

Injuries among older people

Purpose

Injury is a serious public health problem in Europe, with the greatest burden on young, the older people, and those living in the most deprived circumstances. This policy briefing focuses on injuries among older people (those aged 60+ years). Injuries, amongst all age groups are not inevitable - they can be prevented or controlled. Among older people considerable evidence exists on the prevention of falls. In view of this evidence and the burden of injury in the 60+ generation a higher policy priority should be afforded to fall prevention in particular in ageing societies like most European ones.

The European Union (EU) Council Recommendation on the prevention of injury and the promotion of safety already highlights older people as a group for special attention¹. This focus is supported also by the WHO Regional Committee for Europe resolution².

As repeatedly underlined in these European policy statements, the health sector has much to offer in response to injury prevention, by coordinating a multi-sector action in the context of a public health approach.

The purpose of this policy briefing is to highlight the burden of injuries of older people and to provide evidence as to good practices in preventing these injuries.

Key messages in this policy briefing are:

- Falls are more common than strokes and can be just as serious in their consequences. About 30% of people over 65 years living independently fall each year, for people in residential settings this figure is even higher.
- The burden of treatment, rehabilitation and care that is often triggered by an injury of an older person is enormous, both for society and their families. Injury in older people (60+) accounts for almost 60% of all injury related hospital bed days! Overall, almost 10% of all hospital bed days spent by older people are related to the acute care of injuries.
- Falls are the most preventable cause of needing nursing home placement. Many of the health problems that increase the chance of falling are known and are treatable.
- Annually, 120 000 older people in the EU die from the consequences of injuries. The highest mortality rates due to injury relate to this age group, again, falls being a major cause of unintentional deaths.
- The huge differences that exist in injury fatality of the senior population between EU Member States indicates a considerable potential for improvement in the lower rankings countries.
- The share of older people has been continuously rising in the last decades in both fatal and non-fatal injuries, and is bound to rise even further in the forthcoming years due the ageing societies in most EU countries.
- Most evidence on injury in older people exists for the prevention of falls and traffic accidents. The main risk factors for injuries in the older populations include both personal and environmental factors, such as balance, muscle strength, visual deficit, medications, uneven pavements and carpeting.
- Fortunately, the evidence of proven and promising strategies for the prevention of unintentional injuries in the older population is considerable. These include physical activity and balance training, medication review, home modification or promoting safety equipment and associated devices. To be effective, these measures need to be implemented in a concerted and consistent manner at national and local levels.
- Various platforms exist in the EU and globally that provide “standard packages” with the most important information necessary to prevent falls, for instance ProFaNE, a renowned network for the prevention of falls and improvement of postural stability amongst elderly people.
- The role of the health sector in fall prevention is crucial. Injury prevention should be included in all training programmes of health professionals with due regard to injury surveillance and reporting as key tool for advocacy and action plan development in countries.
- Data from the EU Injury Data Base (IDB) contributes to a better understanding of the causes and circumstances injuries. Therefore, the EU-wide implementation and use of emergency department based injury surveillance system is strongly recommended in view of increasing the effectiveness of prevention policies.



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Policy briefing



Definitions

An injury is usually classified by intention. The main causes of unintentional (accidental) injuries are motor vehicle accidents, poisoning, drowning, falls and burns. Intentional injuries (or violence) can be divided into the categories of: self-directed (as in suicide or self harm), interpersonal (child, partner, elder, acquaintance, stranger) or collective (in war and by gangs), and other intentional injuries (including deaths due to legal intervention). In addition to intention and cause, injuries can also be addressed according to their settings – such as the home, sports and leisure, workplace or road.

