

# ProFOUND

Prevention of Falls Network for Dissemination

## Falls prevention: Evidence into Practice

European Seminar Glasgow, 19 November 2014

In association with



As a Pre-  
conference at the



## Seminar Introduction

In collaboration with the Prevention of Falls Network for Dissemination (ProFouND) and EuroSafe, the EUPHA-Injury Section is organising a European seminar on effective interventions for falls prevention among older people. The seminar will be held as a satellite immediately preceding the EUPHA annual Conference in Glasgow on the 19<sup>th</sup> of November, i.e. the day before the opening of the main EUPHA-conference.

### Scope and purpose

Each year, one in three adults aged 65 and older falls, mostly at home. Falls often lead to severe injury and long-term physical disability, increased dependency and reduction in quality of life. The associated costs of treatment and the 'cost' to the individual's engagement in an active and fulfilling life are considerable.

Clear evidence now exists that most falls among older people are associated with identifiable and modifiable risk factors, i.e. a combination of age and disease-related conditions and the individual's interaction with their social and physical environment. There is also ample evidence to show that interventions, particularly those promoting physical activity and strength and balance training, are effective and can significantly reduce the burden of the rising epidemic of fall injuries in an ageing Europe.

ProFouND was initiated to overcome limited awareness and usage of innovative solutions to prevent falls and make these available throughout the Europe. ProFouND develops and disseminates customised best practice guidance and tools for a wide range of professionals. ProFouND also provides a cascade training programme using face to face and e-learning approaches to create a cadre of accredited exercise trainers across Europe to implement exercise regimens that have been proven to reduce falls amongst older people.

This European Seminar will give participants the knowledge and skills needed to operate from an evidence-based approach to falls and fall-related injury prevention among seniors. Participants will also learn about current effective programs, and the reliability and validity of existing resources and tools for screening and assessing fall risk. The seminar will provide insight into how to involve seniors as partners in the development of effective strategies and interventions.

### Who should attend?

Anyone wishing to play a part in working together to implement falls prevention interventions at local and/or national level are encouraged to participate in this pre-conference satellite meeting, including those working in:

- government and public institutions;
- health care, community care and active lifestyle promotion;
- housing, urban planning, transportation and education;
- academic institutions, institutes of public health and research institutions;
- private sector organisations, e.g. insurance businesses, leisure and hospitality industry, care services and those working in product design and manufacturing;
- non-governmental organisations promoting health and consumer safety or advocating for older people
- older people themselves.

### **About ProFouND**

ProFouND is an EC-funded Thematic Network. It works closely with the EIP-AHA to bring about the dissemination and implementation of best practice in falls prevention across Europe, using novel ICT solutions. ProFouND brings together 21 partners from 12 countries and with associate members from 10 countries. ProFouND intends to bring together relevant stakeholders to consolidate roadmaps and guidelines regarding fall prevention and facilitate the communication between solution/service providers and key stakeholders (private and voluntary organisations, public authorities) at national, regional or local level to ensure effective implementation and reach.

### **About EUPHA**

The European Public Health Association (EUPHA) aims to contribute to the improvement of public health in Europe. The 7th European Public Health Conference offers a unique opportunity for exchanging information and for debate among researchers, policy makers, and practitioners in the field of public health.

The EUPHA Injury Section aims to: a) increase awareness of injury and violence prevention and safety promotion in the broader public health community, b) increase the visibility of issues related to injury and violence prevention beyond the community of injury researchers, c) strengthen the links between researchers, policy makers and practitioners; d) support the dissemination of research results and their implementation into practice.

### **About EuroSafe**

The European Association for Injury Prevention and Safety Promotion (EuroSafe) is a non-governmental organisation, representing organisations and individuals working in one or more sectors within the field of injury prevention and safety promotion. EuroSafe is the lead organisation for the exchange good practices in injury research and prevention in Europe through its networking programmes, publications and the series of bi-annual European Injury Conferences. It is in official relationship with the World Health Organization's programme for violence and injury prevention and disability.

## Seminar Programme

**08:00-09:00 Registration**

**Morning session (9:00-12:30) The evidence base**

***Preventing Falls and Injuries - What works and for whom, Individualised Approaches?***

*Chair:* Dawn Skelton, Glasgow Caledonian University, United Kingdom

***[Session will focus on published Cochrane Reviews and other Systematic Reviews of Evidence as for the numbers of fallers and consequences of injuries in these settings. Figures across Europe]***

09:00-09:15	Introduction to Programme and ProFouND	<b>Dawn Skelton</b> Glasgow Caledonian University, UK
09:15-09:45	What works in Community Dwelling Older People	<b>Julie Bruce</b> University of Warwick, UK
09:45-10:00	What works in Care Home Settings	<b>Lillemor Lundin-Olsson</b> Umeå University, SE
10:00-10:15	What works in Hospital Settings	<b>David Oliver</b> President Elect British Geriatrics Society and Senior Visiting Fellow, the King's Fund, UK
10:15-10:30	Panel Discussion	

