



**Major trauma associated with
Electric Micromobility (e-Mobility) Devices**
One-off Survey

BACKGROUND

Electric micromobility (e-mobility) refers to small electric personal transport devices such as electric bicycles (e-bikes), electric scooters (e-scooters), hoverboards, electric skateboards (e-skateboards), and electric unicycles (e-unicycles).¹ The adoption of e-mobility devices in Australia is widespread. For example e-scooter use in Australia has surged 800% since 2016.² In parallel, trauma centres report near-exponential rises in injury rates and e-scooter riders face a 3.8 times higher risk of injury than traditional pedal cyclists.^{3,4} The rapid growth in the use of e-micromobility devices has outpaced both regulatory development and the provision of appropriate road infrastructure, contributing to elevated injury rates and placing a substantial financial burden on healthcare systems.² The inherent instability (small wheels, high centre of gravity) of e-scooters drives frequent falls (78%) and high-speed crashes with severe morbidity.^{5,6} Despite national helmet mandates for traditional pedal cyclists, laws for e-mobility devices vary by Australian jurisdiction and non-use of helmets varied between 36% and 98% in recently published cohorts of e-scooters users from Queensland and the Australian Capital Territory.^{5,6} Due to developmental immaturity, children face amplified risks of injury when using e-mobility devices, including life-threatening head trauma, upper limb fractures, maxillofacial injuries, friction burns and frequently require surgery.^{3,5,7}

Despite the increasing use of e-mobility devices and associated injuries in children and adolescents, Australian data on the nature and severity of paediatric injuries and outcomes from the use of e-mobility devices are limited to two published retrospective medical record reviews in Queensland^{5,8} and one in Western Australia², with similar reviews currently underway in NSW and Victoria. No data are available in Tasmania, South Australia, Northern Territory or in Australian Capital Territory. The APSU's established paediatric specialist network will uniquely enable conduct of a national one-off survey to collect baseline data from child health specialists in each Australian state and territory about children and adolescents who were hospitalised in the first half of 2026 with major trauma/injury associated with use of e-mobility devices. Details of the circumstances and types of major trauma/injury sustained will be collected and matched with individual state and territory-based legislation on e-mobility safety (where it currently exists), to contribute to evidence-based public health policy, regulatory reform and community awareness.

SURVEY OBJECTIVES

1. To identify the number of Australian children and adolescents (aged <17 years) who were seen by paediatricians and other child health specialists with major trauma/injury related to an e-mobility device and required hospital admission during the first half of 2026, and their demographic characteristics, including age, gender, ethnicity, geographic remoteness and socio-economic relative advantage and disadvantage (as determined by residential postcode).
2. To document the type(s) of major injuries sustained by children and adolescents who were hospitalised from an e-mobility device.
3. To identify the Australian states and territories in which the major trauma/injury related to e-mobility devices has occurred, and to compare with state or territory-based legislation regarding e-mobility safety (where it currently exists).
4. To describe the circumstances in which the major trauma/injury was sustained, including the mechanisms of injury (falls vs. collisions) and compliance with the wearing of protective helmets.

5. To describe hospital management of major trauma/severe injury, including radiological investigations and surgical interventions as well as intensive care unit admission, length of stay and short-term outcomes.

CASE DEFINITION

Please report any child aged <17 years who was admitted to hospital between 1 January and 30 June 2026 with major trauma/injury sustained while operating, riding as a passenger on, or being struck as a pedestrian by an e-mobility device (e.g. e-bike, e-scooter, hoverboard, e-unicycle or e-skateboard – refer to example images on page 4 of this document).

Note: “major trauma” in this survey is defined as: “a serious injury or combination of injuries that has the potential to cause death or long-term disability and usually requires urgent, specialised medical care”ⁱ

Exclusions: Children with trauma associated with an e-mobility device who were discharged from the emergency department (ED) and not admitted to hospital (i.e. were only treated in the ED and were not transferred to another treatment location within the same facility, e.g. inpatient ward, operating theatre, short stay unit).

ⁱ Examples include: traumatic brain injury, spinal cord injury, chest injuries (e.g., pneumothorax requiring intervention, haemothorax, myocardial injury, multiple rib fractures (often ≥ 3 ribs), diaphragmatic rupture or penetrating chest injury requiring operative or specialist management, abdominal or pelvic injuries (e.g., liver, spleen, kidney, bowel, bladder, or pancreatic injury), limb injuries (e.g., long-bone fractures, pelvic fractures, fracture-dislocations, open fractures, vascular injuries, compartment syndrome, traumatic amputations), severe maxillofacial injury (e.g., complex facial fractures such as Le Fort I–III and orbital fractures), severe eye injuries (e.g., globe rupture or retinal detachment), multiple trauma/polytrauma involving more than one body region, significant internal bleeding, severe burns (e.g. $\geq 10\%$ TBSA) and fatal injuries (e.g., crush injuries).

FURTHER INFORMATION

For further information related to this study or assistance completing the Case Report Form, please contact the APSU by email at: SCHN-APSU@health.nsw.gov.au

SELECTED REFERENCES

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Examples of Electric Mobility Devices

e-Bike



Image by Bicicletas Electricas from Pixabay

e-Scooter



Photo by Yiting He on Unsplash

e-Hoverboard



Image by Elias from Pixabay

e-Unicycle



Photo by Reaksmey Thou on Unsplash

e-Skateboard



Photo by Yomex Owo on Unsplash