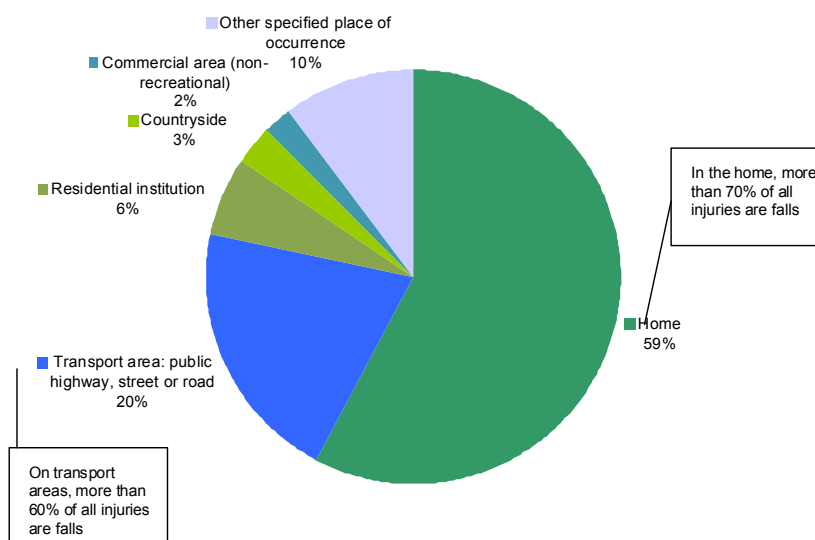
This policy briefing concentrates on unintentional injury and examines the age group of people over 60 years of age (in some instances figures may relate to the age group 65+). Both measures designed to prevent the incident and measures designed to reduce the impact of the injuries are addressed.

Key facts about injuries among older people

Injury among the older are fall injuries

- Falls are a major problem among older people. Falls are more common than strokes and can be just as serious in their consequences³. About 30% of people over 65 years living independently fall each year, for people in residential settings this figure is even higher. There is an increased risk of falling with age. About 20% of falls require medical care and almost than 10% result in fractures. At least 1 in 5 people continue to need increased care more than a year after the fracture⁴.
- The home (almost 60%) and “the streets” (20%) are the most relevant places for occurrence of non-fatal injuries amongst older people. In the home, more than 70% of all injuries are falls related in the public domain, falls account for more than 60% of all injuries (Figure 1).

Figure 1 Place of occurrence of injuries among older people (60+) in the EU



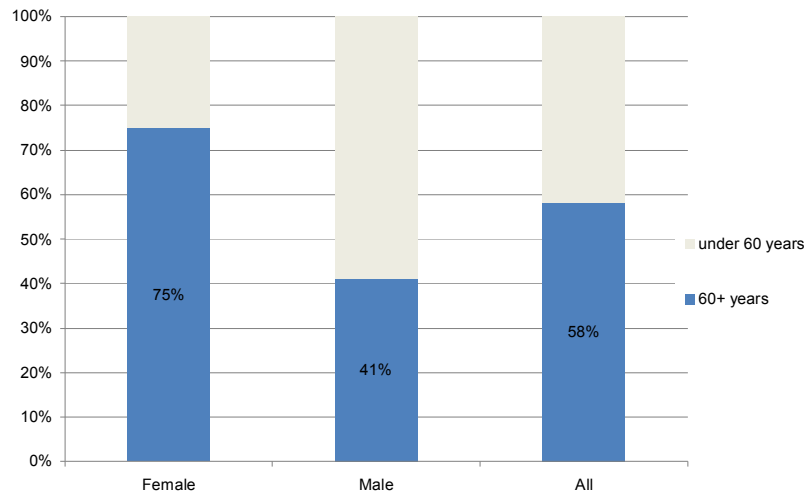
Source: EU IDB (hospital A&E), 2005-2007)⁵



Enormous burden of treatment, rehabilitation and care

- The burden of treatment, rehabilitation and care that is often triggered by an injury of an older person is enormous, both for society and their families. Injury in older people (60+) account for almost 60% of all injury related hospital bed days - for female injury patients this reaches 75%! Overall, almost 10% of all hospital bed days spent by older people are related to the acute care of injuries³ (Figure 2).

