers to reaching older people*.

Participants discussed the *classes and delivery* they had set up since they had been trained but also their plans to set up *new programmes*. They delivered in a variety of settings, both rehabilitation in hospital, one to one, and home based and community based classes. Some participants had clear plans to set up a number of new classes in 2016. In Greece the Otago exercise leaders and Cascade Trainers *disseminated information* about the Otago programmes by presenting to health professionals, instructors and community groups. Otago leaders did report that their participants had noticed *improvements and health benefits* as a result of the programme. Finally, Otago exercise leaders and Cascade trainers discussed the *barriers to starting new classes/programmes* and getting older people to attend. Barriers cited were common ones which can be found in the exercise literature (Hawley-Hague et al, 2014. 2016) and included fear, beliefs that it was not challenging enough and lack of outcomes, transport, weather, time (both to deliver and to participate), lack of engagement from health professionals and cost.

Table 4: Qualitative feedback on reach with older people

<p>Setting up new classes/delivery with older people</p>	<p>I want to create larger groups of participants aimed to make the OEP program well known and reduce the bad consequences of falls (Greece)</p> <p>Setting up 2-3 new classes and 4-5 one-to-one Otago delivery with older people (Greece).</p> <p>I intend to start a co-operation with the nursing home of Volos where I set up 1 or 2 new classes (Greece).</p> <p>I do my training in a hospital and I realized that most patients in the Orthopedic department, have suffered fractures due to falls. Approximately 95% of them are over 65 years old. I was thinking to create small classes of 2 or 3 persons for inclusion in the Otago program after their initial physiotherapy program of recovery (Greece).</p> <p>In days for the elderly people such as the world day of physiotherapy or the 1st of October or the world exercise day we recommend the Otago program either setting up new classes/ or one-to-one Otago delivery with older people for strength and balance (Greece).</p> <p>When we treat patients for their rehabilitation after a fall we suggest exercises to avoid falls in the future (Greece).</p> <p>I think that I will continue to implement the Otago in a one to one home based programs (Greece).</p> <p>I will deliver the OEP exercises for improving health and prevention of falls and decrease the impact of falls (Greece).</p>
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	<p>We have set up new classes in groups in 2 KAPI of the municipality of Patras and we have planned one for the KAPI of Aigion. Also we've made a discussion in cooperation with the Geriatric and Gerontology Association of Western Greece to create new classes in groups (Greece).</p> <p>I will deliver a group with older people from February (2016) on. My courses for older people take place twice a year. Each course has 6 sessions (Austrian).</p> <p>In January (2016) I start a course, which consists of 5 sessions spread over 5 months (Austria).</p> <p>I would like to reorient myself this year, maybe offer courses in a social club for older people (Austria).</p> <p>We are motivated to implement this programme, but are still developing the structures for this (Austria)</p>
<p>Dissemination to other health professionals/instructors</p>	<p>Speeches to promote the Otago program (Greece)</p> <p>I am expecting a call from the KAPI of Nea Ionia- Volos for a new demonstration of the Otago program (Greece).</p>
<p>Benefits of the programme/motivation</p>	<p>It's my pleasure I have trained in this program! The trainees are very happy because they see the difference in their body! (Greece)</p> <p>Any old person participates in the OTAGO has benefits for himself and for his family. For this reason we must offer it to as many as we can (Greece).</p>
<p>Barriers to delivery/sustainability</p>	<p>It is not difficult to approach the elderly and start the OEP program. The difficulty is to sustain the program (Greece).</p> <p>The communication and their monitoring takes a lot of time (Greece).</p> <p>We have to motivate them and convince them that the program works (Greece).</p> <p>In attempting to involve two women aged 72 and 76 years with a history of falls in an individual Home based program both denied saying "I won't do it on my own" (Greece).</p> <p>Continuous denial of the elderly and low self-esteem (Greece).</p> <p>I find that there is plenty of fear from the elderly to start an exercise program. On the other hand it is very difficult to handle seniors with neurological problems, particularly with Parkinson's disease (Greece).</p> <p>The poor state of balance and the high levels of mental deduction due to age, or due to dementia are potential problems (Greece).</p> <p>There are obstacles such as, economic crisis is affecting elderly people's</p>

	<p>ability to participate although the fees are considerably low, falls prevention measures-prophylaxis is considerably low in Greece among elderly due to mostly the ignorance and extremely low rate of referrals from the medical doctors of the region (Greece).</p> <p>Transport too difficult, the classes are in localities too difficult to reach if you are not driving a car. The weather, some people afraid to attend classes in Winter with snow and ice (Norway)</p> <p>I wanted to offer Otago in my courses at AJS. 2 groups did not take place, the 3rd group was a trial course, was not appreciated, participants did not want to try out new things (Austria).</p> <p>Currently no time to offer a further group (Austria).</p> <p>Group offers did not run well. The reasons were that many older people did not feel affected by them, they did not have enough confidence or just gave up.</p> <p>When I tried to do Otago on a one to one basis I had to invest a great deal of energy to convince older people, plenty of them just accepted their fate, or wanted to be moved through by a physio, are not motivated to do the programme alone at home. I can offer the concept twice a week in context of a "personal training", but this is too expensive for many people and is not subsidised by the health insurances (German)</p> <p>It is very hard to integrate Otago in your normal Group. It is too easy for people who are not handicapped. My group members are between 60 and 92, but all are able to walk without any assistance (Austria)</p>
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3.5 Conclusions

Most Otago trainers and Cascade trainers who carried out direct delivery with older people had plans to continue to deliver programmes to older people and to promote the use of evidence based exercise for falls prevention. The difficulties they reportedly experienced were around maintaining exercise provision and about engaging older people in uptake and continued attendance. There have been various studies carried out in this area (Hawley-Hague et al 2014. 2016) and the findings from this study echoes this existing knowledge and highlights some of the difficulties of delivering the evidence base into practice. However, the reach to older people is impressive from the relatively small sample of Otago leaders and Cascade trainers who we approached. This indicates that the ProFouND Cascade training has the potential to continue to have impact directly with older people over the next few years.

There are several limitations to the study. Again a major challenge to demonstrating the impact of WP5 cascade training directly on older people is that the cascade training has run throughout the project and the Otago exercise leaders training programmes have run towards the end of the project. Thus there was no point in inviting all Cascade trainers or Otago exercise leaders to complete the questionnaires, since some have only recently been trained and there has been no time for implementation to commence. Again the different initiation times of training in the various regions means that direct comparisons cannot be made between countries. The response rate for Otago exercise leaders was normal for survey responses with approximately half of those approached responding and one Norwegian Cascade trainer providing data for all Norwegian Otago exercise leaders.

To conclude, the indications from the reach survey suggest that evidence based programmes are being rolled out across participating countries with the potential for further implementation over the coming years. A significant number of older people have already received an evidence based intervention, which evidence indicates that they will have a reduced falls risk.

