

# Road safety and the elderly in Europe

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**4<sup>th</sup> IRTAD CONFERENCE**

***Road safety data: collection and analysis  
for target setting and monitoring performances and progress***



**Seoul, 16-17 September 2009**

# Introduction

- Elderly people (> 64 years old) are vulnerable road users.
- Elderly people specific characteristics:
  - ↓ Effects of aging on cognitive, perceptual and motor abilities
  - ↓ Physical frailty
  - ↓ Elderly people population expected to double by 2050

**VS.**

- ↑ More experience, better judgment
- ↑ Shorter trips and less driving
- Between 1997 and 2006 more than 58.000 people (about 19% of all traffic accident fatalities) were killed in traffic accidents in 14 EU countries.
- Lack of reliability of international comparisons due to data comparability and compatibility issues.
- Mainly use of aggregate data.



# Objectives

- Macroscopic analysis of basic road safety parameters related to elderly people, using data from the EU CARE database with disaggregate data on road accidents, together with data from other international data files.
  - Comparative analysis among countries will allow for drawing an overall picture of the safety level of elderly people in Europe.
  - Provide useful support to all decision makers working for the improvement of safety in the European road network.

*This work was carried out within SafetyNet project  
of the 6<sup>th</sup> Framework RTD Program of the European Union*