Figure 2 Injury related hospital bed days in the EU by age-group and sex



Source: WHO EHMD 2005-2006³

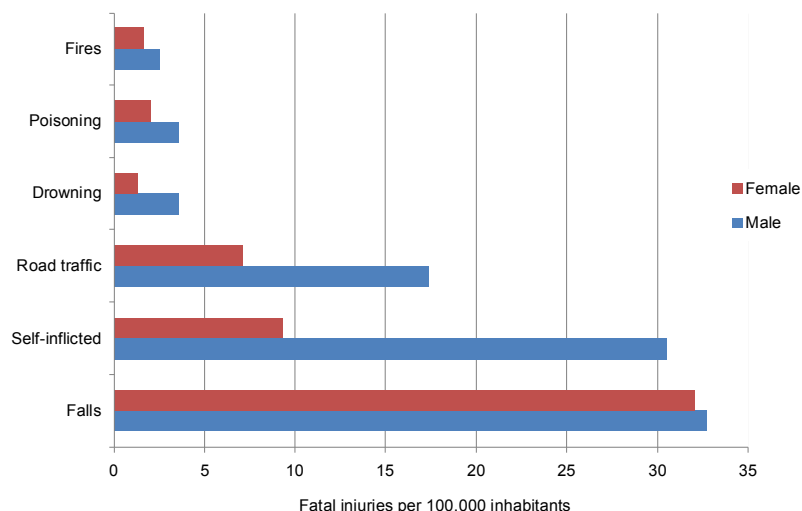
Hip fractures - the need for a gender specific response

- About 30% of injury related hospital discharges of women in the age group over 65 are diagnosed with 'hip fracture' (ICD-10 code S72); as opposed to 'only' 17% for men³. The gender differences in the rates of hip fractures are generally attributed to osteoporosis as a predisposition for fractures and with a much higher prevalence in women than men.

Falls can be fatal

- Reported rates of death after a hip fracture range from 12% to 36% within one year after the incident. Over 80% of victims of fatal fall injuries are 60 years and older. Annually, 120 000 older people (60+) in the EU die from the consequences of injuries⁵. The highest mortality rates due to injury relate to this age group, falls being a major cause of these deaths in both sexes (Figure 3).

Figure 3 Main causes of fatal injuries in older people in the EU (60+)

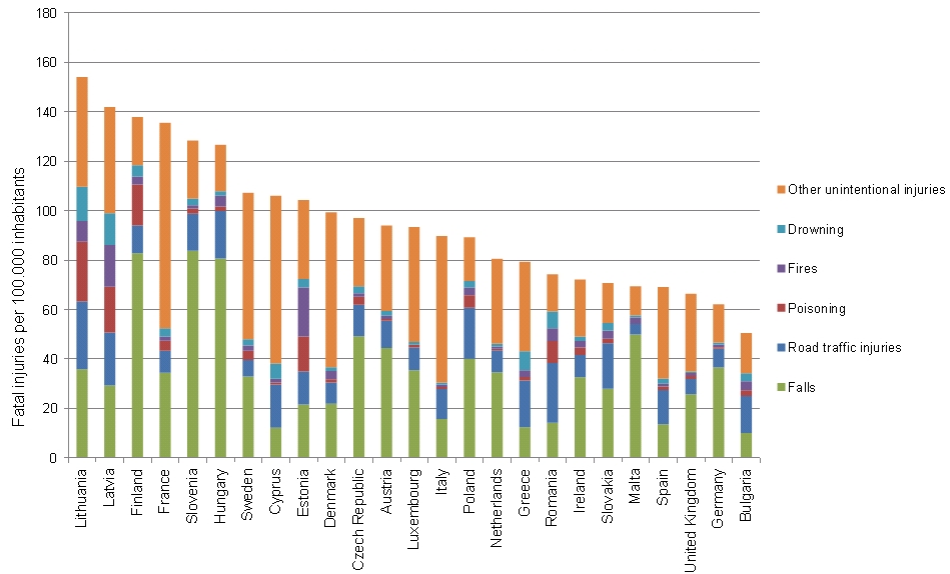


Source: WHO MDB 2005-2007, reproduced from Bauer R, Steiner M (2009)⁵



- Also in the senior population huge differences exist in injury fatality between EU- Member States - e.g. the rate of deaths due to falls of older people (60+) ranges from more than 80 per 100 000 in Slovenia, Finland and Hungary, to less than 10 in Greece and Cyprus (Figure 4). These inter-national gradients indicate a potential for improvement in fall prevention in the lower rankings countries.