4. Overall Discussion

Both studies we have carried out suggest that there are opportunities to continue to adopt the evidence base in practice across Europe and that the cascade training is having an impact on the delivery of strength and balance training. In the longer term this impact is likely to be very considerable and because of the nature of the cascade model will reach many tens of thousands of older people across EU28 and provide them with proven exercise regimens to prevent falls. Later Life Training will continue to provide support for Cascade trainers and Otago exercise leaders. Their work will continue to be supported by Demokritos who will provide portal services to facilitate online training, programme fidelity and quality assessment as part of a continuing professional development programme. The business model requires some refining but is in place (See D1.8). We recommend that further investment be provided to ensure that the SME Later Life Training can continue to roll out evidence based exercise across new countries and regions. Further details about individual success stories are outlined in appendix 3 and an example from one Greek Otago exercise leader is provided illustrating the type of data that it is possible to collect on participants to evidence the continued success of the programme in the future (Appendix 4).

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6. Appendices

Appendix 1 : Factsheet on falls data across Europe

Falls among older adults in the EU-28: Key facts from the available statistics

1. IN SUMMARY

- In the EU, an average of 35,848 older adults (65 and above) are reported to have died from falls on an annual basis (data 2010-2012). This figure is expected to be an underestimation of the true number of fall-related deaths.
- Falls are also the predominant cause (58%) of injury related emergency department (ED) attendances for older people within the EU.
- For each fall related death, in adults aged 65 and above in the EU, there are:
 - > 40 fall-related hospital admissions
 - > 65 fall-related ED attendances

Injury pyramid for falls in people aged 65 and above in the EU:



- > **Approximately 36,000 older people are reported to be fatally injured from falls every year in the EU**
- > 1,443,000 fall-related injuries are admitted to hospital each year (40 x number of deaths)
- > 2,314,000 older people attend emergency departments with fall-related injuries each year (65 x number of deaths)

Age and gender related functional decline and impairment result in an increased risk of fall related injuries in older people. The costs of falls are high, both to the individual, carers and society. The health care expenditure for treating fall-related injuries in the EU is estimated to be 25 billion Euros each year.

However, falls are NOT an inevitable part of ageing. There is ample evidence that multimodal falls prevention programmes which target a combination of risk factors and which are tailored to select high risk groups, are effective and can significantly reduce fall-related fractures in community dwelling older adults.

Each additional healthy life year that can be gained for an older person, counts.

2. FALL RELATED DEATHS IN OLDER ADULTS

Among the 35,848 fall related deaths among older adults:

- 88 % relate to people aged 75 or older; and
- 59 % relate to women.

As the population of older people (65 and above) in the EU is expected to grow by 60% by 2050, the number of fall-related deaths is expected to increase to almost 60,000 by 2050; this is unless additional measures are taken to prevent falls in older adults.

All EU-countries report death statistics annually to the World Health Organisation. As we can see in the annexed table, there are huge variations in national fall-related death rates: Slovenia and Croatia reporting rates of more than 100 per 100,000 older persons and Cyprus, Greece, Portugal and Bulgaria reporting less than 15 per 100,000. These variations are largely due to variations in coding conventions between countries. For example, in a number of countries the

underlying cause of death is often left unreported and therefore these countries report lower rates of fall-related deaths than would be expected.

From this we can conclude that the actual number of fall related deaths within the EU-region is far larger than current statistics suggest.

3. FALL-RELATED ED ATTENDANCES AND HOSPITAL ADMISSIONS

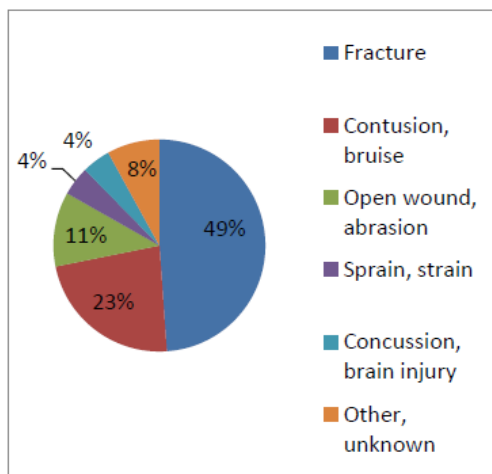
Based on a sample of over 200 hospitals from across Europe, it can be estimated that every year within the EU, 3.8 million older people attend emergency departments (ED) with a fall-related injury; of which 1.4 million are admitted to hospital for further treatment. It is important to highlight that the actual number of fall-related attendances and admissions are likely to be much higher than this due to current inadequacies in many hospital data collection systems.

It is also important to emphasise, that without additional fall prevention efforts, the annual number of fall-related ED attendances is expected to increase to over 6 million by the year 2050, with more than 2.3 million cases admitted to hospital with subsequent long term care.

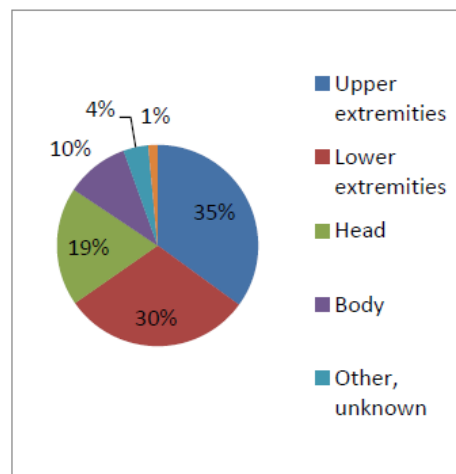
It is well known that the risk of experiencing a fall increases with age due to reduced physical function, muscle strength and flexibility. This is reflected in the statistics, with the rate of fall related injuries in people aged 85 years and older 3 times higher than the rate of fall-related injuries in people aged 65-74 years of age (28 per 1,000 people aged 65-74, and 90 per 1,000 people aged 85years and above).

With increasing age, the severity of a fall-related injury also increases: for those aged 65-74 years 32 % of fall-related injuries require admission to hospital, whereas this proportion increases to 39% for those aged between 75 and 84, and 45 % for people aged 85 or older. Twice as many women are hospitalised or attend ED's after a fall compared to men (2,285,000 females vs. 1,124,000 males). This is partly due the fact that women live longer than men, but the fall-injury rate of women still remains 44% higher than that of men..

Almost half of all fall-related ED attendances across Europe result in a fracture, with 1 in 4 presenting with bruises/contusions, 1 in 10 open wounds/abrasions, 1 in 20 sprains/strains, and 1 in 20 presenting with fall-related concussion/brain injury. 1 in 3 cases suffered injuries to the upper extremities, 1 in 3 suffered injuries to the lower extremities, 1 in 5 experienced an injury to the head and 1 in 10 experienced an injury to other parts of the body.



Type of injury after a fall reported to hospital



Body part affected by fall-related injury

Falls often lead to post-fall anxiety, fear and subsequent dependency on family carers or even admittance into nursing care facilities.

A number of studies have been carried out in order to estimate the costs of medical care related to fall injuries in older people. Although the resulting national estimates can vary quite markedly, the cost of fall-related injuries are staggering.

A recent comprehensive study in the Netherlands estimated that the average medical and social care costs for a fall-related injury to be 9,370 EUR per case, with average costs from 3,880 euros in the 65-70 year age group, increasing by age to 14,600 euros per case in the 85+ age group.

