

Saving lives through vehicle safety



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In the first two decades of the 21st century, more than 25 million people lost their lives to road traffic collisions—approximately 1.35 million per year or a death rate of 18.2 per 100 000 population.¹ During the same time period the number of vehicles in circulation has steadily increased to well above the 2 billion mark, with death rates per 100 000 vehicles declining from 135 to 64 while rates per 100 000 population have remained static.¹ These figures show that some small improvements have been possible, but much more action is required if we are to make progress towards the new 50 by 30 target (an extension of Sustainable Development Goal 3.6) called for by ministers who attended the 3rd Global Ministerial Conference in Stockholm (Sweden) in February, 2020.²

The world report on road traffic injury prevention published by WHO and the World Bank in 2004 moved away from the old paradigm of blaming the road user to one of promoting a safe system.³ This approach was endorsed by both World Health Assembly and United Nations General Assembly resolutions. The safe systems approach, sometimes also referred to as vision zero, recognises that humans are fallible and thus promotes a shared responsibility between road users, vehicles, and infrastructure to ensure a high level of safety.⁴

Vehicle safety technology plays an important role in reducing trauma from road traffic crashes^{5,6} and was recognised in the UN Decade of Action for Road Safety global plan as pillar 3—safer vehicles.⁷ Vehicles that are well designed with appropriate safety technologies can accommodate human error through crash avoidance technologies, such as automatic braking systems, electronic stability control, and through limiting the effects of kinetic energy on the human body through crashworthiness technologies, such as seatbelts, airbags, and pedestrian protection.

However, not all cars and motorcycles around the world are assembled, sold, and operated with the same level of safety despite the promotion of eight priority safety standards by the UN.⁶ In fact, only 40 (mainly high-income) countries have implemented seven or eight of these standards, while 124 (mainly low-income and middle-income) countries apply none, or only one, of these standards.¹ Unfortunately, it is in low-income and middle-income countries for which numbers of

vehicle ownerships and collisions are growing the fastest and thus account for around 90% of road traffic deaths worldwide.¹

Most high-income countries have had safety standards in place for many decades and have shown how effective they are at saving lives. In the USA, for instance, technologies associated with the US federal motor vehicle safety standards prevented more than 600 000 deaths between 1960 and 2012.⁸ Up until now, little robust evidence has been available on how many lives could be saved in low-income and middle-income countries.

Kavi Bhalla and Kevin Gleason's study in *The Lancet Global Health* used counterfactual analysis to assess whether nine proven vehicle technologies would save lives if they were made widely available in Latin America. They found that electronic stability control would have the largest benefit in terms of both reductions in deaths and injuries. Increasing the use of seatbelts and child restraints and improving side and front impact through design modification would save further deaths. Improved vehicle design would result in 28.1% (12.8–39.2%) fewer deaths and 29.1% (13.5–39.8%) fewer DALYs in the Latin and Caribbean region. By extrapolation, this important piece of research means that if every vehicle in the world was upgraded to the safest in its class, approximately a quarter to a third of road traffic deaths and injuries could be averted.⁹

Recognising this potential, the academic expert group to the 3rd Ministerial Conference on road safety recommended that "...vehicle manufacturers, governments and fleet purchasers ensure that all vehicles produced for every market be equipped with recommended levels of safety performance, that incentives for use of vehicles with enhanced safety performance be provided where possible, and that the highest possible levels of vehicle safety performance be required for vehicles used in private and public vehicle fleets".¹⁰ Likewise, ministers attending the conference agreed to ensure "...that all vehicles produced and sold for every market by 2030 are equipped with appropriate levels of safety performance, and that incentives for use of vehicles with enhanced safety performance are provided where possible".²

Improving the safety of vehicles around the world is one of the most sustainable road safety interventions

available. Making the public aware of vehicle safety through new car assessment programmes is crucial. Improving awareness of vehicle safety, coupled with the promise from governments to ensure that all their vehicles, including motorcycles, are equipped with the highest safety standards by 2030, could save millions of lives and dollars.

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Margaret Peden

margie.peden@georgeinstitute.ox.ac.uk

The George Institute for Global Health UK, Oxford OX1 2BQ, UK; and The Department of Women's and Reproductive Health, Oxford University, Oxford, UK

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