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Road Safety & Vulnerable Road Users



Safer Mobility for Elderly Road Users

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Introduction

- SaMERU is a €1.3million road safety research project 50% funded by the European Commission DG MOVE
- The balance is funded by the partners:
 - Southend on Sea Borough Council, UK (Lead)
 - City of Burgos, Spain
 - Technical University of Dresden, Germany
 - IFSTTAR, France
 - Lancashire County Council, UK
 - City of Modena, Italy
- Our objective is to make recommendations that highway authorities may adopt to reduce elderly road user casualties
- Final conference at Southend in **7th March 2013** - The Park Inn Hotel, Southend-on-Sea

Background - age, mobility

- We are all living longer and our desire to remain mobile in our later years is increasing
- Drivers over 65 years are the fastest growing of all driving groups in industrialised countries (*Siren & Kjaer, 2011*)
- In OECD countries, more than 25% of people will be over 65 years of age by 2050
- The European Safety Council (2008) predicts that the proportion of road casualties over 65 years of age will rise from 1 in 5 to 1 in 3 by the year 2050
- The fatality rate per kilometre for drivers over 75 years is more than 5 times higher than the average

(SWOV/Transport Research Centre CBS Netherlands)



Community Involvement in SaMERU

- Decisions that may affect the mobility of elderly road users must be taken with great sensitivity, after much consultation and debated at a political level
- Communication is therefore a key area and elderly road users have been actively participating in SaMERU from the beginning
- They have attended a series of meetings in Burgos, Modena, Lancashire and Southend
- We are recording their road safety concerns and giving feedback to participants
- We believe we have given elderly people a feeling of ownership of our findings through their active participation in SaMERU



Key Findings : Survey of Older Road Users' Views in Southend (320 Respondents age 60 – 75+)

- **Eye Test** - 85% considered it reasonable for drivers/motorcyclists over 65 to take a regular eye test as a condition of driving licence retention
- **Health Test** - 72% considered it reasonable for drivers/motorcyclists over 65 to take a regular health test as a condition of driving licence retention
- 86% are concerned or feel unsafe about cyclists using footways and pedestrian areas
- 50% regularly drive once per week
- 64% preferred to cross the road at a signal controlled crossing rather than an uncontrolled Zebra crossing

Travel patterns of the older driver 65+ Southend (Modena)

- 46.9% (46.5%) of trips are by car (including as passenger)
- 23.5% (11.9%) by bus
- in 17.5% (15.0%) by walking
- 2.7% (24.7%) by cycle
- 9.4% (1.9%) Other (Taxi, train, motorcycle, mobility scooter)
- Most respondents took 1-2 (2-3) trips per day
- The maximum number of trips in a day was 4 (4)
- 2 (0) people made no trips a week (in age groups 70-74, 85-89)



The effect of cognitive changes on the older road user



- Declines in memory are associated with lower driving safety (*McKnight & McKnight, 1999*)
- Poor selective and divided attention increase the risk of driving collisions, hazardous street-crossing and hazardous obstacle negotiation (*Anstey et al, 2005; Dommes & Cavallo, 2011*)
- Lower speed of processing information is associated with reduced driving performance, increased risk of collisions, increased risk of hazardous street-crossing decisions and higher risk of falls (*Dommes & Cavallo, 2011; Holtzer et al, 2007; Shanmugaratnam, Kass & Aruda, 2010*)
- Poor executive functions, (e.g. to disregard irrelevant information, to switch between tasks) are linked to poorer driving performance, higher risk of collisions and higher risk of hazardous street-crossing decisions (*Daigneault, Joly & Frigon, 2002; Dommes & Cavallo, 2011; Shanmugaratnam et al, 2010*)
- Poor decision making is associated with higher risk of driving collisions and higher risk of hazardous street-crossings (*Borowsky, Shinar & Oron-Gilad, 2010; Lobjois & Cavallo, 2009*)

Older people's fitness to drive (Class 1 Cars and light vans)