Figure 4 Main causes of un-intentional fatal injuries in older people in the EU (60+) by Member State



Source: WHO MDB 2005-2007, reproduced from Bauer R, Steiner M (2009)⁵

Worrying Trends

- The number of older people suffering both fatal and non-fatal injuries has been continuously rising in the last decades in both and is bound to rise even further in the forthcoming years due the ageing societies in most EU countries. If the current demographic trend continues, 30% of the EU-27 population in 2030 will be 65 years or older.
- In the last decade the share of older people in all fatal injuries in EU has been steadily rising by approximately 1% every two years (from 40% in 1997 to 49% in 2006⁵). A similar rise is being reported by various national sources for the share of older people in injuries admitted to hospital: in Austria, e.g. this share has been rising from 66% in 1997 to 70% in 2006³.
- Age is also the biggest risk factor for dependency on care. According to a recent estimate dependency on care until 2030 will increase by 20% for women and by 80% for men after the age of 75⁶. If the rate of non-fatal injuries in older people cannot be halted, falls will be a significant contributor to the increasing dependency on care in the near future.



Box 1 Injury Data Base (IDB) and cross-sector injury data

Despite the considerable information that is available for fatal and non-fatal injuries of older people and injuries in general – some of which is presented in this document – a higher level of comparability of different data sources, and more details about important injury determinants like physical condition or socio-economic factors within sources are required.

The EU Injury Data Base is an emergency department based injury surveillance system that was originally focussing on home and leisure injuries, but has since 2005 been extending its scope to all types of injuries. In 2010, the majority of all IDB countries is expected to have the “all injury” information available for comparable injury figures across all sectors. This makes the EU IDB a relevant data source for both sectoral and inter-sectoral injury prevention.

To a large extent, the national IDB systems have been harmonised in past years with the help of projects, co-funded by the Public Health Programme 2003-2008⁷. In 2010, already 15 countries collect data according to a harmonized methodology and feed these data into a joint data base, the European Injury Database IDB, hosted by DG Sanco. In 2004, the Strategy on European Community Health Indicators (ECHI) was adopted, and IDB identified as the recommended source for deriving health indicators on injuries beside workplace and roads. In 2008, the Regulation on Community statistics on public health determined accidents and injuries as one subject to be covered. In 2009, the network of IDB data suppliers adopted a new strategy on how to improve the comparability of data, the accuracy of estimates incidence rates as health indicators, and the geographical coverage. This strategy is now being implemented through a EU-wide Joint Action on Monitoring Injury in Europe (JAMIE), co-financed by the Second Community Health Programme 2008-2013.

For more information: <http://www.eurosafe.eu.com/csi/eurosafe2006.nsf/wwwVwContent/I3projects-333.htm>

Falls are a significant health problem

Falls among older people are more common than strokes and can be just as serious in their consequences - among adults 70 years and older 3 in 10 fall each year; causing over 90% of broken hips. Only half of those who break their hip will get around like they did before their broken hip. Falls lead to problems with daily activities like dressing, bathing, and walking around.

Demography

If the current demographic trend continues, up to 30% of the EU-27 population in 2030 will be 65 years or older. This is reason enough for developing and implementing specific measures, programmes and policies that address the injury risks in the older population. So far, existing injury control policies and programmes have not succeeded in stopping the demography driven rise in the numbers of fatal and non-fatal injuries of older persons.

Well known risk factors

Most evidence on injury risks in older people is on falls and traffic accidents, including factors both personal (for example, muscle strength and flexibility, balance, physical function, mental function, osteoporosis, sensory impairment and medications), and environmental (such as uneven pavements, slippery surfaces, poor lighting, carpeting, steps etc.). Several studies have shown that the risk of falling increases dramatically with the number of risk factors⁴.

Effective prevention measures available – but not effectively implemented

Falls are the major preventable cause of needing nursing home admission. Although, a number of measures for preventing falls among older people have been proven to work in particular settings, in many countries they still need to be implemented in a concerted and consistent manner at national and local levels, with an emphasis on those at most risk and working to remove known barriers of large scale implementation⁸.