If the figures from this study are applied to the whole of the EU, it can be estimated that at least 25 billion euros are spent treating fall-related injuries across the EU every year. Furthermore, shifting demographics over the next 35 years could result in annual fall-related expenditures exceeding 45 billion euros by the year 2050.

4. RISK FACTORS

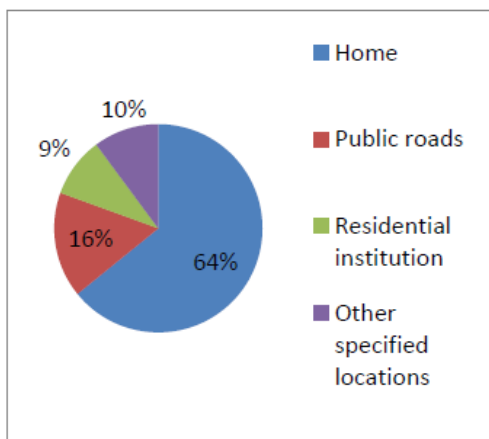
Age and gender related functional decline, chronic diseases, impaired mobility and multiple medication use, increase the risk of fall-related injuries in older people and result in higher rates of falls for women compared to men.

Risk factors for falls are commonly grouped into three main categories:

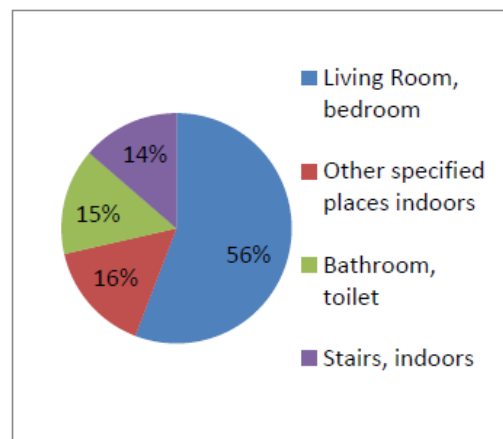
- Intrinsic factors, including: poor muscle strength and flexibility, poor balance, reduced physical function and gait speed, reduced cognition and sensory impairment, medical conditions and related medication
- Behavioural factors, including: inadequate diet, use of inappropriate footwear, above moderate alcohol use, and changes in mobility patterns due to fear of falling;
- Environmental factors, including: uneven pavements, slippery surfaces, poor lighting, worn carpeting, and hazardous steps.

The majority of fall-related injuries occur while older people move around home; predominantly in the living room or bedroom (56%), followed by the bathroom/toilet (15%) and lastly on the stairs (14%). The remaining fall-related injuries which occur in the home take place in other or unspecified areas of the home (16%).

1 in 6 fall-related injuries occur on public roads (mainly side-walks) and 1 in 10 fall-related injuries occur in residential institutions such as nursing and sheltered homes.



Majority of falls occur at home



At home most injuries occur in living or bed room

5. HOW TO PREVENT THIS RISING EPIDEMIC?

There is considerable evidence that multimodal falls prevention programmes which target a combination of risk factors, and which are tailored towards select high risk groups, are

effective and can reduce fall-related injuries in community dwelling older adults.

Multi-modal interventions typically focus on four main areas of prevention:

1. Offering multifactorial post-fall risk assessments to all 'first-time fallers', including review of their multi-medication and enrolment in a physical activity programme supervised by a physiotherapist
2. Encouragement to join home- or group-based exercise programmes focussing on balance training and muscle strength, tailored to the physical condition of each participant
3. Design modifications to both the home and public environment, including: 'age-friendly' transportation modifications, home modifications by facilitating home visits by a trained professionals, and seeking opportunities from the Information and Communication Technologies (ICT) sector to provide solutions for fall-detection and -prevention;
4. Enhancing 'Fall Awareness' among health and social care professionals and older adults, and maximising opportunities for accessing evidence based fall prevention methods and tools.

Studies reveal that dedicated falls prevention programmes targeted at high risk groups can help decrease injury rates by 20-40%. Fall prevention activities also have the potential to be cost effective, and reduce substantially the health care costs associated with fall-related injuries.

The European Commission has identified active and healthy ageing as a major societal challenge in all European countries. The European Innovation Partnership on Active and Healthy Ageing (EIP-AHA), which includes a component dedicated to preventing fall injuries in older people, aims to increase the average healthy lifespan for all individuals in the EU by two years by 2020.

6. IN CONCLUSION

Falls present a significant threat to health and well-being in older people and are a major cause and contributor to morbidity, disability and premature death.

Falls also result in significant costs, both to the individual and carers in terms of physical and psychosocial costs, and to society in terms of healthcare and social service utilization.

Currently there are huge variations in national fall-related deaths, hospitalisations and ED attendances. These variations are largely due to variations in coding conventions between countries, and as a result of poor quality hospital data on the external cause of injuries.

Therefore, a key priority for health authorities is focus on the improvement of their death reporting systems, as well as their hospital data collection systems, to ensure fall related deaths and injuries are more accurately recorded in the coming years.

Age and age-related health problems are an important determinant of falls and subsequent injuries. For a healthy active aging population, access to a multifactorial assessments and appropriate interventions is vital, including access to safe environments which encourage physical activity and allow safe movement. Such programmes have been proven to be effective in reducing the number of falls.

Promoting effective fall's prevention initiatives and encouraging older people to live healthy active lifestyles is the responsibility of everyone. The citizens of Europe, all levels of government, communities, practitioners, family and carers, researchers, the non-profit sector and the private sector all have a role to play.

This factsheet is by:

- Samantha Turner, Swansea University (data analysis)
- Rupert Kissler, EuroSafe (data report);
- Wim Rogmans, EuroSafe (coordination and text).

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Annex: Table on fatal falls reported by EU-member states to the WHO-office for the European Region (mean age standardized incidence rate per 100.000 persons 65 and older; three most recent years)

Country	3 most recent available years	Average no. of fatalities due to falls (65+)	Average population (65+)	Age standardised IR per 100.000
Bulgaria	2010 - 2012	128	1.356.725	9,01
Portugal	2010 - 2012	243	1.988.526	10,45
Greece	2009 - 2011	274	2.160.687	11,40
Cyprus	2010 - 2012	16	110.445	12,26
Spain	2010 - 2012	1718	7.981.413	16,13
Romania	2010 - 2012	556	3.198.735	16,87
Estonia	2010 - 2012	46	231.352	17,79
Italy	2009 - 2011	2864	12.223.628	18,02
Latvia	2010 - 2012	79	382.892	20,00
United Kingdom	2008 - 2010	3578	10.113.394	27,09
Lithuania	2010 - 2012	164	544.062	28,54
Slovakia	2008 - 2010	202	661.392	29,49
Ireland	2008 - 2010	176	490.524	30,53
France	2009 - 2011	5015	10.560.752	33,19
Sweden	2010 - 2012	822	1.760.484	34,78
Austria	2010 - 2012	704	1.491.253	37,70
Denmark	2010 - 2012	439	941.709	38,50
Malta	2010 - 2012	28	65.487	40,35
Czech Republic	2010 - 2012	733	1.673.473	40,36
Germany	2010 - 2012	8681	16.888.622	41,67
Poland	2010 - 2012	2776	5.278.439	45,24
Belgium	2008 - 2010	1107	1.845.629	47,37
Luxembourg	2010 - 2012	42	72.303	47,94
Netherlands	2010 - 2012	1602	2.664.220	48,80
Hungary	2010 - 2012	1522	1.677.312	80,08
Finland	2011 - 2012	971	961.670	82,20
Croatia	2010 - 2012	910	762.693	111,99
Slovenia	2008 - 2010	449	335.507	121,97

Appendix 2: Screen shots of online questionnaire on delivering exercise to older people at risk of falls

MANCHESTER
1824
The University of Manchester

DELIVERING EXERCISE TO OLDER PEOPLE AT RISK OF FALLS

5%

We are interested in understanding what exercise interventions are delivered in different countries/regions to prevent/reduce falls in older people. This will allow us to gather a baseline of delivery before we begin the cascade training across the partners within the ProFouND project. If you do NOT currently have any mechanism for delivering exercise to older people at risk of falls please still complete the specific section of the questionnaire. You will be asked about different types of exercise intervention, each intervention has its own specific questions which you will be asked to complete if you currently deliver that intervention.

