

# Safe, accessible pedestrian environments: The key to mobility in ageing populations

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## Abstract

Demographic trends clearly indicate a significant increase in the numbers of old and very old people in our populations over the coming years. There is also a close correlation between age and disability. Access in and around the pedestrian environment is fundamental to the ability to remain independent and self sufficient: to get to shops, to medical facilities and to be part of the community. Unless older and disabled people are able to retain their mobility and to live independently, there will be severe economic and social consequences.

There have been major improvements in recent years in making public transport accessible to disabled and older people but the pedestrian environment often remains a barrier to mobility. Poorly designed or maintained pavements, street clutter, inadequate or unsafe crossing points and poor traffic management are among the deterrent factors and obstacles in our towns and cities. For many older and disabled people, the pedestrian environment presents a safety challenge both real and perceived.

Accident statistics and on-street surveys do not reveal the full extent of the problem. For many older people in particular, minor slips and trips or a sense of not having enough time to cross a road safely or of being threatened by a cyclist riding too close can result in a loss of confidence which leads to a loss of mobility. The physical and mental health consequences of this loss of confidence are severe.

New developments such as shared space schemes which are designed to create a more user friendly environment, can actually exclude those older and disabled people who lack confidence – in particular those with sight or hearing loss or who move slowly. Even where the risk is perceived rather than real, the impact on the person's ability to get out and about is just as damaging.

Designing and managing safe and accessible streets and pavements is a major challenge and one which will become increasingly important with rising numbers of older and disabled people. The paper will examine the actual and perceived risks to the safe mobility of older and disabled people and will explore the options for addressing the economic and social challenges presented by our changing demographics by creating pedestrian environments in which everyone can be safe and can feel safe.

## **Biography**

### **Ann Frye OBE, BA, FCILT, FCIHT**

Ann Frye is an international specialist on the transport needs of disabled and older people with over 25 years experience in this field.

She has worked extensively with the European Conference of Ministers of Transport as chair of the working group on Access and Inclusion for over 20 years and with the International Transport Forum, most recently on the mobility implications of a global ageing population.

She is a Visiting Professor at University College London, a Fellow of the Chartered Institute of Logistics and Transport and of the Chartered Institution of Highways and Transportation in the UK.

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## Setting the scene

### Demographic Trends

The world's population is ageing. In both developed and developing countries we see very clear demographic trends that will have a profound impact on the way that we shape and manage our societies and our environments.

The United Nations Department of Economic and Social Affairs 2009 Report on World Population Ageing ( [http://www.un.org/esa/population/publications/WPA2009/WPA2009\\_WorkingPaper.pdf](http://www.un.org/esa/population/publications/WPA2009/WPA2009_WorkingPaper.pdf)) indicated that:

- 11% of the global population is now more than 60 years old;
- By 2050, this figure is expected to be 22%; rising from 700 million people in 2009 to 2 billion;
- The pace of population ageing is faster in developing than in developed countries.

Data from the UN Enable Programme ( <http://www.un.org/esa/socdev/enable/diswpa04.htm>) confirms that:

- About 10% of the world's population has a disability;
- There is a strong correlation between age and disability: in some countries as many as two-thirds of disabled people are also elderly;
- 80% of the world's 500 million disabled people live in developing countries;
- Disability and poverty are closely linked.

In parallel we are also seeing, in many countries, a declining birth rate. This means that in future the numbers of younger working age people will not be sufficient to support (in economic or practical terms) an aged population. This, in turn, means that older people need to remain independent and self sufficient for as long as possible. In many societies too, families are increasingly dispersing so that young people are no longer available to support ageing parents and grandparents.

The environment in which older people live will therefore be a major determining factor not only in their ability to stay mobile but also in maintaining their overall physical and mental health and well being.

### Health and Wellbeing

In policy terms these demographic trends present a major challenge in both urban and rural environments and in both the developed and developing worlds.

There needs to be a fundamental re-think about the way in which we design and manage the pedestrian environment if we are to enable older and disabled people to move about independently and with confidence.

In this context it is important to recognise that a lack of confidence is as effective a barrier to mobility as a brick wall! If people don't feel that they can move about safely, for example without tripping or falling, without being threatened by traffic or without losing their way, then they will not go out at all.

For many older people, that first loss of confidence can trigger a quite dramatic loss of both physical and mental competence and well being. For those unable to venture out alone - even to get to the local shop for food – a loss of independence will lead, in the developed world, to an increased level of support and intervention from the medical and welfare services: home visits from doctors and domiciliary carers for example. In many parts of the world, however, such a support network simply does not exist. Indeed the extent to which, in these challenging economic times, any government can afford to devote ever increasing amounts of money to this level of care is likely to be called into question.