**10:30-11:00 Refreshments**

***Preventing Falls and Injuries - What drives change?***

*Chair:* Johan Lund, President of EUPHA section on Injury Prevention, Norway

***[Session will focus on the need for a population approach, evidence on cost benefits of prevention, and opportunities for national and local level programmes]***

11:00-11:20	Population approaches or individual approaches? Should we concentrate on high risk patients or a population shift in risk?	<b>Kilian Rapp</b> Robert Bosch Gesellschaft für medizinische Forschung, Stuttgart, GE
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11:20-11:40	Costs benefit and cost-effectiveness of falls prevention interventions	<b>Tischa van der Cammen</b> Erasmus University Medical Center Rotterdam and Delft University of Technology, NL
11:40-12:00	Showcasing examples of the impact of National and Local Policies	<b>Ann Murray</b> Falls Programme Manager Framework for Adult Rehabilitation Scotland, UK
12:00-12:30	Panel Discussion	

**12:30-13:30 Lunch break**

**Afternoon session (13:30-17:00) Effective Implementation**

***Examples of effective falls prevention interventions in different settings***

*Chair:* Kilian Rapp, Robert-Bosch-Krankenhaus Geriatric Rehabilitation Clinic, Germany

***[Session will focus on evaluation of evidence based exercise interventions through low risk populations, multifactorial interventions through higher risk populations and the involvement of insurance companies as prime beneficiaries of reduction in fall incidences]***

13:30-13:50	Delivering strength and balance exercise through Primary Care: The ProAct65+ experience	<b>Denise Kendrick,</b> Division of Primary Care, University of Nottingham, UK
13:50-14:10	Setting up an effective falls prevention assessment and interventions in nursing homes – experiences in the Region Languedoc-Roussillon	<b>Hubert Blain,</b> Centre de Prévention et de Traitement des Maladies du Vieillessement, Montpellier, FR.
14:10-14:30	Role of insurance companies in fall prevention programmes	<b>Erich Koch,</b> International Association of Mutual Benefit Societies, Brussels/ SVLFG, DE
14:30-15:00	Panel Discussion	

**15:00 - 15:30 Refreshments**

**Practical Ideas for action**

*Chair:* Wim Rogmans, EuroSafe, Netherlands

**[Session will focus on some very practical ideas for action, including introducing falls awareness events nationally and locally, education of older people and professionals in the need for strength and balance for primary prevention of falls, and how we use the cost and evidence arguments to influence change]**

15:30-15:50	Falls Awareness Campaigning	<b>Åsa Bygdeson,</b> FoU Välfärd Region, Västerbotten, SE
15:50-16:10	Strength and Balance awareness in practice and Cascade Trainers for effective implementation	<b>Dawn Skelton,</b> Glasgow Caledonian University, UK
16:10-16:30	Getting policies changed, using cost and evidence in the argument	<b>Johan Lund,</b> Norwegian Safety Forum, NO
16:30-16:50	Panel Discussion	
16:50-17:00	<i>Final conclusions and close of the seminar</i>	<b>Wim Rogmans,</b> EuroSafe, NL

## Speaker Abstracts

### Introduction to Programme and ProFouND



**Dawn A Skelton**

***Professor of Ageing and Health, Centre for Living, Institute of Allied Health Research, Glasgow Caledonian University, UK***

Falls are a major cause of injuries, long-term disability, and restricted quality of life among older people. Falls account for 29% of fatal injuries amongst older people (60+) and this percentage increases sharply after the age of 70. Each year, one in three adults aged 65 and older falls, mostly at home. Falls often lead to activity avoidance, long-term physical disability (e.g. loss of mobility), dependency and reduction in quality of life. The associated costs of treatment, but perhaps more importantly, the 'cost' to the individual's engagement in an active and fulfilling life, is considerable.

Incontrovertible evidence now exists that most falls among older people are associated with identifiable and modifiable risk factors. Most falls and resulting injuries among older adults are shown to result from a combination of age related physical and mental health declines and disease-related conditions, and the individual's altered interaction with their social and physical environment. It is also known that risk is greatly increased for those with multiple risk factors.

There is good evidence to show that interventions, particularly those promoting physical activity and strength and balance training, are effective. This combined ProFouND/EUPHA seminar will explore the evidence base, give practical solutions to implementation of preventative programmes and consider the culture and environment that supports effective provision of falls prevention solutions.

The Prevention of **Falls** Network for Dissemination, ProFouND, aims to contribute to the achievement of the European Innovation Partnership on Active and Healthy Ageing (EIP AHA) objective, to add an average of two active healthy life years to the lives of European citizens by 2020, by working in the area of falls prevention. ProFouND is a Thematic Network with 21 partners from 12 countries and associate members from a further 10 countries, who act to further disseminate best practice in falls prevention.

Our objective is to embed evidence based fall prevention programmes for older people at risk of falls, using novel ICT solutions in at least 10 countries/15 regions by 2015, thus to reduce falls incidence in those regions by 2020. We work with multi-sectorial stakeholders to achieve these objectives, using internet and ICT solutions to facilitate widespread implementation.