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MANCHESTER
1824
The University of Manchester

DELIVERING EXERCISE TO OLDER PEOPLE AT RISK OF FALLS

10%

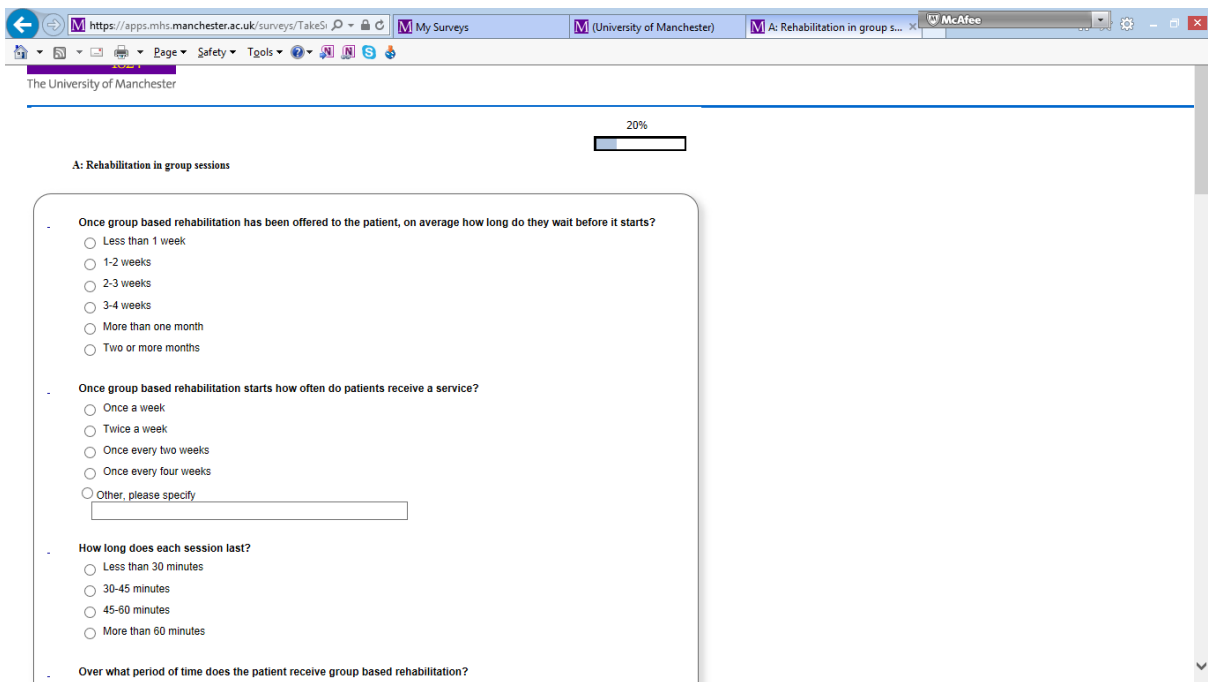
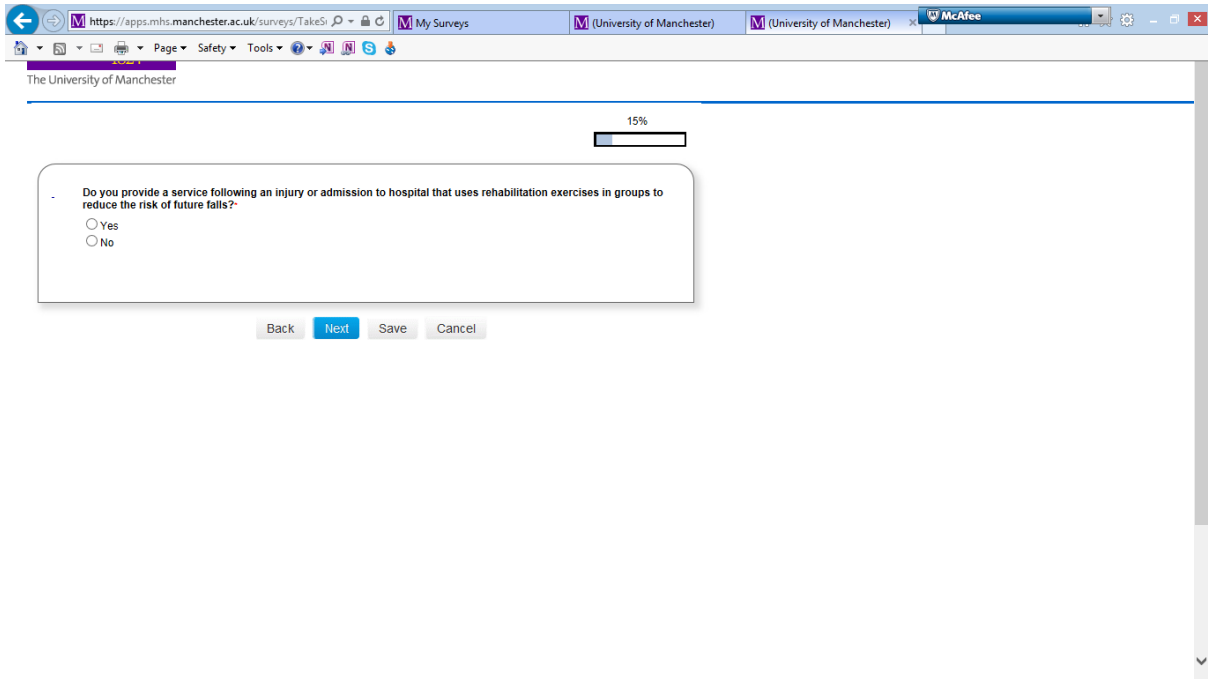
Country

County/locality

Organisation name

Contact email address

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Screen shots of online survey of delivering exercise to older people at risk of falls from

<https://apps.mhs.manchester.ac.uk/surveys/SurveyList.aspx>

Appendix 3: Posters presenting additional promising results (for example Germany's 700 Otago exercise Leaders).