It is also the case that, if medical care is delivered in your own home rather than in a clinic or doctor's surgery, the quality of care – in terms of hygiene, lighting, availability of appropriate equipment etc – may be reduced. For those who have to rely on others for their basic food shopping, there can also be a nutritional impact. As we lose touch with the range of products on the shelves, we tend to focus on the basic items we remember and as a result our diet becomes less well balanced.

For those in the developing world, a loss of mobility is likely to have much more devastating consequences in terms of ill health and poverty.

## Policy Drivers

Work carried out by the European Conference of Ministers of Transport (ECMT) - now the International Transport Forum - and endorsed by European Transport Ministers identified a number of persistent barriers to progress in improving access to the pedestrian environment and to public transport for disabled and older people. These barriers include:

- **Low Government priority:** in many countries accessibility remains on the margins of transport policy. Economic pressures have exacerbated this problem;
- **Inadequate regulatory and legal frameworks and technical standards,** which means that often both the incentive and the means to make improvements is lacking;
- **Insufficient monitoring and evaluation of implementation:** there is little evidence of follow up to check whether measures to improve accessibility are working in practice;
- **Lack of familiarity with international good practice:** there are many examples of good practice but too little work to bring them together and disseminate them.

There are, however, some important recent policy drivers to meet address these problems.

The UN Convention on the Rights of Persons with Disabilities (<http://www.un.org/disabilities/>) is seen as a major catalyst for change in this context, particularly in developing countries. The Convention, which has now been signed by 144 countries and ratified by 76 (many from the developing world), places an obligation on signatories to provide access to the physical environment and to transport. There is a clearly stated link between access to transport and the ability of disabled people to use basic services including health, education and employment.

The UN Convention refers to “progressive realisation” of the goal of accessibility. In other words it must be seen not as a one off but as a step by step process. To get that process started, it is important to build up sufficient momentum among stakeholders, including disabled people, technical experts and policy makers to think innovatively and to implement change.

The demographic trends are also an important policy driver with many countries now recognising the imperative of enabling their growing older populations to retain their mobility and independence. In Singapore, for example, the concept of “ageing in place” is being developed by creating neighbourhoods in which older people can move about confidently and safely to meet their daily needs. In Japan – the world’s first officially “aged society” according to World Health Organisation definitions – there is strong emphasis on “productive ageing” and independent living.

The increasing concentration of world populations in urban areas is another key driver. Since 2008, for the first time, more than half of the world’s population have been living in towns and cities. By 2030 there will be almost 5 billion, with urban growth concentrated in Africa and Asia. (<http://www.unfpa.org/pds/urbanization.htm>). This means that there is a growing need to find affordable and sustainable solutions to the mobility needs of the ever increasing older populations in our towns and cities.

These issues are further developed in the Summary of Findings of a joint International Transport Forum/World Bank Workshop on “Innovation in Accessible Transport for All” held in January 2010 (<http://www.internationaltransportforum.org/Proceedings/Wash2010/Findings.pdf>).

## **Balancing Needs**

### **Urban perspectives**

European Transport Ministers recognised as long ago as 2001 (see <http://www.cemt.org/online/council/2001/CMO114Fe.pdf>) that older people in future will expect to retain the levels of mobility they have enjoyed previously although as they age mobility will become more difficult.

The ECMT report identified that older people will walk more, with up to 30 to 40% of travelling time spent on walking. Older pedestrians are more exposed to specific risks than any other age category. This risk is not fully reflected in road accident statistics because slips, trips and falls are not included. The cost to society is nonetheless significant.

The ECMT Council of Ministers agreed a recommendation that all policy options in transport and land-use planning should systematically include an evaluation of their potential impact on the safety and accessibility of older people (safety and accessibility audits). There is still some way to go before that goal is achieved.

The biggest challenge for the politicians, policy makers and planners is to find solutions that meet the needs of the whole population, including the most vulnerable. Too often solutions help one group of people but may make matters worse for another.

#### *Walking distances*

Many towns and cities have been transformed in recent years by the introduction of large pedestrianised areas relieving shoppers of the stress and noise of traffic.

However, in many cases the distances involved exclude large numbers of older and disabled people. Recommended distance limits without rest, based on research from a number of countries, suggest that for a wheelchair user or someone with a visual impairment, 150 metres is the maximum, while for someone walking with the aid of a stick, the maximum is as little as 50 metres.

Simple, low cost features such as the availability of seats so that people can rest in a pedestrian area can help to overcome the barriers of distance and enable them to enjoy the facility at their own speed and time.

### *Shared Space: the displacement factor*

One very current example is the development of Shared Space schemes designed to create environments of mutual respect between drivers and pedestrians. Much has been written and said about the pros and cons of shared space schemes and there are strong views held on both sides.