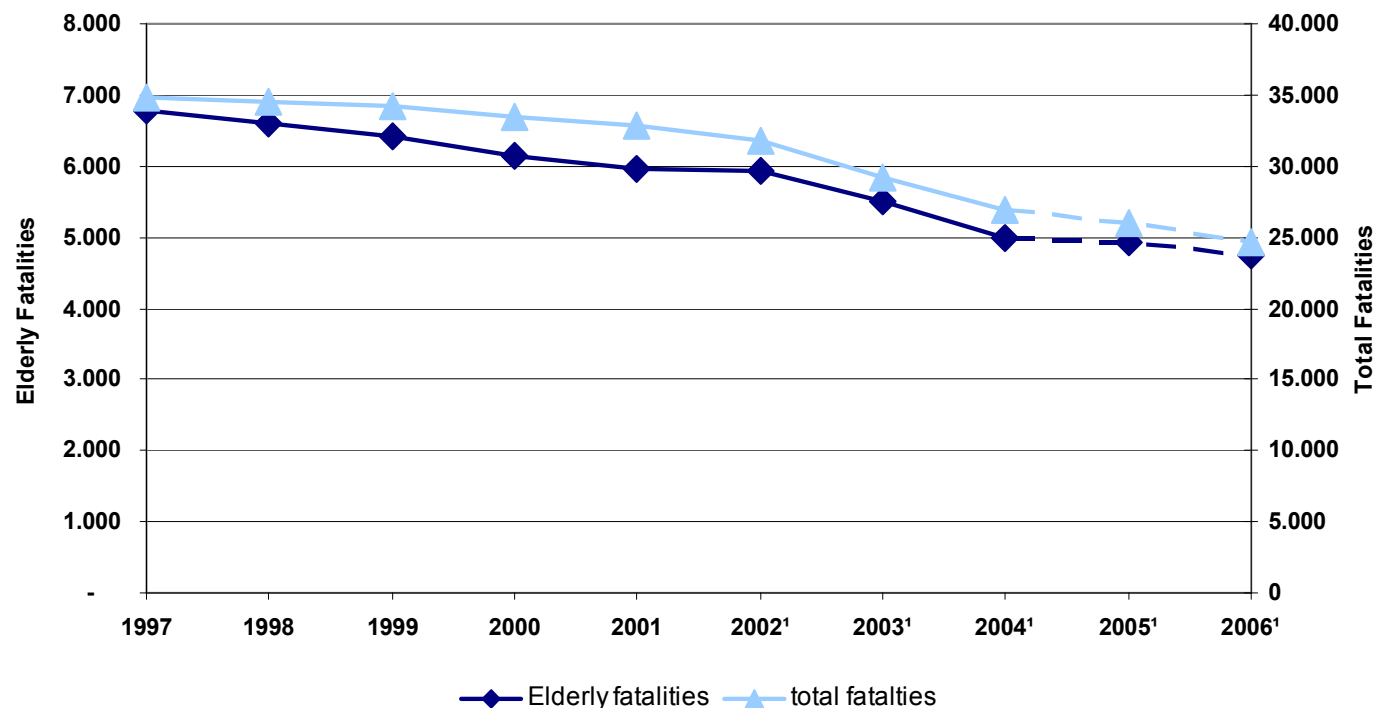
# Methodology

- Road accident data from the EU-CARE database:
  - 19 EU countries (BE, CZ, DK, EE, EL, ES, FR, IE, IT, LU, HU, MT, NL, AT, PL, PT, FI, SE, UK)
  - Data for the period 1997 - 2006<sup>1</sup>
  - Road accident data on elderly people and other age groups correlated with basic safety parameters:
    - i) mode of transport
    - ii) casualty age & road user type
    - iii) road network type
    - iv) seasonality
- Available risk exposure data from other international datafiles (Eurostat, etc)

<sup>1</sup> or last available year: LU (2002), NL, IE (2003), IT (2004), PL, UK (2005)



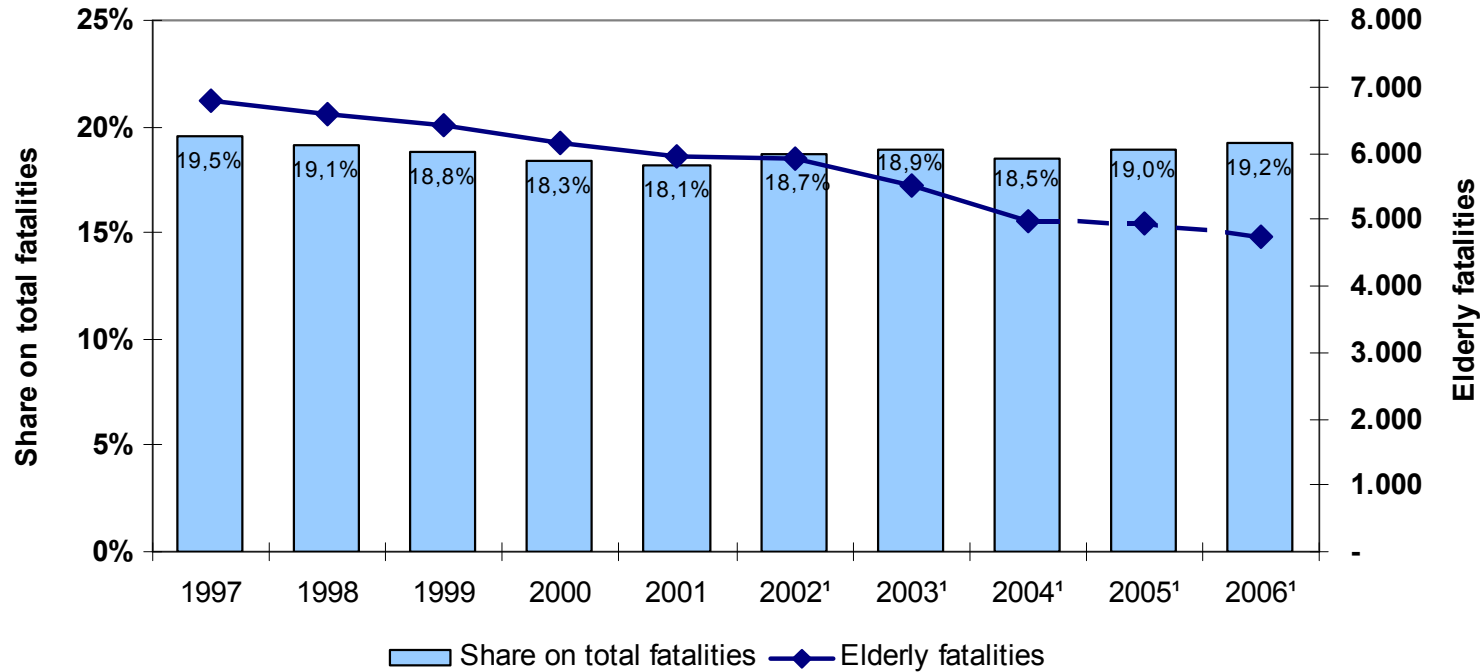
# EU-14 fatalities evolution, 1997 - 2006<sup>1</sup>



- Elderly fatalities in traffic accidents decreased by more than 30%.
- In 2002 the decrease in the number of overall fatalities was six times higher than the respective in the number of elderly fatalities.



# EU-14 elderly fatalities, 1997 - 2006<sup>1</sup>



- Although the number of elderly fatalities decreased, the number in proportion to the total number of fatalities is stagnating.