Fundació Salut i Envel·liment – UAB

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²Col·legi de Fisioterapeutes de Catalunya [Catalan Board of Physical Therapists]



Implementing Success

Within the framework of ProFOUND, we have conducted following activities:

- Leaflets, booklets and website identification and uploading to website
- Translation (and back-translation) of fall prevention materials to/from Spanish-English (including OTAGO training materials)
- Review of falls data available in Spanish surveys
- Writing a new booklet on fall prevention (published in Catalan and Spanish) and presenting it to the public in several towns around Catalonia, in joint cooperation with local governments, older people organizations and Fundació Agrupació (insurance company).
- Identification of key local stakeholders, presentation of ProFOUND to them
- Meetings with the Health Department of the Catalan Government to discuss the possible establishment of standardized procedure for fall data gathering in long-term care
- Within our role of advising the health department we have incorporated recommendations on fall prevention in different areas: day hospital, hospital...
- Testing and feedback on the PFPApp
- Contribution to the ICT and Technology for Falls Forum
- Regarding the OTAGO training:
 - Organisation of OEP Leaders course in Barcelona and recruitment of Physical Therapists from Catalonia, Valencia, Illes Balears, Murcia, Navarra, Aragón and Euskadi.

Challenges to Implementation

Organisation and coordination of two cascade trainings in Madrid and one in Barcelona

Workshop with different stakeholders, including older people, policy makers and health and social care professionals on the International Older People's day (1st October 2015)

The economic crisis has reduced the budget for health policy, which has endured cuts in (preventive) programmes and salaries. Therefore, the context is unfavorable to initiate new lines of work.

Preventive programmes in ageing are still underestimated.

Dissemination activities are very time consuming and require well-designed material resources to successfully achieve the expected impact on raising awareness and reduce the fall rates.

Although the global aim of fall prevention is very clear, it is still challenging to transform it into a systematic strategy in practice. The main challenge is the need to commit a multiplicity of actors in building and applying a transversal strategy.

It's challenging to push fall prevention and related risk factors (e.g., mobility disability) into a priority in the health policy since policy makers already have their own agendas.

Priorities for the policy makers depend on the political moment and change over time, e.g., with elections.

Despite all the efforts needed to influence policy, the viability of this impact is relatively low.

Fall prevention has turned out not to be attractive enough for the media although its big societal impact.

Impact Measures

Specific agreement with the Col·legi de Fisioterapeutes de Catalunya (Catalan Board of Physical Therapists) to implement the cascade training

Otago Exercise Programme Leaders Course:



10 Physical Therapists from Catalonia, Valencia, Illes Balears, Murcia, Navarra, Aragón and Euskadi.

Cascade training: 2 in Madrid with the Madrid's Board of Physiotherapist (a total of 24 Physical Therapists) and 1 in Barcelona (12 Physical therapists), 4 more courses are underway.

Workshop on fall prevention (150 professionals, older people and policy makers).



Next Steps/Sustainability

FSIE-UAB will continue:

- Implementing and spreading the OTAGO training programme in coordination with the Physical Therapists Boards around Spain.
- Campaigning and raising awareness.
- The contact with policy makers in order to push fall prevention as a priority in public and primary health in Catalonia.
- Trying to establish a regional strategy for fall prevention with the different key stakeholders
- To be involved with the ProFOUND network



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<http://profound.eu.com/>



Implementing successes

Disseminate and implement best practice interventions

Impact measures

- Cooperation with health professionals
- Synergism between Multimorbidity Frailty and Falls

Challenges to implementation

- Translation and harmonisation of the documents!
- Patient Empowerment
- Next step sustainability

Social Media activities

Stakeholder meeting

Budapest Lukács Klub - 24 April 2015

ProFOUND Cascade Training Budapest, Hungary - 27- 31 August 2015

OEP Trainings Budapest

Hungary - 27-28 February 2016, 12-13 March 2016

Fall and frailty risk analysis and assessment + OTAGO Program

1st Hungarian Falls Prevention Conference (October 2016)

Social Media Activities

Don't Fall Don't Break page 697 like (from 29 February 2012)



...Age and Care...

closed group, 36 members (from 14 November 2014)



Ageing

public group, 406 members (from 18 April 2014)



Otago - ProFOUND - Cascade

closed group, 279 members (from 30 August 2015)



Stakeholder meeting

Budapest Lukács Klub - 24 April 2015

"Falls are significant public health problem"

ProFOUND and EuroSafe

ProFOUND aims to influence policy and to increase awareness of falls and innovative prevention programs amongst all sectors and organizations that work with older people.



1239 people reached on FB Don't Fall Don't Break

National Action for Health Ageing through Falls Prevention - Wim Rogmans (EuroSafe)

Resource Repository - relevant stakeholders and their potential role

ProFOUND Cascade Training Budapest / Successes

Hungary - 27-31 August 2015



OEP Trainings Budapest Budapest

Hungary - 27-28 February 2016, 12-13 March 2016



Preparing the meetings

Challenges to implementation

Translation

Harmonization

Sustainability

Don't Fall Don't Break Program

- for 2 years Linda Edwards Memorial Award

Prestigious International Osteoporosis Foundation award recognizes the outstanding work of the Hungarian Osteoporosis Patient Association, one of 232 IOF member organizations worldwide

INTERNATIONAL OSTEOPOROSIS FOUNDATION

Implementation newer OEP trainings - 3 / years

1st Hungarian Falls Prevention Conference (October 2016)

Fall and frailty risk analysis and assessment OTUG - 1000 people

Implementation of OTAGO Program - 200 people

Implementing Success

Later Life Training OTAGO Exercise Programme (OEP) in Spain

The training course and qualification, developed by Later Life Training (LLT), for physiotherapists to be a Cascade Trainer (CT) of the OTAGO Exercise Programme (OEP) Leader courses was implemented in Spain.

Two Cascade Trainer courses were taught in Spain, coordinated by Investén-isciii and Fundació Salut i Envel·liment UAB, with a total of 22 participants. One of them took place in Barcelona and the second in Madrid. We have agreed to distribute regions between both centres to reach at least one CT in all Spanish regions.

The final objective was to roll out the OEP training in Spain by focusing on healthcare disciplines which are related to elderly care and falls prevention: mainly nursing professionals (most of them part of the Best Practice Spotlight Organizations® (BPSO®) Program involved in the implementation of best practice guidelines for falls prevention), and physical therapists, among others.

During 2015 and the beginning of 2016, the 12 CTs trained in Madrid have trained 79 healthcare professionals as OEP Leaders in 8 healthcare settings from 7 regions.

Also the regional Physical Therapists Associations in Spain have planned to offer one OEP Leader training course in each Spanish region.



Organization and coordination of Cascade Training Otago Exercise Programme (OEP) training (12 Madrid + 10 Barcelona)



Contribution to translation of OEP Handbook and other related materials



Organization and coordination of Otago Exercise Programme (OEP) Leader courses (8 healthcare settings)

was to promote the multidisciplinary, which is not equally implemented in all healthcare settings at a national level since the Spanish National Health System is decentralised in regions. For example, there are some hospitals or outpatient services that enhance early mobilization related to falls prevention, and this is provided by multidisciplinary teams. Finally, the current challenge is to be able to Integrate OEP in the healthcare system clinical daily practice.

