Electric micromobility devices: Balancing safety with sustainability

Electric micromobility devices, also called e-micromobility devices, including electric kick scooters (e-scooters) and electric bicycles (e-bikes) are economical, eco-friendly forms of active transportation. However, their use has raised concerns about the risk of injuries.

From 2021 to 2024, the BC government held the first phase of an e-scooter pilot project in 13 participating communities.[1] A new 4-year pilot was then initiated in more communities and to collect better health and safety data. However, people are using e-scooters across our region, regardless of whether they live in a formally participating community.[2]

In BC, e-scooter users must be 16 years of age or older, wear a helmet, not have passengers, not exceed speeds of 25 km/h, not ride while impaired, and generally not ride on the sidewalk.[3] Requirements are similar for e-bikes, which can travel up to 32 km/h. The use of lighter e-bikes with a maximum speed of 25 km/h is permitted by those 14 years of age and older.[4] However, enforcement and compliance with these rules have been challenging.

Statistics for e-micromobility device injuries are difficult to obtain due to a lack of complete, consistent, and reliable data; underreporting in charting notes; and inconsistent diagnostic coding. Several projects are underway across BC to improve injury data collection and surveillance in emergency departments, but results from these projects are not yet publicly available.

Review of e-scooter injuries shows a high prevalence of head, thorax, and extremity injuries, with low rates of helmet use[5,6] and drug/alcohol intoxication contributing to increased risk of head trauma.[6] E-bike riders had higher rates of spine and extremity injuries, higher ward and ICU admissions, a higher mean Injury Severity Score, an increased need for surgery, increased length of stay, and increased risk of death. This may be reflective of the mean age of users (i.e., generally older users).[7] Another source of injury and death related to these devices is fire from improper lithium battery recharging.[8]

From a public health perspective, a safe systems approach is critical to address the underlying determinants of road injury. Relevant components of this approach include safe road design (availability and quality of protected active transportation lanes), safe vehicles (devices designed and regulated to prevent altering or removing speed limiters postmarket), and safe road users.[9] Improving our understanding of the injury risks associated with e-micromobility devices requires better data on usage, standardized diagnostic coding, and improved reporting to better estimate injury rates.[10]

Balancing the physical health and environmental benefits of e-micromobility use while minimizing injury risk will be important as these devices become more popular. Currently, industry innovation in e-micromobility is outpacing government policy and regulation. Further government action through policies such as speed regulation and device compliance, education of drivers and vulnerable road users, and improvement of injury surveillance is required to promote and improve road safety in our communities. ■

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References continued on page 188

COHP

References continued from page 187

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BCCDC

References continued from page 183

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PREMISE

References continued from page 186

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