ProFouND have collated a free access resources library, created a novel online falls prevention tool (PFPAApp) to distribute tailored, customized and personalized leaflets for older people, produced best practice guidance for different settings and contexts and translated home exercise strength and balance

booklets into multiple languages. We also provide a cascade model training programme using face to face and e-learning approaches to create a cadre of accredited exercise trainers across Europe, to implement exercise regimens that have been proven to reduce falls amongst older people. We work closely with E NO-FALLS to create an "ICT for Falls Network " to engage with industry players, to promote development and adoption of novel ICT. ProFouND also works liaises with EU level stakeholders to ensure sustained change in terms of education, awareness raising, attempting a step change in understanding and behaviour around self-management and treatment of falls and injuries.

### **Preventing Falls and Injuries - What works in Community Dwelling Older People?**



**Julie Bruce**

***Principal Research Fellow, University of Warwick, UK***

This contribution will present an overview of the evidence of the effectiveness of falls prevention interventions designed to reduce the incidence of falls and fracture amongst older people living in the community.

The best quality evidence for the efficacy of interventions to prevent falling should be based on large, well-designed randomised controlled trials (RCTs) or from meta-analyses. This presentation will, therefore, concentrate on findings reported within the updated Cochrane systematic review (Gillespie *et al.* 2012), which included 159 randomised controlled trials with 79,193 participants. Primary outcomes were rate of falls and risk of falling; secondary outcomes included one or more fall-related fractures. Sub-group analyses by type of intervention will be presented for as a basis for discussion (e.g. exercise, multifactorial interventions, oral medication supplementation or modification, home safety, vision, podiatry and educational interventions).

The quality of evidence will also be considered, with reference to risk of bias and statistical heterogeneity. In addition, a brief overview of a large HTA-funded UK trial currently ongoing will be presented: the Prevention of Falls Injury Trial (PreFIT). The PreFIT trial is designed to compare three interventions (advice only, exercise versus multifactorial falls assessment) to prevent falls and fractures in community-dwelling older adults.



## What works in care home settings?



Lillemor Lundin Olsson

***Professor at Department of Community Medicine and Rehabilitation, Umeå University, Umeå, Sweden***

The fall and fracture rate in residential care facilities and nursing homes are reported to be three times the rate in community-dwelling older people. The incidence of falls is in particular a major problem in settings with a large percentage of residents living with dementia and less significant among residents with severe mobility disability. In contrast to falls among older people in the community, where the majority of falls occur during walking, up to half of the falls in care homes occur during changes of position between sitting/lying and standing. There may be certain peaks of falls around the clock in specific types of settings. Furthermore, many falls take place during the night and a very risky activity is visiting the lavatory. The majority of falls are caused by combinations of risk factors such as mobility difficulties and impaired vision. Acute diseases and drug side effects are important precipitating factors for falls.

Currently, the overall evidence for a specific type of intervention (single, multiple, and multifactorial) is inconsistent. Examples of single interventions are exercise, vitamin D supplementation, and medication review. Meta-analyses of exercise as a single intervention, including various types of exercise and participants with various levels of mobility ability, give a heterogeneous result. Subgroup analyses suggest that residents with greater disability might be less likely to benefit from exercise interventions and maybe increase their risk of falling, but residents with a higher level of mobility ability might reduce their risk of falling. Vitamin D supplementation reduces the number of falls, probably because residents have low vitamin D levels. Results of medication review are conflicting.

Multiple interventions (the same combination of single interventions delivered to all participants) seem to be ineffective to reduce falls in care homes. Multi-component interventions that are based on individual risk assessments (=multifactorial interventions) may be effective but results of meta-analyses are heterogeneous. It has previously been suggested that comprehensive multifactorial interventions provided by a multidisciplinary team effectively reduces both the risk and rate of falling. This notion is reinforced by a large translational multifactorial study that reduced femoral fractures. The intervention was composed of exercise twice a week (doubled the dose of a previous study with no effect on femoral fractures) in combination with regular documentation of falls and feedback, individually tailored environmental adaptations (reduce person-environment mismatches), medication review, vitamin D supplementation, and education.

Despite a number of studies in care homes, meta-analyses show that there is no specific intervention that is outstanding in reducing falls and injuries. The heterogeneity of the results are possibly associated with differences in interventions and participants' levels of mobility ability. When a preventive programme for falls and injuries is being designed, the circumstances of falls ought to be mapped out by the specific

setting. Areas of particular interest are the residents' level of mobility ability, activities at the time of the fall, falls at night and medication. Based on current knowledge, a comprehensive tailored intervention including specific physical exercises, such as rising from sitting to standing or walking to the lavatory, seems to be a good choice.