Impact Measures

22 Cascade Trainers have been trained in Spain. 79 healthcare professionals from 8 hospitals have been trained as OTAGO Exercise Programme (OEP) Leaders. These hospitals are implementing falls prevention guidelines and their participation in OEP courses will help to promote training of older people. Most hospitals are working in collaboration with primary care. All materials of Cascade Training have been translated in collaboration with Fundació Salut i Envel·liment UAB.

Next steps and Sustainability

Each of the Cascade Trainers selected comes from a different region in Spain, allowing decentralization of courses, therefore they can be replicated nationally. In the case of the courses organized by Madrid (Investén-isciii), the institutions selected for organizing the OEP courses are centers which are implementing best practice guidelines related to falls prevention in the elderly in a national program (BPSO® Spain), and are able to implement OEP programs to patients. The healthcare professionals selected have been multidisciplinary teams: physiotherapists, nurses and physicians that provide education to patients in special services, such as rehabilitation, other specialized care, or primary care.

Challenges to implementation

The main challenge to implement the Cascade Trainer of OTAGO Exercise Programme (OEP) Leader courses was to translate all the material into Spanish and be able to find students who speak English, since the training course was in English. Another challenge



The osteoporotic fracture prevention programme in rural areas (OFRA)

Kampe K, Kircheisen H, Meyer-Lentl C, Becker C Rapp K,
Robert-Bosch Krankenhaus Stuttgart, Klinik für Geriatrie Rehabilitation



Background

The vast majority of fragility fractures is due to falls and low bone mass.

Objectives

The aim of OFRA is to enhance safe mobility of community-dwellers living in rural areas.

Supporter of the programme:

A health care fund (SVLFG) in cooperation with a volunteer organisation of women (LandFrauenverband), the German Gymnastics Association (Deutscher Turner-Bund) and the Robert-Bosch-Hospital, Stuttgart.

Programme

Actively addressing selected members and motivate them to

- Participate in an OFRA-mobility and falls prevention course
- Realise a bone health examination
- Receive a consultation about safety and tripping hazards around the house and farm

Study Design

Cluster-randomised trial (cluster units: administrative districts) in 5 federal states in Germany

Target Population

- community-living women and men aged 70- <85 years with a fragility fracture
- community-living women aged 75- <80 years ... who are insured at the SVLFG.

Within two years more than 10,000 policy holders will be directly addressed by the health insurance; the policy holders of the remaining administrative districts serve as control group.

Evaluation

Outcome measures:

Osteoporotic fractures (primary), participation in an OFRA-mobility and falls prevention course, realisation of a bone health examination (secondary)

Preliminary findings

- Within 1 year about 700 trained exercise instructors
- Within 4 months over 200 registered courses
- Over 40% of the policy holders interested in the realisation of a bone health examination and over 50% of the not-active policy holders interested in participating in an OFRA-mobility and falls prevention course



Figure 1: OFRA-Logo (German „TriXsicher durchs Leben“)



Figure 2: Website „trixsicher.org“



Figure 3: Administrative districts of intervention group (orange)



Produktionsdesign: Robert-Bosch-Krankenhaus, © Robert-Bosch-Krankenhaus

Implementing Success

Through its involvement in the ProFOUND fall prevention campaigns and the Cascade Training, TEISTE has gained national endorsement for its contribution to the awareness on fall prevention, especially amongst health and social care practitioners.

TEISTE has actively participated in annual joint meetings with the ProFOUND consortium, E-NoFalls and EIP-AHA-A2 and contributed to key conferences with stands, scientific presentations and workshops:

- E-Health week in Athens 2014;
- The annual Congresses of the Panhellenic Physiotherapy Association (PSF) Athens 2014, 2015, 2016;
- 3rd Hellenic Forum for Science Technology and Innovation organized by NCSR "D" 2015;
- 14th National Congress of the Hellenic Society of Physical Rehabilitation Medicine EEFAP 2016.

OEP Leaders have also presented ProFOUND actions regionally and nationally which has triggered dissemination activities, campaigning, and events across Greece, including World Day of Physiotherapy 2015.

A scientific department of geriatrics was also established in the PSF and press releases and dissemination events were delivered in collaboration with Demokritos a ProFOUND consortium member.

TEISTE has shared Greek language best practice resources on the ProFOUND website, including: leaflets, booklets and videos on evidence based strength and balance exercises. A large number of the best practice resources have been translated into Greek, which has assisted Greek physiotherapist in organising falls awareness events.

The ProFOUND Falls Prevention App with the different scenarios has been introduced to Greek Physiotherapists during workshops and through Panhellenic Physiotherapy Association and its website.

Many of the Greek CTEs have contributed to falls prevention awareness events and campaigning.

Many Greek users access the resources on falls prevention, news, social media, videos, learnt about clinical guidelines, best practice and online learning regarding falls prevention. TEISTE with Demokritos have collated a Directory of EU-Level stakeholders for Fall Prevention based in Greece.



Impact Measures

TEISTE has delivered 3 OEP training courses in English and 1 in Greek in Lamia, 1 in Athens since the original CT training in June 2014; has certified over 50 OEP Leaders.

ProFOUND online surveys on the impact of training have been translated and distributed to the Greek instructors

Greek translated material has been used for training instructors, uploaded into the website and used for close to 50 local falls awareness events, many radio interviews and press releases.



Challenges to Implementation

The biggest challenges for engaging with stakeholders have been the limited number of staff and resources especially after the Greek financial crisis. More time and resources were needed for the meetings with policy makers, politicians etc.

Specific data and results on falls rates, and socio-economic impact still seems too early to gather. Nevertheless organizing the process of data recording in the emergency departments is important.

There is a language barrier for some people accessing the website as it is in English so finding Greek resources is not always easy.

The Directory of Stakeholders needs to be regularly updated to ensure continued validity.

Getting feedback from surveys and questionnaires on impact is very difficult

Next Steps Sustainability

A policy of contribution to payment for OEP Leaders attending training and older people attending exercise classes has been adopted.

Training further exercise instructors in other Greek cities than Lamia and TEISTE premises has commenced.

Our target is that Greek OEP Leaders and Greek NGOs from across Greece, will work to a common set of goals and best practice approaches for falls prevention across Greece.

Delivery of a session at the PSF Conference 2016



Implementing Success

Falls awareness campaign: First we went on a fieldtrip to London in June 2013 to get knowledge and inspiration. Then we asked other regions in Sweden to participate. We started a local webpage and made a plan for communication. We produced a report on first years success and spread it widely, after that we produced a manual on 'how to deliver campaigns'. We engaged important stakeholders in our region as well to authorities at a national level. In the first year we had one other region onboard, by the third year we had developed our campaign to a commitment at a national level and in 2015, 11 regions of a total 21 delivered regional campaigns coordinated nationally.

Cascade-training: Västerbotten trained a total of 10 cascade trainers whom in turn have trained 38 new OEP leaders. These have started both individual training and OEP groups with older people. They have been extremely active and for example held balance and strength test in one of the county's largest communities during falls awareness week and referring people to start exercise when there was a need.