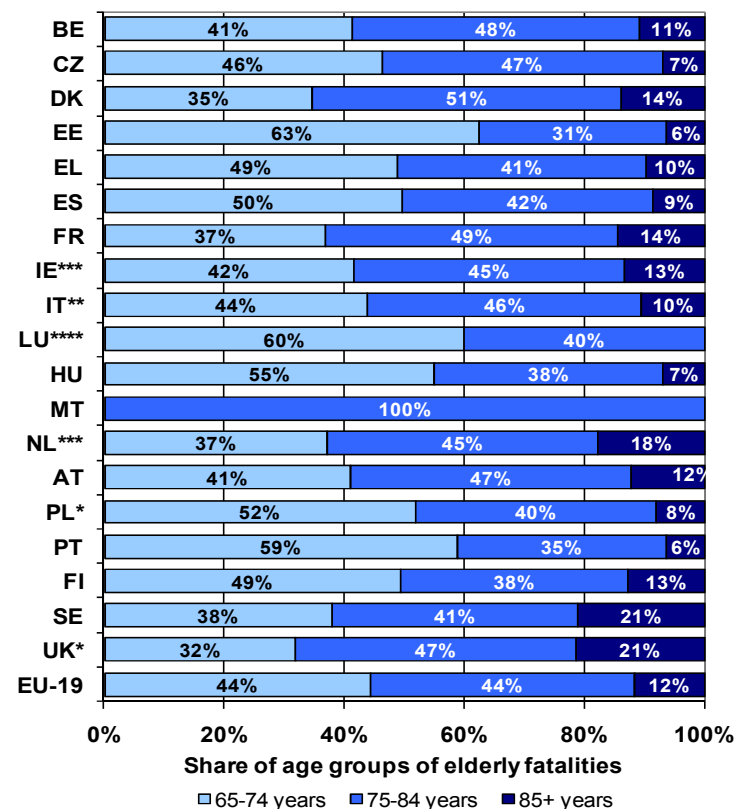
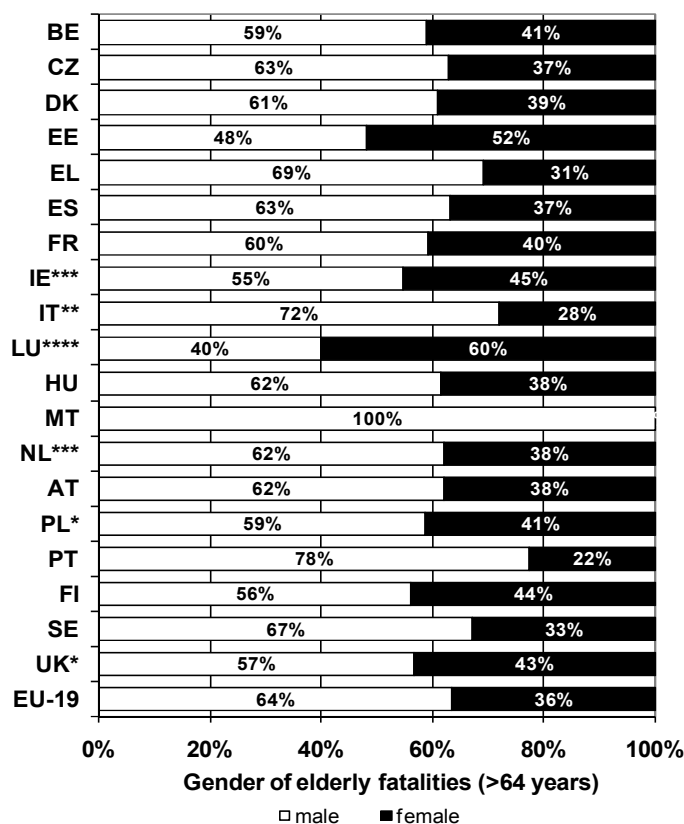
# Elderly & middle-aged fatalities per population - 2006 <sup>1</sup>

	Fatalities per million inhabitants (fatality rate)			Comparisons	
	Middle-aged	Elderly	Total	Elderly/ Middle-aged	Elderly/ Total
BE	87	107	101	1,23	1,05
CZ	102	118	56	1,16	2,09
DK	44	87	56	1,98	1,54
EE	178	141	152	0,79	0,93
EL	105	158	149	1,51	1,06
ES	82	91	93	1,10	0,97
FR	60	90	75	1,51	1,21
IE	52	112	79	2,14	1,42
IT	70	100	95	1,42	1,04
LU	77	75	131	0,97	0,57
HU	156	135	129	0,87	1,04
MT	0	18	27	-	0,66
NL	45	94	63	2,09	1,50
AT	85	113	88	1,33	1,28
PL	149	183	143	1,23	1,28
PT	88	118	92	1,35	1,29
FI	61	83	64	1,36	1,30
SE	46	60	49	1,32	1,23
UK	39	58	55	1,49	1,06
EU-19	77	100	89	1,31	1,13

- Poland and Greece have the highest elderly fatality rates.
- Some of the best performing countries have high proportions of elderly fatalities.

