Submission ID: 94

Lund, Sweden
10-12 November 2021
ICSC International Cycling Safety Conference

E-scooters and accident risk - emergency clinic data from Norway

Aslak Fyhri, Nils Fearnley, Torkel Bjørnskau and Espen Jonsson

Keywords: e-scooters, accident risk, GPS data

Shared e-scooters have proven immensely popular. In Europe supply as well as demand sky rocketed during the summer of 2019. Previous literature suggests that electric scooters can be at high risk of accident. A study on e-scooters in Oslo showed that 10 percent of riders have had at least one accident with an e-scooter. Another survey found that approximately 20 percent had a near accident on their last ride. It is a challenge to calculate accident risk as it is difficult to establish estimates for exposure, i.e. kilometers driven, and estimates for the number of accidents. Previous estimates are given on rather rough assumptions, and in a North American context. Risk estimates from a European context is needed.

We have performed a data collection of three out of seven e-scooter providers in Oslo by means of publicly available e-scooter data from the National travel information provider Entur's API. We observed a total of 350 0000 trips. The data provided are as origin – destination GPS points with timestamps, which gives a rough estimate of travel distance. In order to calculate true travel distances, we have collaborated with one of the providers and made closer analysis of some

Accident data are from the Oslo medical emergency clinics (Oslo legevakt) 2019 registration of traffic accidents, where e-scooter for the first time was recorded as a transport mode. Severity is recorded on a scale from minor injury to critical injury according to the Abbreviated Injury scale (AIS) scale.

The full data set will be available by august 2020, but some preliminary results have been shared. These indicate that e-scooters have an accident risk that is ten times as high as conventional bicycles. More accurate and quality assured results will be presented at the conference, along with more detailed information on user groups and accident causes.