For older people and those with disabilities the usability of an area will depend not on the assurances of planners and politicians but on personal assessment of safety and confidence.

A literature survey conducted in 2009 of recent European studies on shared space found that:

- Evaluations have often focused on reducing traffic speed, improving visual amenity and on retail and property values;
- Research into the views of pedestrians appears to be heavily based on on-street surveys. There is no evidence of any research into the impact on individuals of perceptions of safety or the displacement of visually impaired or other disabled or older pedestrians who may no longer use an area because they do not feel safe;
- Few appear to have paid attention to the specific concerns of visually impaired pedestrians;
- The extent to which eye contact between pedestrians and motorists is essential in Shared Space environments is raised in many of the reports with no clear consensus.

The issue of displacement is particularly important. If there is no evidence of the impact on the lives of those people no longer using a particular area and perhaps no longer going out alone at all, there is no clear or accurate picture of the economic and social implications of the scheme. It is simply not enough to conduct on street interviews among those who, self evidently, still have the confidence to be there!

### *Pedestrians and cyclists*

For older people and those with vision or hearing loss, the mingling of bicycles and pedestrians is almost as frightening as the presence of cars. They move silently and swiftly and can cause significant – and even fatal - injury. While accident statistics may not reveal this as a major problem, the decision by many to stop going out alone or to stop using particular routes or shopping areas may have a devastating impact on their ability to continue to live independently.

Many older people will report no longer using a particular route or area even because a friend or neighbour had a near miss with a bicycle, even though they may not have experienced the problem themselves.

There is, of course, pressure to provide a safer space for vulnerable cyclists away from motorised traffic, but simply bringing them into close proximity with pedestrians without some kind of clear and easily discernible physical (not just visual) barrier is not an acceptable option.

### *Injuries to older pedestrians*

For those older pedestrians who do sustain injury from a slip or trip on the pavement or from colliding with a cyclist or motorist, the chances of serious and life threatening injury are much greater than for younger people.

Conditions such as osteoporosis make many older people (particularly women) much more susceptible to breaking bones. Fractures and other conditions that result in prolonged loss of mobility also increase the risk of pneumonia and medical complications which can prove fatal to older people.

The prospect of sustaining injury is also a major deterrent factor for many older people. A fear of falling is the biggest single factor in limiting outdoor mobility. This means that while the incidence of falls may be low, the perception of risk has a significant and damaging impact on confidence and so on travel behaviour.

## **Rural isolation**

### *Pedestrian vulnerability*

Although the needs of pedestrians in urban areas are rightly given high priority, it is important to remember that for the very large numbers of people who live in rural areas there is often a complete absence of pedestrian facilities or infrastructure.

In many rural communities, in both the developed and developing worlds, there are no footways to provide a safe pedestrian route. This in turn leads to high pedestrian accident rates.

For disabled and older people it will often mean no opportunity to move safely outside the home – even to get to a bus stop where one exists.

Low cost solutions to improve road safety so that pedestrians are not at such high risk are an important first step. Perhaps most helpful is the provision of a clear and separate path for pedestrians to keep them away from traffic and some basic means of crossing the road safely. The use of central pedestrian refuges, for example, would enable even those who are slow moving to get across in relative safety.

### *Basic Mobility*

In many areas too, the distances will be far too great and the conditions too harsh to permit anyone unable to walk long distances and deal with difficult terrain to have any kind of independence. This undoubtedly contributes to the extreme poverty of many disabled and older people in the developing world.

Solutions here are not sophisticated traffic management systems but rather low cost equipment such as basic wheelchairs robust enough to withstand harsh conditions.

## **Consultation and Engagement**

### *Listening to the silent voices*

Looking at the growing numbers of vulnerable pedestrians and the impact of loss of mobility on health and wellbeing, this is not an issue that any of us can afford to ignore – in either economic

or social terms. There needs to be a comprehensive review of the needs of the whole population of a given area before planning decisions are taken and new schemes introduced.

Too often even the planning and consultation process excludes those who are most at risk from bad policy decisions. Public meetings held in parts of town accessible only to car drivers or held after dark when many older and disabled people may not have the confidence to venture out are simply not acceptable. There needs to be a real effort made to identify all those who may be affected and to consult in a way that is appropriate to their needs and abilities. This may well take a little longer and cost a little more at the planning stage but if the end result is the creation of an environment in which everybody feels safe and confident, then the costs to society as a whole – at local as well as at national levels – will be greatly reduced.

### *Neighbourhood engagement*

The most effective way to plan access improvements is on an area by area basis so that all the obstacles: broken pavements, badly placed street furniture, high kerbs etc are dealt with in parallel. This means that accessible routes are opened up on a neighbourhood basis. Essentially, improvements of this kind need to be done in close co-operation with disabled and older people who live in the area. There are no greater experts than those who use the neighbourhood on a daily basis.