### **Preventing Falls in Hospital**



**David Oliver**

#### ***President Elect, British Geriatrics Society, UK***

Population ageing has led to a rising overall number of older people living with frailty, dementia, mobility and sensory impairment, multiple long term conditions and multiple medications. In developed nations, the most rapid rise has been in those aged over 80. Despite major efforts to invest in prevention, wellbeing and support for people to remain at home, the changing demographic has led to rising numbers of urgent admissions to hospital. Crucially, the case mix of modern hospitals is now very different from what it was in the last century. Many admissions and bed days across all adult specialities are taken up by older people with a combination of frailty, dementia or long term conditions, social vulnerability and then an acute illness which has triggered the admission. And falls account for a high proportion of ambulance call outs, Emergency department attendances and hospital bed days. So that the inpatient population generally has several risk factors for falls, including age itself, then compounded by the unfamiliar and not especially "age friendly" acute hospital environment.

It is therefore unsurprising that falls are so common in hospital settings. Reported rates in trials vary from 1.3 to 8.9 per 1000 bed days. The English National Patient Safety Agency central reporting system describes nearly 300,000 falls per annum in English Hospitals – around 1 in 3 of all reported patient safety incidents. Falls in hospitalised patients can lead to injury, loss of function and increased length of stay, worrying for patients' families and for clinical teams. They are also a "red flag" an indication of underlying medical problems and risk factors so that each fall presents an opportunity to review the patient and reduce the risk of further harms. And it is often the very same patients with falls who are at risk of other harms such as preventable Delirium, or Immobility.

There is enough evidence from clinical trials and systematic reviews by now for us to be confident that multi-factorial approaches to fall prevention in hospital can reduce both Falls Rate and Risk of Falling by around 30%; though the evidence for any number of "standalone" single interventions is less clear. Components of multifactorial interventions include variously.

- Identifying common falls risk factors on all admitted patients
- A plan to reverse or modify risks associated with each
- Education and training for staff, relatives and patients
- Attention to physical environment and equipment
- Post fall reassessment and plans to prevent the next fall
- Specialised assessment and care (e.g. from geriatricians)

Moving beyond the narrow confines of controlled clinical trials, all hospitals have a keen local interest in reducing falls rates in their own institutions. And so organisational support “from board to ward” is crucial, alongside real time use of data to feedback on performance and a relentless quality improvement approach of “Plan, Do, Study, Act” cycles and sustainable long term falls prevention programmes rather than short term pilots. It is also likely that focussing on patients with frailty and impaired cognition or mobility will help reduce a range of hospital associated safety incidents and harms.

### **Prevention of falls and injuries - Population approaches or individual approaches?**



**Kilian Rapp**

***Department of Clinical Gerontology, Robert-Bosch-Hospital, Stuttgart, Germany***

The risk of many fractures, like femoral or vertebral fractures, increases exponentially with increasing age. Due to the growing number of old and very old adults in industrialized countries, the absolute number of fractures is expected to rise substantially over the next decades. It is therefore a relevant question if existing measures are able to diminish, to level off or to reverse the expected increase of falls and fractures.

The approach to reduce falls and fractures are usually specific measures focused on high risk groups like a) fall prevention measures in well-defined target groups or b) pharmacological treatment of people with osteoporosis. However, falls and low bone mass density are problems with an extremely high prevalence in older people and require, therefore, also population-based approaches for effective reach. Both approaches are of high value for the individual.

We will present an estimation of the potential impact of drug treatment or strength and balance training on the absolute number of femoral fractures in the total population.

As an alternative we discuss population-based measures which focus on parameters known to be risk factors of falls when deteriorating. Examples of population-based measures including problems of implementation and evaluation will be presented.

Individual and population-based approaches are complementary. We think both are needed to face the increasing number of falls and fall-related fractures in the future.

### **Cost/benefit and Cost-effectiveness of Falls Prevention Interventions**



**Tischa van der Cammen<sup>1,2</sup> and Ed van Beeck<sup>3</sup>**

**1. Department of Internal Medicine, Section of Geriatric Medicine, Erasmus University Medical Center, Rotterdam & 2. Faculty of Industrial Design Engineering, Delft University of Technology, The Netherlands; 3. Department of Public Health, Erasmus University Medical Center, Rotterdam, The Netherlands.**

The economics of falls prevention have received increasing interest from health policy makers and other stakeholders. In the Netherlands, between 2007–2009, each year 3% of all persons  $\geq 65$  years visited an Emergency Department (ED) due to a fall. Related annual medical costs were estimated at €675 million. Fractures led to 80% (€540 million) of the fall-related healthcare costs. Mean costs per fall were €9370, higher for women than for men, and increased with age. Persons  $\geq 80$  years accounted for 47% of all fall-related ED visits, and 66% of total costs.

High total costs and mean costs per fall show the necessity of implementing effective preventive interventions at a community level. Current evidence shows, in community-dwelling older people, that group and home-based exercise programmes, and home safety interventions reduce rate of falls and risk of falling. Multifactorial assessment and intervention programmes reduce rate of falls and Tai Chi reduces risk of falling. Vitamin D supplementation may be effective in reducing falls in people with low vitamin D levels. This evidence has been translated into practice guidelines on falls prevention.