- Regular compulsory medical examinations, as a condition for licence renewal for all older drivers, differ widely in the EU.
- They are not required in France, Germany and the UK but in Finland, regular compulsory eyesight tests are required from 45 years and medical tests from 60 years
- **Medical conditions** - Belgium, France, Ireland, The Netherlands, Sweden and the UK rely on the older driver's declaration that no condition exists that would have an adverse effect on driving
- There is widespread recognition that driving skills deteriorate with age and this is the justification for introducing additional licensing checks for older drivers in some EU countries
- However, some older drivers develop a range of coping strategies that counteract the diminution of driving skills with age e.g. driving less, driving more slowly, not driving at night or in bad weather etc.
- Some researchers suggest that the effect of age related declines are better assessed using a functional, rather than medical approach (Risk Solutions, 2006).
- It is clear that more research is needed to determine the optimum solution, which could be a combination of both functional and medical tests for older drivers

Highway design for the older road user – junctions

- Age-related physical declines reduce the useful field of view and information processing speed and capacity of an elderly driver
- Therefore complex road junctions impose a high demand on the elderly driver
- At road junctions, the 65+ group is involved in a disproportionate number of collisions compared to other groups (*Braitman et al 2007, Sagberg Henriksson 2010, Mayhew et al 2006*)
- In order to address this, an age-friendly approach to junction design is recommended
- Recommendation: The intersection angle of two roads should be between 75 & 90 degrees (*Davidson 2007*)
- Staplin, Harkey, Lococo and Tarawneh, 1997, discovered that older drivers often turned too late at junctions, thereby coming into conflict with other traffic streams
- Recommendation: A minimum lane width of 3.6m at junctions to improve the margin of safety at junctions
- Separated and/or signal controlled turning facilities.

Highway design for the older road user – traffic signs

- Age-related issues, including divided and selective attention, orientation difficulties and decreasing visual acuity result in older drivers having difficulty observing traffic signs
- Rowley & Seguin (1986) found that older drivers are over-represented in driving the wrong way down one-way streets
- **Recommendation** - Larger repetitive traffic signs, 'Wrong Way' signs, directional signs separated from warning signs
- **Recommendation** - Advance warning of at least 2.5 seconds before a stop sign
- **Recommendation** - Advance notice of 'Stop Ahead' signs
- In the UK, there is a growing public demand to improve the environment by reducing the 'clutter' created by a proliferation of road signs that have outlived their usefulness. This could be an indirect benefit the older driver who is often unable to assimilate all the information presented on the highway

Training older drivers

- Lancashire has carried out a pilot driver training course for people aged 65+ and evaluated the effectiveness of training and recruitment processes
- The course is free of charge and is entirely practical with 2 hours in car one-to-one assessment followed by a further one hour session after 3 months
- With one exception, all older drivers enquiring about training expressed a preference for a practical rather than a classroom based course
- Courses are tailored to individual needs and take place on roads used by the participant
- Recruitment to the course was through self-referral following advertising and through referral by doctors and police officers
- The SaMERU pilot course initially trained 50 drivers and following its success a further 400 have been trained in Lancashire in 12 months
- Typical feedback comments include:
 - Brilliant course!
 - I felt proud of my driving skills
 - Attending the course eases family concerns
 - Very beneficial
- An intensive recruitment programme via doctors and families of older drivers will be trialled over the next 12 months in Lancashire

Forum of mobility centres



- In the UK The Forum of Mobility Centres (a charity) offers information, advice and assessment to individuals who have a medical condition or are recovering from an accident or injury which may affect their ability to drive
- This service is not confined to the elderly but, of course, they do form a high percentage of users
- The Forum assists people with a disability who think they may need special modifications to a motor vehicle in order to control it safely
- Advice is offered to carers in the transportation of individuals in a motor vehicle who have restricted mobility
- Awareness is not high in the UK but it is a beneficial service, especially for the elderly, that could be developed throughout Europe

Various SaMERU Events





Thank you for your attention

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