- Elderly are at greatest risk than the middle-aged and overall population in almost all EU-19 countries.

# Elderly fatalities by age group and gender -2006<sup>1</sup>



- Two thirds of elderly fatalities are men.
- Estonia is the only country in which women constitute more than half of the elderly fatalities (52%).
- Almost 90% of all elderly fatalities are aged 65 - 84 years old.



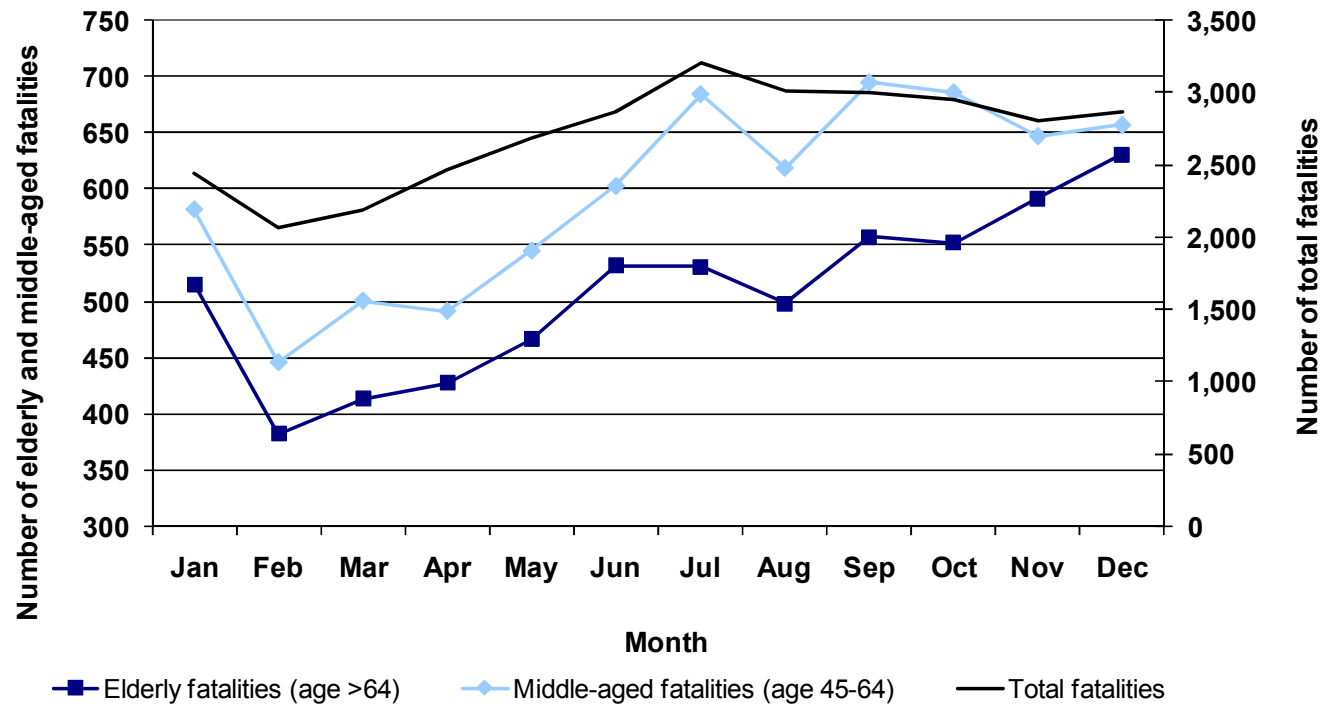


# Elderly fatalities by mode of transport & road network

- More than one third of the elderly fatalities across the 19 European countries in 2006<sup>1</sup> were pedestrians, with the highest proportions being in Poland and the lowest in The Netherlands and Sweden.
- While elderly fatalities account for 19% of all road accident fatalities across Europe, nearly 40% of the overall pedestrian fatalities are elderly people.
- The elderly have a higher share of fatalities on urban roads whereas middle-aged people on motorways and rural roads.
- Poland and Hungary are the countries with the highest proportions of the elderly fatalities in urban areas.

