Response to National Transport Commission Issues Paper: Barriers to the safe use of innovative vehicles and mobility devices

MARCH 2019

TO: National Transport Commission (NTC)

FROM: Royal Australasian College of Surgeons (RACS) National Trauma Committee and the Australasian Injury Prevention Network (AIPN)

KEY CONTACTS:

- Associate Professor Kirsten Vallmuur, MAIC Principal Research Fellow, Australian Centre for Health Services Innovation, Queensland University of Technology and Jamieson Trauma Institute; Member of RACS National Trauma Committee; Member RACS Queensland Trauma Committee
- Dr Matthew Hope, Deputy Director of Trauma, Orthopaedic Unit, Division of Surgery, Princess Alexandra Hospital and Metro South Health Service; Member of National Trauma Committee Royal Australasian College of Surgeons; Chair RACS Queensland Trauma Committee
- Dr Ben Beck, Deputy Head Prehospital, Emergency and Trauma Research, Public Health and Preventive Medicine, Monash University; President, AIPN.

RESPONSE TO SELECTED QUESTIONS FOR COMMENT

What are the practical and measurable outcomes required from a nationally consistent policy and regulatory framework for innovative vehicles?

Before the introduction of any new innovative vehicle to the marketplace, a broad consultation process should be undertaken with the key stakeholders who have a role in either enforcing, monitoring or responding to issues that arise due to the use of these vehicles. This includes, but is not limited to:

- Regulators: Transport, local council, workplace health and safety, fair trading/product safety units;
- Enforcement: Police, security agencies;
- Responders: Ambulance, trauma clinicians, allied health professionals;
- Funders: Compensation providers (vehicle, health and workplace);
- Community: Pedestrian advocacy groups, health promotion groups, injury prevention agencies etc.

This consultation process would help inform the safe implementation of such vehicles into the community, and the design of an evaluation framework, including the identification of a broad range of available and desirable indicators for measuring the impact of the innovative vehicle.

From the health indicator perspective, the current data sources are limited in their ability to capture specific details regarding innovative vehicle use, with vehicle classifications (where they are used) largely confined to broad categories, such as bicycles, motorcycles, cars, trucks, buses etc. in keeping with the International Classification of Diseases (ICD) approach. There is significant variation in the data availability and vehicle classifications used in ambulance service and emergency department data sources across Australia, and while hospital data is nationally consistent in collection, the only ICD-10-AM codes to capture motorised scooters, for instance, are:

- W02.9 - Fall involving other and unspecified pedestrian conveyance *(includes motorised scooter and falls out of shopping trolleys amongst other devices and is only applicable if there is no other vehicle or conveyance involved in the incident)*
- V00.14 - Pedestrian injured in collision with pedestrian conveyance, traffic accident, scooter, powered *(this includes when one or both parties are using a motorised scooter but the fifth character of the code only identifies if the counterpart was a motorised rider, not if the person injured was also a motorised scooter rider).*

Furthermore, while there is a process whereby requests can be made to update the ICD-10-AM classification system used to capture the cause of injury hospitalisations, highly specific requests for types of innovative vehicles to be included are unlikely to be approved and even if they are, the process for rolling out a new edition of the ICD-10-AM takes several years. Furthermore, hospitalisation data is generally not available for analysis until approximately one year after discharge from hospital and requires data approvals for release.

Therefore, there is a clear need to be able to identify robust mechanisms to be able to monitor injuries associated with innovative vehicles. For example, there are new opportunities to capture specific details in a more responsive, real-time manner as the roll-out of integrated electronic medical record (iEMR) systems occurs throughout Australia. As data becomes increasingly digitised and centrally accessible through integrated intelligence systems, there may be capacity for centralised querying of these data to identify mentions of the use of emerging innovative vehicles. There may also be capacity for designing triggers in front-end data entry platforms to capture more specific information for ad hoc surveillance projects to enable real-time monitoring of injury presentations to emergency departments. It would be beneficial for such opportunities to be explored with key agencies, such as the Australian Digital Health Agency, to assess the feasibility of utilisation of such a system for future surveillance initiatives.

What evidence-based distinctions between acceptable and unacceptable levels of risk associated with the use of innovative vehicles could be considered to inform the way innovative vehicles are regulated?

In order to determine whether the risk is 'acceptable', the risks associated with innovative vehicles need to be considered in the broader context of risks associated with other pedestrian conveyances which are accepted and used routinely by the community, such as bicycles and non-motorised wheeled devices (e.g. skateboards, scooters). While injuries can and do occur while using these devices, they can serve as a baseline for a level of risk that the community does and has accepted for decades. Thus, to evaluate whether the level of risk associated with innovative vehicles is acceptable, data are required which enumerates:

- the number and severity of injuries in relation to innovative vehicle types *and* other commonly used pedestrian conveyances;
- the size and demographics of the user population for innovative vehicle types *and* other commonly used pedestrian conveyances;
- the costs of treatment and outcomes of patients injured using innovative vehicle types *and* other commonly used pedestrian conveyances;
- the responsible parties bearing the costs for care of injured parties injured using innovative vehicle types *and* other commonly used pedestrian conveyances (i.e. the community burden);
- the biomechanical hazards and thresholds of injury tolerance associated with the use of innovative vehicle types *and* other commonly used pedestrian conveyances at different speeds and using different safety devices (such as helmets);
- the dynamic interactions between and hazards to 'on foot' pedestrians and innovative vehicle types *and* other commonly used pedestrian conveyances (e.g. how pedestrians react to conflict situations with different types of devices and speed of response to avert collisions);
- the differential impact road and footpath infrastructure have in relation to innovative vehicle types *and* other commonly used pedestrian conveyances (e.g. impact of different footpath surfaces or maintenance issues for small wheeled devices to larger rubber wheeled devices etc.).