A World Bank project to promote public participation in China is one example of a successful community based approach. Local communities have been involved in identifying and prioritising access problems and local public input has then been incorporated into project design. A long term result has been greater sensitivity on the part of city leaders, government officials and contractors to the needs of disabled people. This in turn has resulted in higher quality workmanship and effective mainstreaming of accessibility issues.

Another example of mobilising people power to create useable pedestrian environments also comes from China. In Shanghai there is one "access checker" per square kilometre of the city whose job it is to identify barriers to access.

## **Universal Design**

There is often a belief among transport professionals that meeting the needs of older and disabled people is both costly and of benefit only to a small minority. This is very seldom the case if a universal design approach is taken so that improvements that will be particularly helpful to older and disabled people will also benefit everyone else.

### *Reducing Stress*

Perhaps the most striking example is in the area of signage. Many of the world's cities are very stressful places to those unfamiliar with the layout, the language or the culture. Anyone who is not a Japanese speaker will be familiar with the sense of isolation and confusion that hits the first time visitor to Tokyo!

The creation of large, open pedestrian areas or routes through towns and cities in much of the developed world can add to stress levels and cause disorientation, particularly among older and disabled people. Often signing is dictated by designers for whom aesthetics rather than legibility are the top priority. This means that essential information such as location of and distances to public toilets is omitted. And yet for anyone out and about with young children as well as for many older people, for whom incontinence may be an issue, this kind of information is vital.

### *Simple and Intuitive*

The use of colour, texture and even scent can provide guidance to those unfamiliar with an area as well as being vital to people who have low vision.

Many of the simple features that take stress out of urban environments have been developed to help people with learning disabilities and mental health problems. With the ageing population comes an inevitable rise in the numbers of people who develop conditions such as dementia or who lose some cognitive faculties as a result of strokes. Here again, simple intuitive design is valuable to all of us as pedestrians. The International Transport Forum Report "Cognitive Impairment, Mental Health and Transport" (ISBN 978-92-821-0216-9) sets out both the key issues and practical solutions to them. The earlier ECMT report "Guide to Good Practice: Improving Transport Accessibility for All" (ISBN 92-821-0139-8) also includes useful guidance.

## **Joined up thinking on investment and planning**

### *Linking transport and highway investment*

A major obstacle to the independent mobility of disabled and older people is the lack of joined up thinking and working between those responsible for the delivery of transport infrastructure projects and those responsible for the streets and pavements.

There are examples all over the world of expensive new transport systems which have been put in place – often with funding from international organisations – which are unreachable by all but the most agile pedestrians. Bus Rapid Transit schemes – seen as one of the most effective ways of moving large numbers of people in both the developed and developing world – are often surrounded by multi lane highways with no safe pedestrian access to them.

Funding streams are generally directed much more readily to major infrastructure development than to the often low cost, low key work of creating a safe pedestrian environment around it. This is due in no small part to the different levels and types of funding agency responsible for each and also, it could be argued, to the lack of understanding on the part of some planners and engineers that without a good pedestrian environment, accessible public transport is of little value to many.

It should surely not be impossible to make good pedestrian access a non-negotiable condition of funding for any new transport investment. It would require a higher degree of multi agency working than is often apparent but could result in improvements that benefit the whole community and not only the young and fit.

### *Indicators of accessibility*

At a more local level the transport provider and the highway authority seem seldom to work in harmony. In many European cities, for example, accessible buses with low floors and ramps are now the norm but the pedestrian routes to the bus stops – and indeed the bus stops themselves – are often inaccessible.

As a result, high level policy judgements are made about the success of access improvements based on meaningless indicators such as numbers of dropped kerbs or accessible bus stops even though these improvements may not, in isolation, have made any difference to the day to day mobility of disabled and older people.

The same point applies in relation to developments such as Shared Space. Measures of success are too often based on factors which paint only half the picture. Reducing the number of accidents

is very important – but only if the reason isn't that the most vulnerable pedestrians have simply stopped using the area.

## **Conclusions**

It is absolutely clear that local outdoor mobility is one of the most critical factors in enabling our large and growing population of older and disabled people to retain independence, with all the economic and social benefits that brings to the individual as well as to society.

However, we need to develop more effective ways of engaging older and disabled people in the process of planning and prioritising access improvements. We also need to ensure that we listen to the voices and needs not only of those who are able to get out and about but also of those who are not – and for whom the costs of a loss of mobility may be very severe.

Disabled and older people neither need nor want to stand in the way of progress and improvement in the pedestrian environment – indeed when it is done well and with sensitivity they stand to benefit more than any other group.