

Summary

Injuries to pedestrians in Oslo in 2016

An analysis of injury data from Oslo medical emergency clinic

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Single accidents among pedestrians has traditionally received little attention as they are not included in the definition of traffic accidents. The Oslo medical emergency clinic (Oslo legevakt) collected in 2016 data on a total of 6309 pedestrian accidents. A total of 97 percent of these are single accidents. Most accidents are not very serious (minor fracture, concussion, wound injury), but seven percent are serious injuries (complicated fracture, severe head injury).

Most injuries are happening where people go the most - on sidewalks and walking areas. In winter, there are more than twice as many pedestrian injuries as in the summer. Most of the injuries in the winter are due to falls on ice and snow. Most injured have fractures or sprains in arms or legs. More women than men are injured as pedestrians, and the difference is increasing with increasing age. Better winter maintenance could significantly reduce the number of pedestrian injuries.

Single accidents as part of the accounts

It is a political goal to reduce car traffic in urban areas, and replace it with walking, cycling and public transport. The reasons for this are both environmental policy - to reduce noise and emissions from car traffic, and health policy - to make people more physically active. However, it is well documented that cyclists and pedestrians are more at risk as road users than car occupants, so it is important that the health benefits of increased exercise are not offset by more accidents and injuries.

Traffic accidents where pedestrians (and cyclists) have been hit by motor vehicles have been greatly reduced over time. We now know that single accidents among pedestrians and cyclists represent the vast majority of accidents and injuries to these groups of road users. These accidents are not defined as road traffic accidents because there is no vehicle involved. That they should nevertheless be included in the overall accounts can easily be illustrated by the following example:

Kari walks along a public road, falls and breaks her arm. Whether the damage occurred as a result of a collision or fall on the ice due to poor winter maintenance is irrelevant to the consequences for Kari (quality of life) and society as a whole (sickness absence).

She was injured as a road user on public roads, and it is therefore reasonable to consider such an accident as a road traffic accident. Pedestrians are regarded as road users in other contexts, and it is a political goal to get more to walk (and ride a bike) instead of driving a car. In such a perspective it seems illogical that pedestrians are not fully regarded as road users in the accident statistics.

Data from Oslo medical emergency clinic do not give the whole picture

Data on accidents and injuries among pedestrians were collected at Oslo medical emergency clinic in 2016. In total, 6309 pedestrian accidents were registered; 97 percent were single accidents. The majority of the accidents are less severe (minor fractures, concussions, wound injuries), but seven percent of the accidents led to serious injury (complicated fracture, severe head injury etc.). Such serious injuries are included in the vision zero definition of severe injury.

Severity is recorded on a scale from minor injury to critical injury according to the AIS-Abbreviated Injury Scale (AIS) scale. In this material no injury above AIS grade 3 has been reported (serious injury). Most single accidents lead to sprains and fractures that are not serious, and there are also very few of the collisions registered who has caused serious injury. This does not mean that pedestrians do not incur more serious injuries, but that the more seriously injured in many cases are sent directly to hospitals.

Most fractures are, however, first registered at the medical emergency clinic for X-rays and evaluation, since sector hospitals in Oslo is very restrictive to receive patients with fracture damage directly. This means that the vast majority also of serious fractures are registered by the medical emergency clinic, and as such represented in the data set. In order to get a better insight into which injuries are not represented, it would be interesting to supplement the data set with the data registered at the Trauma Register at Oslo University Hospital. It has not been possible to get permission for such data access.

This means that we do not have a complete picture of the injuries for pedestrians, but we still have considerably more information than previously available.

Most accidents in the winter months - women are more at risk than men

The majority of the accidents and injuries (70 percent) occur in the winter season. There are also more serious injuries in winter than in summer. Women are more prone to injuries than men, and the tendency is even clearer when it comes to serious injuries. Women actually have twice the likelihood of being injured as pedestrians as men have. And even though women walk more than men do, it can not explain the large difference in injury rates.

Most injuries are happening where people walk the most - on sidewalks and walking areas. A finding that may seem surprising is that we can not find any effect of winter maintenance (sanding) to the severity of injures. Inadequate sanding has an impact on how easy it is to stay on your legs, but when you first fall, it is a bit of a coincidence how serious the damage will be. Avoiding falls is basically the best measure to avoid injury. In the winter season, slippery streets and sidewalks are a clear problem area and easy to identify as a cause. In the summer season, 80 per cent have stumbled (about 1500 people), and the causes vary more than over the winter.

The fact that women are more prone to serious injuries than men can probably be explained by biomechanical differences. It is well known that women are more likely to be injured in the accidents they are involved in than men are. The risk of falling increases with increasing age, because the balance is reduced due to physiological changes. It is not necessarily the case that women fall more than men, but they are more injured when they fall. It is especially older women (55-84 years old) who suffer from fracture injuries.

About half of the damages have occurred without having a clear travel purpose such as work / school / trip etc. This is especially true of head injury, and men are overrepresented in such injuries. The analyses indicate that men are injured more often than women because they are "out on the town" and affected by alcohol.

Single pedestrian accidents - a matter of responsibility

We do not have data about where the injury occurs, and therefore we do not know if the injuries occur on roads or sidewalks where the municipality or state is the road owner and is responsible for operation and maintenance. Most streets and pavements in Oslo are on the municipal road network. Hence Oslo Municipality is primarily responsible for winter maintenance in the city.

Conclusion

The data from Oslo medical emergency clinic and our analyses show that fall on slippery corridors causes thousands of injuries each year. Among the injured pedestrians a third was of the opinion that the accident had occurred because of poor winter maintenance.

Fall accidents generally cause more serious injuries than other pedestrian accidents in this material. The most serious injuries caused by motor vehicles are in many cases sent directly to hospitals and are therefore not included in the data the medical emergency unit.

However, there are few such cases - in total, there were 20 serious injuries, two very serious injuries and two deaths among pedestrians in Oslo in 2016 according to the official statistics of police reported accidents.

Our data are from 2016, but the experience of during the winter 2017/18 shows that injuries due to slippery corridors are probably an even bigger problem now than it was in 2016. The large extent of such injuries, and the sometimes serious consequences, indicate that such injuries inflict huge costs on society in the form of public expenditures for health and social security and for the welfare of the population. In addition, the lack of winter maintenance contributes to the fact that a large number of elderly people do not dare to go outside, with greatly reduced quality of life as a result.

The Norwegian Public Roads Administration has a national responsibility for road safety and works according to the vision zero of no deaths or severe injuries in road traffic.

Very much has been achieved with regard to pedestrian safety in traffic, but the safety of pedestrians in preventing injury as a consequence of a fall or other single accident has been to a limited extent addressed, both among national and local authorities.

The zero vision should also include such injuries, and in that case it should mean that operation and maintenance to avoid single accidents among pedestrians became higher priority. A first step towards achieving such a priority would be to include single accidents among pedestrians on public roads in the definition of traffic accidents. In addition, there is both a need for better and more systematic registration of such injuries and to update the cost-benefit analyses of winter maintenance of pavements and other walking areas.