But in the current health environment, programmes being effective is not sufficient for decisions on reimbursement or coverage. There is growing consensus that policy makers should only stimulate and make available those interventions that offer an added health benefit to patients and come at a reasonable cost in proportion to the health effects. In recent decades, the cost-effectiveness of falls prevention has been studied in several countries. This has shown the potential for cost savings from delivering the intervention to particular subgroups of older people at high risk of falling. A trial of the Otago Exercise



Programme in New Zealand showed cost savings in those aged 80 years and over. In the US savings were also demonstrated for a home safety programme when delivered to the participants with a previous fall, and for a multifactorial intervention for those with four or more of the eight targeted risk factors. A community fall prevention programme in the UK confirmed the excellent economic results in high risk patients. The mean difference in costs between the intervention group and the control group in that study was £-1,551 per patient over 1 year.

However, insight in the most efficient approaches for the general population of community-dwelling elderly is still lacking. This is due to widely varying mathematical methods used, including differences in type of economic evaluation, perspective, time horizon, study design, cost categories included, and outcomes studied. Moreover, the results depend on the type of intervention and how it is applied, on the target population, and on the program adherence by the target population. Falls prevention has a high potential to be cost-effective, and even cost saving, but depending on the target population and the prevention modalities results may differ enormously. For example, studies seem to have overestimated the efficiency of falls prevention in the community by using data from trials in highly selective populations and by assuming far too optimistic programme adherence rates.

### **Showcasing examples of the impact of National and Local Policies**



**Ann Murray**

#### ***Falls Programme Manager, Framework for Adult Rehabilitation Scotland, UK***

Like many other countries in Europe, Scotland has an ageing population. Recent demographic projections suggest that if current trends continue we can expect that by 2033 the number of people who are over 60 in Scotland will increase by 50%.

As our population ages and the proportion with multi-morbidity, frailty and polypharmacy grows, falls among older people are a growing concern.

This presentation will describe the journey Scotland has been on over the last eight years to address the challenge of falls amongst its ageing population, including:

- The strategic direction provided by national policy.
- The national leadership, guidance and funding provided to support the translation of policy in to practice.

- The local response to national policy and improvement drives.
- Reflections on the journey so far.

Scotland has a population of 5.3 million people. Health and social services are devolved matters i.e. issues upon which the Scottish Parliament can make laws.

### **Delivering strength and balance exercise through primary care: The ProAct65+ experience**



**Denise Kendrick**

***Steve Iliffe, Sheena Gawler, Richard Morris, Mark Griffin on behalf of the ProAct65+ team, U***

Regular physical activity in older people reduces falls, hip fractures and all-cause mortality, but physical activity levels are low in this group and intervention studies demonstrate only modest, short-term improvements. An evaluation of two exercise programmes versus usual care on achievement of recommended physical activity targets in older people (150 minutes of moderate to vigorous physical activity (MVPA) per week) will be presented. This pragmatic three arm parallel design cluster RCT set within 43 general practices in London and Nottingham/Derby, recruited older people aged  $\geq 65$  years. Those with acute or unstable medical conditions and those already reaching the recommended MVPA target were excluded. Frequent fallers were also excluded and instead signposted to falls services.

Usual care was compared to two evidence based falls prevention interventions (6 months duration): 1) Weekly class-based exercise (1 hour), led by trained instructors plus home-based exercises (30 mins, 2 times/week) and walking (Falls Management Exercise programme - FaME); 2) Home-based exercises (30 mins, 3 times/ week) supported by trained peer mentors, plus walking (Otago Exercise programme - OEP). The primary outcome was the proportion reaching the recommended 150 minutes of MVPA per week 12 months after cessation of the intervention. Secondary outcomes included falls rate, balance confidence (ConfBal) and falls efficacy (FES-I).

1256 people participated and 572 (46%) had data available for complete case analysis at 12 months. The proportions reaching the MVPA target rose between baseline and 12 months from 40% to 49% (FaME), 41% to 43% (OEP), and 37.5% to 38% (usual care). A significantly higher proportion in the FaME arm reached the MVPA target compared to usual care (adjusted odds ratio (AOR) 1.78, 95% CI 1.11, 2.87,  $p=0.02$ ). There was no significant difference comparing OEP and usual care arms (AOR 1.17, 95% CI 0.72, 1.92,  $p=0.52$ ). FaME arm participants added around 15 minutes of MVPA per day to their baseline level.

Compared to usual care, the FaME arm had a significantly lower rate of falls at 12 months (IRR=0.74, 95%CI 0.55, 0.99,  $p=0.04$ ), but not at 24 months. There was no significant reduction in the rate of falls in the OEP arm at 12 or 24 months. Compared to usual care, balance confidence was significantly improved in both FaME and OEP arms (mean difference FaME:  $-0.53$ , 95% CI  $-1.00, -0.06$ ;  $p=0.03$ ; mean difference OEP:  $-0.55$ , 95% CI  $-1.03, -0.06$ ;  $p=0.03$ ). There was no significant difference in falls efficacy for either intervention arm compared to usual care (mean difference FaME  $0.10$ , 95%CI  $-0.65, 0.86$ ;  $p=0.79$ ; mean difference OEP  $0.05$ , 95% CI  $-0.74, 0.83$ ;  $p=0.91$ ).

