An Evaluation Framework for Pedestrian Safety in Victoria

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Abstract

Walking is undergoing a marked revival; urban living, health considerations and the need for sustainable transport are key reasons. However, more walking can mean increases in severe trauma. This paper describes a practical, scientifically-based evaluation framework to assess a program of thirty projects designed for Safe System performance. Victoria's Safe System Road Infrastructure Program includes $100 million for a variety of pedestrian (and cyclist) safety measures, only some of which have been reliably evaluated. Given the program's financial and geographic scale, early, comprehensive indications of effectiveness of individual treatments and of combinations of treatments will enhance future targeting of investment.

Background

Walking as a mode of transport is undergoing a marked revival. Rapid growth in urban living, the proven health benefits of walking and its strong alignment with the goal of creating a sustainable of transport system are key reasons. However, with more walking comes increasing exposure to the risks of severe trauma where pedestrians need to mix with traffic. Great gains have been made over recent decades in reducing severe trauma involving pedestrians. In Victoria, an average of 150 pedestrians died each year during the 1980s[1], while today's annual figure lies between 30 and 40 deaths[2]. For every pedestrian killed, there are around ten serious injuries reported to police, with a substantial but unknown number of major falls and less severe injuries not reaching official records[3].

In an effort to maintain the momentum of past successes, and drive pedestrian deaths substantially closer to zero, the Safe System Road Infrastructure Program (SSRIP) is investing around $100 million in improving the safety of pedestrians and cyclists. This involves treating around 25 areas of high risk to pedestrians, in metropolitan Melbourne and regional Victoria, with combinations of speed, infrastructure and operational measures, aligned with the Safe System. Rigorous evaluation is being undertaken to help ensure that future investment in projects of this type is as cost-effective as possible. This paper outlines the overall approach to evaluating this innovative, large-scale program.

Method

The proposed evaluation framework focusses on four broad categories of metric to assess investment at multiple levels, namely, program, project, treatment type and individual treatment levels:

- **serious casualties-based** metrics, to indicate the impact of SSRIP investment on the ultimate measure - serious casualties involving pedestrians;
- **risk-based** metrics, to evaluate innovative treatments, as well as to gain the earliest practical indications on safety, rather than needing to wait until adequate crash data are available;
- **perceptions-based** metrics, to understand more fully the views of road users, residents, business owners and others who may be affected, on qualities such as accessibility, walkability and liveability;
- **direct measurement of other non-safety impacts**, such as traffic displacement, noise, amenity and mobility.

Specific metrics are proposed for each category, and guidance provided on study design and data requirements to help ensure the scientific rigour of these diverse, large-scale evaluations.

Results and conclusions

This paper describes a practical, scientifically-based evaluation framework developed to assess the impact of almost thirty pedestrian safety projects designed to align with Safe System principles. The $100 million pedestrian and cyclist safety component of SSRIP comprises a wide variety of pedestrian measures, such as reductions in speed limit to 40 or 30 km/h, alterations to traffic signal hardware, phasing or other operational parameters, new or modified roundabouts, kerb extensions, safety platforms, wombat crossings and new pedestrian signals. Some of these measures have been previously evaluated, while others have not been subject to robust evaluations. Given the financial and geographic scale of investments, early, comprehensive indications of the effectiveness of both individual and combinations of treatments, are vital to targeting future investment with greater precision and cost-effectiveness.

References

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