Impact Measures

11 from a total of 21 regions participated in the 2015 falls awareness campaign. The campaigns were a huge success with media coverage locally, regionally and nationally. The Government has given the National Board an assignment to increase awareness of falls and fall injuries to personnel within the health-care, social care, as well as to the elderly. It is difficult to say whether the government's decision to focus specifically on fall prevention has had an impact outside of the widespread media coverage during campaigns. We believe that the strong media coverage, senior organisation commitment and regional involvement has played a role in making that decision. A total of 10 new Cascade-trainers have trained 38 new OEP leaders. Some of those OEP leaders have started both individual training and group exercise for older people.

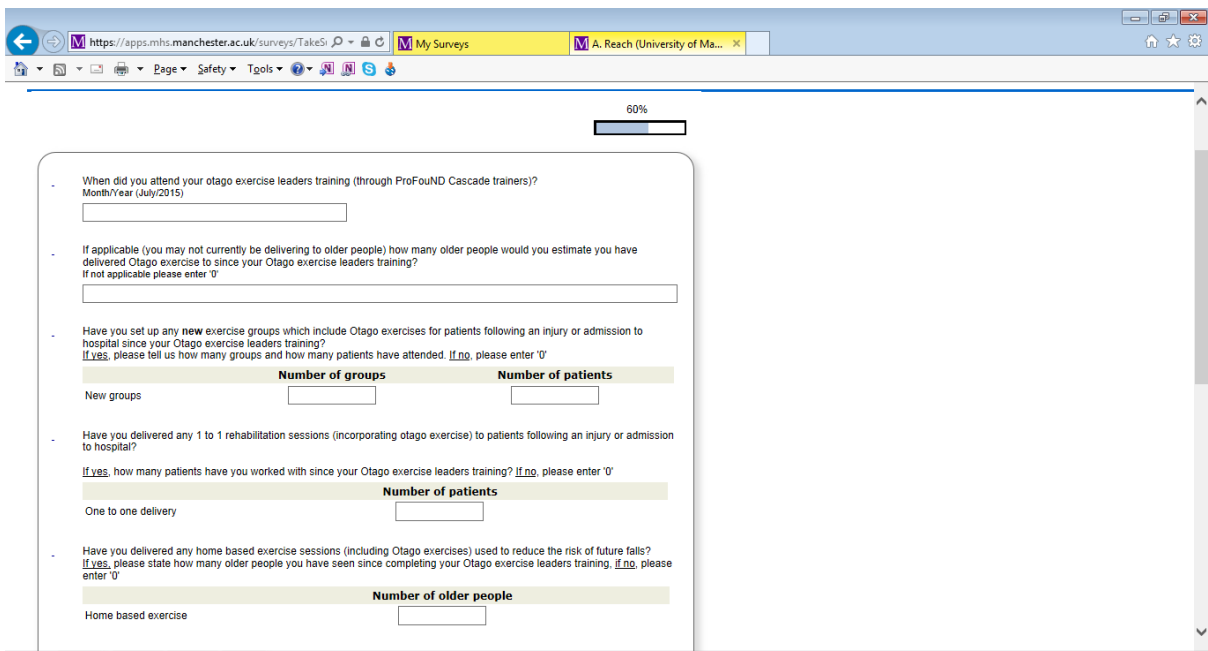
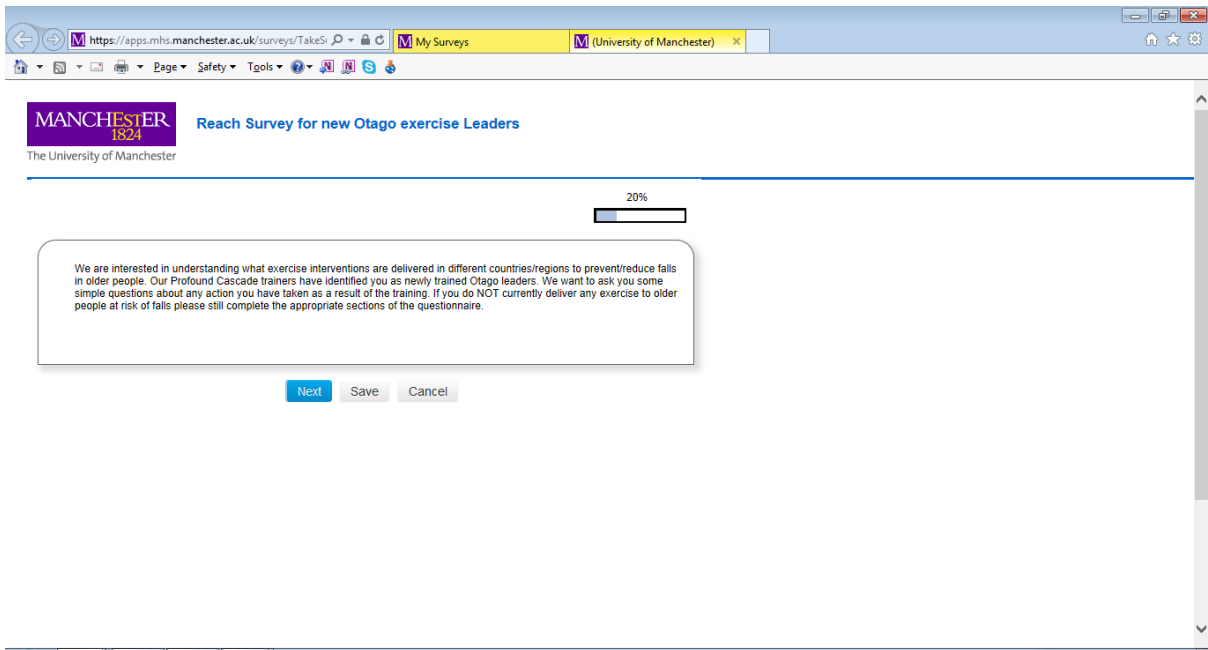
Challenges to Implementation

During the project period the government has changed into a new constellation which has influenced the direction significantly. The initial plan was to implement or roll out Otago all over Sweden but this has changed and instead will focus on a smaller geographical area and approach. Important stakeholders at national level who were very involved in the project have been replaced by those with less insight into ProFOUND and the urgency of falls prevention. When it comes to implementing a spread of OEP this has been complicated by the different regulation and control systems in different countries. Sweden has no tradition of charging for training to this group "frail elderly" which will be necessary if the programme is to be spread sufficiently.

Next Steps Sustainability

Otago: Meetings have been held between the Region Västerbotten - R&D Welfare, county council, and educational associations for adults. There is an interest for them to become a possible partners in educating OEP leaders in the civil society for greater access for OEP leaders and OEP groups in Västerbotten. Continued dialogue will take place during spring of 2016. Falls awareness campaign: An interface on a digital platform has been set up via the Swedish Association of Local Authorities and Regions (SALAR) so that the regions who are planning to arrange campaigns next year have a network for dialogue and can collaborate on upcoming themes and materials. Decisions have been made in Västerbotten to keep the campaign as in previous years with regional coordination.

Appendix 4: Reach questionnaire for Otago exercise leaders (these questions were also added to the Cascade questionnaire) in English, Greek and German.



60%

A. Προσβασιμότητα A. Reach

Πότε εκπαιδεύτηκετε στο Πρόγραμμα Άσκησης Otago (με Cascade εκπαιδευτές του ProFOUND);
Μήνας/Έτος (Ιούλιος/2015)?