In a low falls risk community dwelling older population, the FaME intervention increased self-reported MVPA and significantly reduced the rate of falls 12 months after cessation of the intervention. Balance confidence was significantly improved in both the FaME and OEP intervention groups but there was no significant effect on falls efficacy.

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### **Setting up an effective falls prevention assessment and intervention programme in people's homes**



**Hubert Blain** and Jean Bousquet,

***Department of Geriatrics, Montpellier University Hospital MACVIA-LR, Montpellier 1 University, France***

The incidence of falls in nursing homes is estimated at 1.5 falls per bed per year (range 0.2 to 3.6). It is higher in men than in women and is lower in people requiring the highest level of care (unable to rise from a chair or to stand unaided).

Every year, more than 50% of falls in nursing homes result in complication due to injury: 2% end in hip fracture, and 27% head injuries. Men are more likely to be injured than women and, in the case of hip fracture, the outcome is much poorer in people living in nursing homes than in patients living in the community.

A large proportion of falls occur in the residents' rooms or in bathrooms, during transfer or walking, as well as in common areas during walking, standing quietly, or sitting down.

Most of the falls are due to centre-of-mass incorrect weight shifting in the case of external disturbances. This may suggest the incorporation of safe methods to simulate trips and bumps into routine clinical examinations and the training of subjects to cope with external disturbances. Exercise could reduce falls in people needing intermediate levels of care and might increase falls in people that require high levels of nursing care. Vitamin D supplementation has to be proposed systematically in nursing home residents since it is effective in reducing the rate of falls.

Multifactorial interventions that aim to reduce the risk factors of falls are recommended in nursing homes even if they have not proven their effectiveness in reducing the risk of falling and injurious falls in nursing home residents. These multifactorial intervention programmes may include (i) the reduction of psychoactive medication use as much as possible, (ii) modification interventions that aim to improve the safety in rooms, bathrooms, and common areas, if possible delivered by occupational therapists, (iii) intervention for the treatment of vision problems, pacemakers in the case of collapse due to carotid sinus, podiatry and ankle exercises in people with disabling foot pain, and (iv) interventions to increase knowledge/education in fall prevention residents and caregivers.

### **Role of the insurance business in fall prevention programmes**



**Erich Koch,**

***Head of Public Policy, Sozialversicherung für Landwirtschaft, Forsten und Gartenbau, Germany and representative of AIM***

Health care insurances and scientists work together to prevent ill-health in older people. Falls related injuries are one of the most frequent health risks in this age group.

Research shows that evidence based fall prevention can significantly reduce the number of falls and fractures. All involved benefit from fall prevention. For patients a fracture often leads to dependency on care services and an increased risk of complications and repeated falls. As a consequence the workload for the care personnel of nursing homes and home carers usually increases. If people are cared for at home, the care giving relatives are often additionally burdened. And health care insurances incur additional administrative and benefit costs. Therefore, health insurances have multiple interests in the wider and efficient implementation of fall prevention programmes.

Despite these clear interests, health insurances are confronted with various legal, administrative and economic barriers. Healthcare historically focused much more on cure than prevention. The legal



framework for health insurance actions is still predominately designed to secure a solid cure and rehabilitation system.

Prevention awareness is relatively low among decision makers on all levels from legislator to older people in need. Therefore it is important to increase awareness among the various stakeholders and to offer evidence-based measures and tools. However people seem to turn away from programmes offered as they appear not appealing enough for target audiences to be accepted and complied with in the long run. This results in weak demand for prevention offers.

Complex contextual factors make the identification of casual relationships also difficult. All these challenges require innovative solutions and often cost intensive research, which needs to be funded. Which prevention measures result in what kind of success? How much money needs to be put in prevention and how does it compare to financial results?

Additional reasons for the underused potential to take preventive actions by health insurance companies is the competition anchored in law as well as the economic framework. Medium or long term effective investments in prevention weigh heavily on the budget today and may have a negative effect on competitive position. Where corporate and private customers can easily change their insurance policies and insurance providers, the profit may fall to a competitor. Creative and linked strategies are required.

### **Falls awareness campaigning - Improvements to reduce fall injuries amongst older people**



**Åsa Bygdesson**

#### ***R&D Welfare Region Västerbotten, Sweden***

The County of Västerbotten covers a very large part of the northern region of Sweden. It is a sparsely populated area where most people live in the coastal area. There are 15 municipalities, three hospitals and 39 primary health care centers in the region.

Falls and consequent fractures may have dramatic consequences. A recent study shows that in all age groups, 56% of all accident related deaths were caused by a fall injury (annual average for 2012-2013). Only 10% of deaths were related to traffic accidents. These results are contrary to popular belief and to the categories of accidents that catch the headlines in the media.