How do current classifications of drivers of wheelchairs as both 'pedestrians' and 'vehicles' in the Australian Road Rules create confusion?

While this question references 'wheelchairs', the question is equally applicable to innovative vehicles such as motorised scooters. It is our understanding that currently motorised scooter riders are considered pedestrians and would only be of interest to road safety authorities as 'vehicles' if involved in a collision with another 'vehicle'. However, this presents challenges for regulation, monitoring, and compensation avenues for both the motorised scooter rider and other parties involved in any collision (whether they be pedestrians or vehicles). Clarification of this distinction is required to avoid such confusion.

Is there a need for construction and performance requirements for motorised mobility devices to ensure safe use on public transport infrastructure?

There is a complicated web of regulators involved in ensuring the safety of innovative vehicles, including but not limited to transport authorities (vehicles, road rules and road infrastructure), local councils (transport share scheme permits, local infrastructure), workplace health and safety (worker journey safety), fair trading/product safety units (consumer hire schemes, goods 'safe and fit for purpose' requirements). There is limited opportunity for enforcement in the current consumer product safety legislation, with regulators required to demonstrate systemic failures before intervention (in the form of safety recalls) can be enacted. There is discussion at a national level for the introduction of a General Safety Provision that would place the onus on Australian manufacturers and suppliers of products to demonstrate their products are safe before being sold/hired to the community. A broad safety provision such as this would be desirable, especially in the area of innovative vehicles, where it is difficult to develop generic construction/performance requirements that would cover the range of emerging vehicles in the marketplace.

What evidence is available on the road safety risks associated with motorised mobility devices that could be used to inform the way motorised mobility devices are regulated?

In order to gather injury surveillance data in Brisbane during the trial of Lime scooters, the Jamieson Trauma Institute (Brisbane), on behalf of RACS Qld Trauma committee, liaised with local Emergency Departments (EDs) and the Queensland Ambulance Service to collect and compile deidentified aggregate data for presentations related to the use of Lime scooters (electronic rental scooters). Flyers with photos of different types of personal motorised mobility devices were distributed to all EDs around central Brisbane and to the Queensland Ambulance Service, seeking their assistance in clearly documenting the type of scooter in the ambulance case description/ED triage text. Clinical staff were asked to specifically document the type of scooter using preferred terms which were provided, as well as asked to document the injury circumstances as completely as possible including how and where the incident occurred, whether a helmet was worn, speed (if known) and whether the injury was as a result of or associated with alcohol consumption. These data were then compiled for ambulance attendances as well as for presentations at four public EDs (three adult and one paediatric) and one private adult ED in Brisbane during a period slightly over a two-months. Note that these data are self-reported, rely on documentation in the clinical notes to specifically mention a 'Lime scooter' involvement and may be incomplete, and therefore should only be used as indicative estimates until more comprehensive data collection measures are implemented.

Examining the ambulance attendance data, there were a total of 30 presentations which were specifically documented as Lime scooter-related attendances with an age range from 16-75, with 20-34 year olds accounting for 53% of ambulance attendances overall and an equal number of males and females treated. Saturdays and Sundays were the most frequent days with 60% of ambulance attended cases occurring on the weekend. Where there was documentation of the injury treated, 76% were for contusions/abrasions and 19% for a head injury (not specified if major or minor). Over 83% of cases were transported to hospital as a result of their injuries.

ED presentation data for five central EDs in Brisbane identified a total of 134 patients presenting for treatment of an injury after a Lime scooter-related incident (which also includes cases not transported by ambulance). This is almost 70 ED injury presentations per month over the approximately two-month period related to the use of Lime scooters. Ages ranged from under 5 years to 81 years, with 20-34-year-old patients accounting for 63% of cases overall, with males accounting for 54% of cases and females accounting for 46% of cases. Over 31% of patients arrived at the ED by ambulance. Hospital admission was required as a result of these injuries in 11% of cases, and surgery was required in 10% of cases (only two hospitals provided data on whether an operation was required). Four hospitals (n=109) provided data on injuries treated with minor head injury recorded for 11% of cases, 3 major head injuries treated, upper limb fractures treated in 21% of cases, lower limb fractures treated in 6.4% of cases, sprained/strained limbs treated in 17.4% of cases, almost 60% of cases requiring treatment for contusions/abrasions, and one thorax injury treated (some cases had multiple injuries recorded hence percentages exceed 100%).

Helmet use was poorly documented across all ED sites with only 22% of cases mentioning whether a helmet was worn or not, and of those that mentioned helmet status, 28% stated a helmet was not worn. Alcohol use was documented for 16% of cases presenting to the ED. Documentation of speed was variable and only recorded in 35% of cases, but of the cases where a speed was mentioned, 28% suggested the speed was 30kph or greater (though the accuracy of speed estimation is uncertain).

While there has been documentation of numerous injuries arising from the use of these new personal mobility devices, we do not know whether they are associated with an increase in injuries per person or per journey, compared with other transport options. More comprehensive data are needed on the number and type of injuries sustained in order to understand the safety profile of these new personal mobility devices.