When did you attend your otago exercise leaders training (through ProFOUND Cascade trainers)? Month/Year (July/2015)

Σε περίπτωση που ισχύει (μπορεί αυτή τη στιγμή να μην παραδίδεται σε ηλικιωμένους) σε πόσα άτομα μεγαλύτερης ηλικίας βά εκτιμούσατε ότι εφαρμόσατε το ασκησιολόγιο Otago σαν εκπαιδευμένοι στο ασκησιολόγιο Otago;
Σε περίπτωση που δεν ισχύει παρακαλώ εισάγετε το '0'
If applicable (you may not currently be delivering to older people) how many older people would you estimate you have delivered Otago exercise to since your Otago exercise leaders training? If not applicable please enter '0'

Έχετε δημιουργήσει οποιαδήποτε νέες ομάδες (που να χρησιμοποιούν ασκήσεις Otago) για ασθενείς μετά από τραυματισμό ή εισαγωγή στο νοσοκομείο από τότε που εκπαιδεύτηκετε στο ασκησιολόγιο Otago;

Εάν ναι, παρακαλούμε πείτε μας πόσες ομάδες και με πόσους συμμετέχοντες ασθενείς.
Εάν όχι, παρακαλούμε εισάγετε το '0'
Have you set up any new exercise groups which include Otago exercises for patients following an injury or admission to hospital since your Otago exercise leaders training? If yes, please tell us how many groups and how many patients have attended. If no, please enter '0'

Αριθμός των ομάδων **Αριθμός ασθενών**

60%

A. Reichweite

Wann fand Ihre Schulung zum/ zur Otago-ÜbungsleiterIn (geleitet von ProFOUND-Kaskadentrainern) statt?

Monat/ Jahr (Juli/ 2015)
When did you attend your otago exercise leaders training (through ProFOUND Cascade trainers)? Month/Year (July/2015)

Falls zutreffend (möglichlicherweise führen Sie derzeit kein Training für ältere Menschen durch), mit wie vielen Älteren haben Sie seit der Otago-Schulung die Otago-Übungen durchgeführt?
Falls nicht zutreffend, geben Sie bitte ,0' an.
If applicable (you may not currently be delivering to older people) how many older people would you estimate you have delivered Otago exercise to since your Otago exercise leaders training? If not applicable please enter '0'

Haben Sie seit der Schulung neue Gruppen (welche Otago-Übungen beinhaltet) für Patienten nach einer Verletzung oder Aufnahme in ein Krankenhaus gegründet?
Falls ja, geben Sie bitte an wie viele Gruppen und wie viele Patienten teilgenommen haben.
Falls nein, geben Sie bitte ,0' an.

Have you set up any new exercise groups which include Otago exercises for patients following an injury or admission to hospital since your Otago exercise leaders training? If yes, please tell us how many groups and how many patients have attended. If no, please enter '0'

Anzahl der Patienten **Anzahl der Gruppen**

Neue Gruppen

Haben Sie Einzeltherapie (welche Otago-Übungen beinhaltet) mit Älteren nach einer Verletzung oder Aufnahme in ein Krankenhaus durchgeführt?

Appendix 5: Example of data collection sheet used by Greek Otago exercise leader and of data base including functional assessments.

DEMOGRAPHICS & DATA OF FALLS RECORDING

Name: REMOVED

Code

1. Sex: (Female)
2. Age in Years: ...77.. Years old
3. Height (cm).....155.....
4. Weight.....70....(Kgrs).....
5. Occupation.....Pensioner.....
6. Educational Level.....Elementary School.....
7. Place of residence.....REMOVED FOR CONFIDENTIALITY
.....
8. Living ConditionsWith her husband.....
9. Activities.....High Level.....
10. Medical History.....TKA (both knees), Osteoporosis, Total hysterectomy, pulmonary fibrosis.....
11. Visits to GP during Last Month.....Yes.....
12. MobilityIndependent.....
13. Medication.....More than 4.....
14. SmokingNo
15. InsuranceNHI.....

FALLS

16. **Sort of Fall: From:** Her Height and Staircase

17. **Place of Fall:** IN and OUT of HOUSE

Place of Fall in Details:Pavement Twice (first along with fracture) and Stairs – 16/2/2015 fell in bedroom – 30/4/2015 on pavement->skin abrasions.....

18. **Consequences:** a) Fracture, b) Dizziness

Case Upshot:

- a) Treatment at Home,
- b) Referral to a Hospital for Further Assessment and then Back Home (for fracture)

Follow Up of Fallers in Municipality of Fildelfeia - Chalkidona, GREECE by Apostolis Emmanouilidis PT, OEP Leader (Autosaved).xlsx - Microsoft Excel

	B	C	D	E	F	G	H	I	J
	Born	Sex	Date of Joining the Group	Points in FES-I	4-Stage Balance Test	Time Completed TUG Test	Date of First Testing	Date of Last Testing	Date of Fall Prior to Joining
2	1953	Female	23/01/2014	17	1Leg Stand Failed	6.95 secs	14/09/2015		Not mention
3	1941	Male	13/03/2013	24	1Leg Stand Failed	13.1 secs	14/09/2015		Once early of 2
4	1954	Female	17/03/2014	16	Successfully Completed	8.7 secs	14/09/2015		Not mention
5	1937	Female	16/05/2012	42	Successfully Completed	8 secs	14/09/2015		Not mention
6	1941	Female	02/10/2014	26	Successfully Completed	8.3 secs	14/09/2015		Fainting episodes 200
7	1933	Female	30/10/2014	16	1Leg Stand Failed	6.7 secs	14/09/2015		Not mention
8	1946	Male	21/03/2012	17	Successfully Completed	6.4 secs	14/09/2015		Not mention
9	1930	Female	31/03/2014	27	Tandem and 1Leg Stand Failed	14.7 secs	14/09/2015		May 2012, Februa
10	1947	Female	10/04/2013	21	Successfully Completed	8.3 secs	18/09/2015		2012
11	1942	Female	25/11/2013	16	Successfully Completed	8.3 secs	18/09/2015		1988
12	1947	Female	16/10/2014	17	Successfully Completed	9.6 secs	22/09/2015		Not mention
13	1945	Female	25/11/2013						2010
14	1947	Female	04/11/2013						Early of 2013. Not rememb
15	1945	Female	24/11/2014						2013
16	1952	Female	18/09/2014						2003
17	1931	Female	28/03/2012						
18	1947	Female	28/09/2015	17	Successfully Completed	7.3	23/09/2015		Not mention
19	1942	Female	07/11/2013	29	Successfully Completed	6.6 secs	24/09/2015		2007
20	1949	Female	15/01/2015	34	Successfully Completed	9.2 secs	25/09/2015		Not mention
21	1943	Female	17/10/2013	18	1Leg Stand Failed	8.0 secs	28/09/2015		Not mention
22	1939	Female	07/11/2013	17	Successfully Completed	9.6 secs	28/09/2015		2013, while was r
23									
24									
25									

Main Group Ag. Marina's Group KIFI's Group Chalkidona's Group

Ready 92%