In 2013, 1.709 people in the county of Västerbotten, aged 65 or older fell and injured themselves so badly that they were hospitalized. The incidence rate in Västerbotten is significantly worse compared to the rest

of the country in people age 65 or older. Since 2011 the R & D unit in Västerbotten has produced regional reports, comparing figures between communities. These reports reveal that injuries due to falls is not only a problem for a few individual communities but for the whole county.

A working group was created in Västerbotten to analyze why the falls rate was higher compared to the rest of the country and to try to reduce the number of fall injuries. Simultaneously collaboration was established with ProFouND. The working group consists of representatives from regional management, R&D welfare in Västerbotten, Umeå University and the county council. The initiative was taken to launch an annual week long falls awareness campaign, Fall int!

The goal of the campaign is to raise awareness in the community about the risks of falling and what preventive measures can be taken. The campaign organisation includes senior organizations, local authorities, private companies and others. Campaign materials were developed while taking inspiration from the Age UK - Falls Awareness Week. A total of about 157 activities took place in the county 2014 and the falls awareness campaign is now gradually spreading across the country. The activities included quizzes, balance exercises, distribution of information materials, lectures, both to the public and staff in healthcare.

Experience has taught us that long-term planning is important and that invitation to participate in the campaign should be spread widely. Having a detailed communication plan is essential and people should be able to pick and choose from a catalogue of readymade campaign methods and tools. Having someone at the regional level who coordinates the campaign is key to success. Other success factors are the availability of ample materials and resources that are freely downloadable.

Since the start in 2013 a national engagement has taken place: the Swedish Governmental of Social Welfare Department, the Association of Communities and Counties in Sweden, and the National Level Association for the Prevention of Accidents are interested in taking advantage of the experiences of the campaign in Västerbotten and aim to launch a similar falls awareness week at the national level.

### **Strength and Balance awareness in practice and Cascade Trainers for effective implementation**



**Dawn A Skelton**

***Professor of Ageing and Health, Centre for Living, Institute of Allied Health Research, Glasgow Caledonian University, UK & Director, Later Life Training, Scotland, UK***

Evidence based exercise programmes are the mainstay of most falls services in the UK and are recommended in many National and International policy recommendations for the effective management

of falls. These exercise interventions have benefits wider than just falls prevention and support the objectives of the EIP AHA plan, having the potential to improve quality of life, reduce dependence, reduce isolation and increase healthy active years. In the UK over 54% of falls services employ trained exercise personnel to work individually and in groups of older people with a history of falls and since 2006, Later Life Training have trained over 4,000 falls prevention exercise leaders, with a cascade trainer team of 16 people. Unfortunately in many EU countries, there is a lack of trained personnel to ensure that exercise is safe, progressive and adapted to the needs and preferences of older people.

The objective of WP5, in ProFouND, is to create a network comprising a cadre of trained and accredited instructors of falls prevention and management exercise tutors across Europe, supported using online training and quality control. The tutors once trained are accredited to provide evidence based falls preventions exercise interventions to a variety of different client groups and also to deliver evidence based, standardised and endorsed training themselves to new instructors in their regions. A network has been created for these tutors to support their continuing professional education, implementation, and this cascade model of training and delivery will ensure sustainability. Standardisation of delivery across regions will ensure effectiveness as well as reach.

The training equips tutors with skills and knowledge in postural stability, strength and balance exercises (Otago and elements of FaME) and motivational training to increase uptake and adherence to these exercise programmes amongst older people. The training also supports the skills required to organise future training, communication skills and support strategies for new leaders. Translation of three progressively challenging home exercise booklets into 14 different EU languages has meant that new leaders have resources to encourage home based exercise as well as the skills to deliver training in small groups.

Working closely with different stakeholders in the regions has supported both accreditation and endorsement to ensure sustainability of the training. For example, in Sweden, the Swedish Association of Local Authorities and Regions is translating resources for a national roll out of the training and a linkage with Senior Alert (national quality register). E-REPS (European Register for Exercise Professionals) have recognized this training in the framework of its Lifelong Learning Programme. In Germany, major insurance companies have accepted the programme onto their registers for reimbursement to older people.

Since early 2014, Later Life Training have trained 44 Cascade Trainers in Germany, Austria, Sweden, Norway, Greece, Cyprus, Switzerland and early next year we progress to Spain and Italy. So far, there have been 2 cascade training courses in Germany, one in Norway and one in Greece. The aim is that each region would have 2-3 courses each year training another potential 90 new trainers in their regions each year. Each of those has the potential to reach over 100 older people a year, ensuring a growing reach into the older population of Europe.

**Getting policies changed by using cost and evidence in the argument... and... by lots of persistence and some good luck**



**Johan Lund**

***Norwegian Safety Forum, Norway***

Falls prevention has a long history in Norway. Since the end of the 1980's there have been a lot of activities in order to establish capacities for prevention of falls in older people. A leading role has been played by the Norwegian Safety Forum (NSF). This Forum, a NGO, is designed to provide information on all aspects of injury prevention and safety promotion, and to facilitate co-operation between business, public sector and non-governmental organizations.