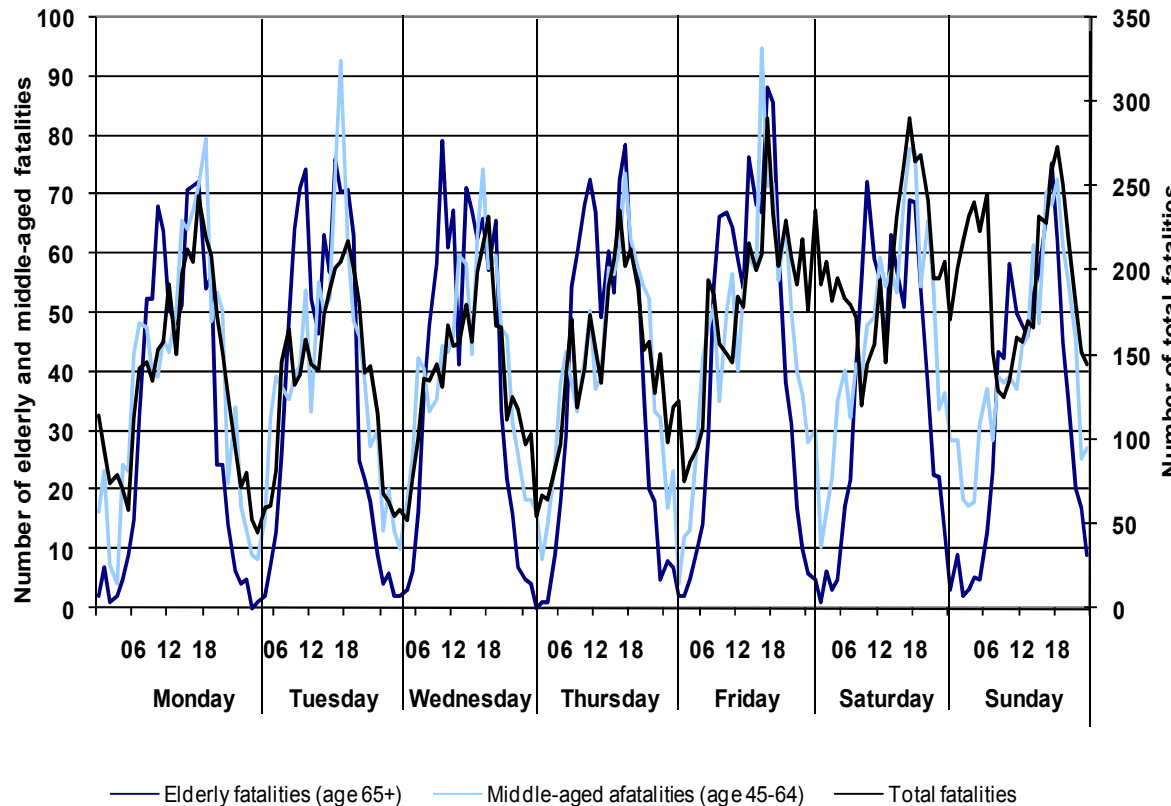


# Elderly fatalities by month



- The peak for elderly fatalities is in December, whereas for the middle-aged and the overall fatalities the peak is in September and July.
- In Greece the highest number of elderly fatalities occurs during summer, contrary to most EU countries.

# Elderly fatalities day of week and time



- Three out of four elderly people are killed during the week days (Monday to Friday), with morning and afternoon peak.
- Nearly 85% of elderly fatalities in 19 EU countries occurred between 8 a.m. and 8 p.m. During night-time, higher fatality rates in EL, ES, EE and IE.

# Conclusions & Recommendations

- Different impact of the road safety parameters on elderly safety level.
- Higher risk for road accidents, balanced by reduced exposure (driving) and lower speeds.
- Significant decrease in elderly fatalities in 2006<sup>1</sup> compared to 1997.
- Elderly people between 75 and 84 years old are at greater risk of being killed than the average person.
- Analyses results vary, according to the data disaggregation level.
- Analysis using statistical models is necessary for identification of combined correlation of parameters with impact on elderly safety and the underlining reasons behind the high numbers of elderly road casualties.



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