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## Elderly Pedestrian Safety and Driver Distractions

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## **Elderly Pedestrian Safety and Driver Distractions**

About two-thirds of pedestrian fatalities in Maine involve people crossing urban streets or rural roads. Therefore, providing safe sidewalks is not a cure-all even if that is what many pedestrians ask for. We also need to improve safety at crosswalks and other places where people cross.

In Maine, pedestrian fatalities reached a ten-year high in Maine even though other types of motor-vehicle fatalities have been reduced in later years. A recent accident illustrates the problem: “In Pittston, Maine, an 83-year-old man died November 23, 2015 while crossing the road to get to his mailbox.” This is a nationwide issue but Maine has a higher percentage of elderly people than most states and the safety of elderly should therefore be a special focus of safety improvements in Maine.

Official statistics, published by the National Highway Traffic Safety Administration (NHTSA), shows that in recent years, there are over 700 people in their 60s and 70s, and close to 300 people above age 80, annually killed as pedestrians in the US (in accidents involving motor vehicles). This can be compared to around 500 children and young adults below age 21 being killed. In the United States, the death rate for children ages 19 and under was 1.3 per hundred thousand people [of that age] in 1995 but that rate had been reduced to 0.60 in 2010. In 2010, the fatality rate for 75 to 84 year old pedestrians was 2.3 per hundred thousand. And if we look at injuries and fatalities from falls (not involving cars), elderly are even more overrepresented. Besides the risk of injuries in traffic, many elderly refrain from walking at all because they consider it to be too dangerous. And, their quality of life is diminished. People can walk later in life than they can drive and being unable to do either isolate many elderly.

Many pedestrian accidents are blamed on low visibility: The driver did not see the pedestrian in time. But it is also true that especially older pedestrians may not have seen the motor vehicle in time. Crash avoidance can be done by either party even if one of the two parties is deemed legally responsible for the potential crash. Younger pedestrians are better at avoiding a crash where they are legally having priority but were not seen by the motorist, no matter if the reason they weren't seen is bad illumination at night or that a driver is focusing on a smart phone rather than the exterior of their vehicle.

Elderly people walk slower than other pedestrians. Therefore, when they cross high-speed, wide streets, it is often the automobile driver rather than the elderly pedestrian that ensures safe interactions. For this to be possible, it is important that the driver is concentrated on the task of driving rather than having their attention focused somewhere else. One objective of this study has been to look at how pedestrian safety for elderly people in particular can be improved in spite of motor-vehicle drivers having more and more ‘distracters’ in their vehicles.

A focus of the study has been to look at how pedestrians interact—with respect to safety margins, misunderstandings, short post-encroachment times, conflicts, etcetera—with motorists who are being distracted to different degrees and in different ways, for example by using cellular phones. Pedestrian distractions, such as the pedestrian talking on a mobile phone, was also studied through field observations.

Cellphone and other electronic devices used while driving is a known problem. Currently there are laws in many states that prevent cellphone use while operating a moving vehicle. These laws intend to protect other drivers and pedestrians who use public roads. However, some people break these laws and use hand-held phones and even text or surf the internet while driving. Even if it is only a fraction of one percent who look at their phone while driving, which we found at observations of individual crosswalks, it still means that there every day are several people focusing on their phones rather than looking for pedestrians when crossing the crosswalk.

As earlier stated, pedestrians are also often distracted and/or not following rules. Interviews conducted by Garder shows that 16% of people walking against red light claim to be unaware of doing so. Observations of over 800 pedestrians in Bangor and Orono, Maine, show that around 40% of pedestrians cross during the Don't-Walk phase at signalized intersections. Obviously, many of these jaywalkers crossed when there were safe gaps in traffic but 19% of jaywalkers did so when vehicles were approaching and in close proximity. One misstep, and a critical situation could follow. Observations were also done at non-signalized locations. One of these were in a school zone and five near misses (slight traffic conflicts) were observed out of 97 pedestrians crossing when a crossing guard was present. This is a much higher rate of conflicts than at the same location when crossing guards were not present. There were zero near misses out of 266 crossing maneuvers when there was no crossing guard present, likely because pedestrians then waited for traffic to stop before stepping out into traffic.

Another common observation was that most pedestrians using a crosswalk with a push button for a walk signal did not attempt to push the button. In many cases, these pedestrians would rush across the street as soon as they were given the opportunity. It is clear from these observations that the most common age of distracted pedestrians is 18-24. They are the ones most often texting and also the ones most commonly wearing head phones, probably listening to loud music. To what extent such factors are contributors to accidents is hard to judge. An analysis of all fatal pedestrian crashes in New England in 2012 (139 accidents in all) did not find any cases relating pedestrian cellphone use to the accidents. However, this is also not a variable identified in FARS or other NHTSA data bases.

A final part of our studies was to get more information about what elderly pedestrians consider to be the major obstructions to them being able to walk safely to destinations, such as from one store to another, to a friend's house, etc. Interviews were done with elderly in Maine as well as in a few European countries. This study shows that getting very old means that a person feels [statistically significant] less confident than someone in their 60s. They have problems with "Urban environment not being well designed: too many stairs and other obstructions," They also have issues with ramps and non-level parts of sidewalks as well as not feeling safe when crossing major streets. Almost statistically significant issues for the very old are: "Too short walk phases at signals" and "bicycles on sidewalks." We also found that women feel much less confident in traffic than men do, and that women in particular find that the urban environment is not well designed and that walk phases are too short. Those are the issues where the gender differences are the greatest but women also have stronger opinions that the following are issues: Not finding destinations, Not being informed about dangers, Getting lost and not being found by friends or relatives, Urban environment not well designed: Too long distance to desired destinations (health centers, pharmacies, bus stops, grocery stores, etc.), Urban environment not well designed: The route I have to take is too unsafe or dangerous, Not being informed about other dangers (risks of assault, robbery, etc.), Not being safe when crossing major streets, Many streets are too wide (too many lanes), Vehicles traveling at too high speeds, Motorcycles, mopeds and bicycles using pedestrian paths. Men have stronger views than women with respect to only four areas: Urban environment not well designed: Confusing; Having mobile phone unavailable (discharged, broken, etc.) to get in contact with family; Not having a phone with GPS (guidance); and Not being informed about dangers (risks) in traffic.

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