The main activities in fall prevention in Norway have been:

- 1988-92, two national campaigns, one was a general information campaign, the other a targeted campaign towards municipalities: their technical departments and home visitors;
- 1988-93, a demonstration project in the municipality of Harstad which reduced hip fractures by 10% through targeted prevention means.
- 1990-95, another project in a city district of Oslo which reduced hip fractures by 50% during the five year period by rather simple and cheap means. Some of the reduction could however, be explained as reduction to the mean.
- 2000, the launch of a comprehensive report made by NSF, summarizing evidence and proposing that the Ministry of Health (MOH) carry out a national five-year programme, coordinated by a national task group of 3-4 persons, and to establish fall prevention cross-sectorial groups in several municipalities. This proposal was however not accepted by MOH.
- 2004-08, the NSF managed to get funding to establish such a programme, but smaller, with one person to act as a national coordinator. 15 municipalities joined this programme carrying out various prevention activities. Hip fractures were reduced in these municipalities compared to municipalities without the programme.

- In 2013, the Directorate of Health (DOH) summarized all experiences and evidence based prevention projects nationally and internationally in a report towards the municipalities: “Falls prevention in the municipalities – State of art and recommendations”. DOH also recommended that MOH should establish a five year national project on falls prevention.
- In 2014, a report was made on “Cost of hip fractures” based on a sample of 400 patients with hip fractures that were followed in detail with regards to cost involved, one year before and one year after. The cost were calculated as an average 60 000 Euro the first year. 38% is covered by the state, 60% by the municipality and 12% shared (rehabilitation). This report mainly targeted the municipalities, to motivate them to carry out falls prevention among older people.
- Despite recommendations in early 2014 of the DoH to the MoH, there was new political leadership which initially stalled progress. However, the DoH has now asked the MoH for a national project on falls prevention, to be delivered 1<sup>st</sup> of November. It seems that the political window now is opened. This might be due to the series of initiatives providing the evidence as for the importance and societal impact of the issue (and perseverance of NSF and its partners), but is also owing to some lucky coincidental factors that will be identified in the talk.

### Seminar Attendees

Jennifer	Mann	Northern Sydney Local Health District
Anne	Lounamaa	THL
Hubert	Blain	Centre de Prevention et de Traitement des Maladies Du Vieillissement
Erich	Koch	International Association of Mutual Benefit Societies
Kilian	Rapp	Robert Bosch Gesellschaft Fur Medizinische Forschung
Klara	Zalatnai	Hungarian Osteoporosis Patient Association
Barry	Greene	Kinesis Health Technologies
Jurate	Macijauskiene	Dean of the Faculty of Nursing
Judith	Kuiper	Consumer Safety Institute
Johannes	Molenbroek	TU Delft
Wim	Rogmans	EuroSafe
Tischa	van der Cammen	Delft University of Technology
Jorunn	Helbostad	Norges Teknisk Naturvitenskapelige Universitet
Eva	Jakobson Vaagland	Norwegian Safety Forum
Johan	Lund	University of Oslo
Sandra	Alves	INEB- Institute Biomedical Engineering
Stefan	Krajcik	Geriatric Medicien Section of Union od European Medical Specialists
Gillian	Asplin	Dept of Physiotherapy, Sahlgrenska University Hospital/MoIndal
Asa	Bygdeson	FoU Valfard Region, Vasterbotten
Lillemor	Lundin-Olsson	Umea University
Margareta	Svensson	Dept of Physiotherapy, Sahlgrenska University Hospital/MoIndal
Karl-Goran	Thorngren	EFORT
Lena	Zidén	Dept of Physiotherapy
Patricia	Anderson	senior nurse
Julie	Bruce	University of Warwick
Fiona	De Hemptinne	UCB
Jill	Dow	NHS Fife
Gillian	Grubb	NHS
Helen	HagueHawley Hague	University of Manchester
Ingrid	Hale	Improvement Programme Manager
Jennifer	Henderson	The Royal Society for the Prevention of Accidents
Denise	Kendrick	University of Nottingham
Kerry	Lowe	dementia

Jacqueline	Mackay	Health Improvement Team
Lorna	Mackenzie	NHS Fife
Jane	McDermott	University of Manchester
Gavin	Mcpike	BACCS
Sheila	Merrill	The Royal Society for the Prevention of Accidents
Ruth	Muir	Occupational Therapist
Ann	Murray	Framework for Rehabilitation
David	Oliver	British Geriatrics Society
Caroline	Peffer	Senior Charge Nurse
Gerallt	Roberts	Lagan Valley Hospital, Lisburn, Northern Ireland
Linda	Saunders	Falkirk Council
Dawn	Skelton	Glasgow Caledonian University
Linda	Speirs	Physiotherapist
Emma	Stanmore	University of Manchester
Errol	Taylor	Royal Society for the Prevention of Accidents
Joyce	Walker	Falkirk Council
Carol	Wilkieson	Royal Alexandra Hospital
Rebekah	Wilson	NHS Ayrshire and Arran