Role of the health sector

With injuries of the older population being closely related to the general health of the injury victims, the main responsibility for the safety of elderly people is with health authorities; but also other policy sectors like the traffic, housing and social sector can make substantial contributions. The health sector provides emergency trauma services both at the pre-hospital and the hospital level, as well as rehabilitation and care services. More attention, though, needs to be given by the health sector to the prevention of falls in clinical practice, e.g. by incorporating fall risk assessment and treatment into the care of older adults, and a coordinating role of prevention measures at the national and regional level. Through public health agencies.

The health sector has also an important role to play in the area of surveillance. Emergency department based injury surveillance systems, like the EU IDB, provide the requisite injury cause and consequence information, for the large number of incidents seen in hospital emergency departments for all types of intents and all injury settings. This kind of data is a prerequisite for inter-sectoral injury prevention.

Best practice in prevention of fall injuries of older people

Fortunately, the evidence of proven and promising strategies for the prevention of unintentional injuries in older people is considerable. These include physical activity and balance training, medication review, home modification or promoting safety equipment and associated devices. To be effective, these measures need to be implemented in a concerted and consistent manner at national and local levels, with an emphasis on those at risk⁹.

Medical Management (Risk Assessment and Follow-up)

As a first step a person needs to understand what may put them at risk for falling. Medical providers can help to identify risks and develop a plan how to reduce them. As outlined above, a number of health factors contribute to falls (frailty, multiple medications, etc.). Specific medical risk assessment and follow-up may include vision assessment and modification as well as medication review and modification^{4, 10}.

Environmental Modification – at home and in the community

Interventions to reduce environmental hazards can include the introduction of assistive devices such as grab bars in the shower or tub, or practices such as removing objects left on the stairs. Community sidewalks in disrepair can be reported to city officials for repair. By making changes to the home and community environment a person can feel safer and less at risk of falling and several studies have shown the interventions' effectiveness.

However, interventions to prevent falls need to be population specific; a one-size-fits-all approach will fail to deliver a significant population-level fall and fracture reduction. Home and environmental intervention undertaken by appropriately trained individuals is effective in reducing falls in frail older people with a history of recurrent falling and/or a fall-related hospitalisation and/or with poor vision (i.e. high risk group¹⁰).

These interventions consist of:

- home visits to assess the home for environmental hazards,
- providing information about possible changes,
- facilitating any necessary modifications,
- training in the use of technical and mobility aids.

Balance & Mobility (Physical Activity)

Studies show that promoting physical activity, balance training and exercise does not only improve mobility, but also reduce the risk of falling in selected groups of older people¹⁰.

Elements of the multi-factorial interventions showing some benefit (reduce the risk of falls by 15-50%) are home-based, professionally prescribed exercise programmes promoting dynamic balance, muscle strengthening and walking and home visits and modifications for those with a history of falling⁴.



Multi-factorial falls prevention programmes

There is considerable evidence for the effectiveness of complex falls prevention programmes that target combinations of risk factors and are tailored for selected risk groups. Programmes based on falls risk-factor assessment and tailored interventions in selected groups of at-risk older people reduce falls. The assessments can be made by a variety of health professionals or volunteers in a variety of settings⁴.

A multi-factorial programme is based on an individual assessment of the elderly person and can reduce the number of falls in community-dwelling elderly people by around 25%. After a fall or fall injury older people should be offered a multidisciplinary assessment and interventions to address the fall risks identified. Active treatments are considered preferable to referral alone¹⁰.

Resource providers

Various platforms exist in the EU and globally that provide “standard packages” with the most important information necessary to prevent falls, as for instance ProFaNE and EUNESE:

- ProFaNE is a thematic network for the prevention of falls and improvement of postural stability amongst elderly people that co-ordinates ongoing European clinical research and technology developments related to prevention of falls amongst elderly people. More at: <http://www.profane.eu.org/>
- EUNESE, the European Network for Safety among Elderly, has gathered a best practices policy manual and commonly acceptable information materials in order to facilitate the harmonization of policies and the development of a concise strategy on injury prevention among the elderly. More at: <http://www.euroipn.org/eunese/>

Combine community approach with targeted interventions

There is much debate as to which groups or individuals to target with fall prevention programmes. While the community approach will address all people above a certain age, e.g. 60, targeted interventions will address those most at risk of falling, i.e. older people who are housebound or live in institutions and those experiencing balance or gait control problems or those with previous fall incidents.

Both strategies are important and have been proven to be successful in reducing injuries in this age group. Therefore, a national strategy for fall prevention among older people should include at least two axes to work along:

- a programme of interventions educating older people on how to avoid risk in the home, encouraging physical activity, promoting awareness of risk factors for falls and for making homes safer. Although this approach, if effective, is likely to reach the largest number of people, it does not address individuals’ risk factors and has no mechanism for ensuring an appropriate implementation of recommended practices; and
- an individual approach by identifying those most at risk of falling and directing them to appropriate programmes using a dedicated fall prevention service. Although this may be more expensive, it has the benefit of individualized risk assessment and appropriate referral and advice.

Community dwelling older people

In older people living in their own homes, interventions could include a combination of the following measures¹²:

- Gait training and advice on appropriate use of assistive devices;
- Review and modification of medications, particularly psychotropic medication;
- Exercise programmes, with balance training;
- Treatment of postural hypotension;
- Appropriate treatment of medical conditions including visual problems; and
- Modification of environmental hazards.



Specific exercise programmes work best within a multi-factorial fall-prevention programme but there is evidence that they work *alone* as well, such as:

- Group-based balance exercise for people who are at risk and for frequent fallers, if led by an appropriately qualified professional;
- Individually tailored home-based exercise programmes administered by qualified personnel;
- Balance training, such as Tai Chi, for people with mild strength or balance deficits;
- Group exercise is a most important component in any multi-factorial community-based programme that includes also vision and home hazards;

Successful exercise programmes have consistently been. Exercise needs to be specific (dynamic balance, strength, endurance and gait training), progressive and sustained (longer than 10 weeks duration) to have continuing benefit.

Residential care dwellers

In long-term care and residential care settings, interventions could include a combination of the following measures ¹²:

- Vitamin D and calcium supplementation;
- Gait training and advice on appropriate use of assistive devices;
- Review and modification of medication, especially psychotropic medications;
- Nutritional review and supplementation;
- Staff education programmes;
- Exercise programmes for those at high risk;
- Environmental modification;
- Post-fall problem-solving sessions; and
- Hip protectors if supported with guidance by well trained staff.

Conclusions and policy recommendations

The existing injury control policies and programmes, and relevant enforcement measures for the safety of the older population need to be maintained at the highest possible level of performance quality. Given the high - and growing - societal and financial burden of injury among older people, governments in the region should place injury prevention and safety promotion for the older population still higher on the public health agenda.

There is considerable evidence for the effectiveness (by around 25% reduction of falls) of multi-factorial falls prevention programmes that target combinations of risk factors and are tailored for selected risk groups. These multi-factorial falls prevention programmes for the elderly are a cost effective way for member states to comply with the Council Recommendation on the prevention of injury and the promotion of safety adopted in May 2007 as well as the WHO European Regional Resolution RC55 from September 2005. Member States should ensure that safety as well as healthy ageing of the older population is a priority within all relevant policies and programmes on injury prevention, and is being included in relevant inter-departmental plans as well as plans specific to certain sectors like housing, road transport, and in the communities.

The role of the health sector in injury prevention has been clearly described by applying the public health approach^{1, 11}. Discovering needed details about injuries through surveillance, researching the causes and influencing factors, exploring the ways to prevent injuries and to reduce their severity, translating effective science-based information into policies, helping to implement promising interventions by the means of health education, working to persuade decision makers to address injuries as a major health problem, evaluating programmes by the means of injury surveillance, promoting capacity building in all areas including health services, promoting or leading cross-sectoral collaboration e.g. by developing and implementing national action plans on injury control.



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