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Global enhancement of vehicle safety - the urgency of now

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Introduction

The United Nations (UN) Global Goals for Sustainable Development have set the ambitious goal of reducing road fatalities and serious injuries by 50% by the end of the current UN Decade of Action for Road Safety (2011-2020). The Global Goals represents the UN's strongest ever mandate for action to promote road safety and provides new urgency in the implementation of the Global Plan for the Decade of Action, which recommends actions across the five policy areas of:

- Pillar 1: Road safety management
- Pillar 2: Safer roads and mobility
- Pillar 3: Safer vehicles
- Pillar 4: Safer road users
- Pillar 5: Post-crash response

Under Pillar 3, UN member states are encouraged to apply requirements to ensure new vehicles have seatbelts and anchorages installed that meet regulatory requirements, pass applicable crash test standards and support the adoption of crash avoidance technologies such as Electronic Stability Control (ESC). In April 2016, the UN General Assembly adopted a resolution which included a strong section on vehicle safety, inviting member states that have not already done so to adopt minimum safety standards and safety technologies, providing further endorsement for the importance of safe vehicles.

Safe vehicles is an important pillar under the Safe System approach to road safety and its safety potential in reducing serious trauma by preventing crashes and

protecting occupants is well supported (Newstead et al, 2004). Safe vehicles is amongst the most sustainable road safety intervention available as once a vehicle is designed and manufactured to a safe safety standard and has the appropriate technologies, the safety benefits should continue to accrue throughout the life of the vehicle. It is therefore concerning that there is still a large number of countries that do not apply at least minimum safety standards for vehicles produced and sold; allowing sub-standard cars to be made available to the public.

While significant gains have been made in vehicle safety in high income countries, the same cannot be said in the low and middle income countries who are experiencing rapid increases in motorisation but also account for 90% of global road deaths (WHO, 2015). There is an urgent need to democratise safety globally through the universal application of minimum vehicle safety standards and empowering consumers to purchase the safest car they can afford. Every vehicle sold that does not meet at least minimum safety standards is an opportunity lost. Therefore, with the 2020 goal in mind and with the long lead time for the penetration of technologies and replacement of the vehicle fleet, the time to act is now.

The need for universal application of minimum vehicle safety standards

Not all cars are created equal and some are safer than others. This can be a function of the vehicle safety regulations of the producing country. While the UN World Forum for Harmonisation of Vehicle Regulations provides a legal framework for a range of vehicle safety standards for UN member states to adopt voluntarily, many countries

do not. It was found in a recent survey that only 40 out of a total of 193 UN Member States fully applied seven priority vehicle safety standards recommended by Global NCAP (WHO, 2015). The seven standards (or their equivalents) included:

- UN Regulation 94 Frontal Impact
- UN Regulation 95 Side Impact
- UN Regulation 13H Electronic Stability Control
- UN Regulation 127 Pedestrian Protection
- UN Regulation 16 Seat Belts
- UN Regulation 14 Seat Belt Anchorages
- UN Regulations 44 and 129 Child Restraints

Results from the survey showed that adoption of the standards was overwhelming by high-income countries (Figure 1). This is despite, large middle income countries accounting for approximately 50% of passenger car production globally (Organization of Motor Vehicle Manufacturers, 2015) and the fastest growth in motorisation.

The lack of universal adoption of the minimum standards creates a loophole in which manufacturers can produce and sell sub-standard cars in countries that have not applied the standards, typically in low and middle income countries. Some examples include:

- Chevrolet Aveo, a best selling car in Mexico received a zero star rating by Latin NCAP in 2015. The car did not have airbags fitted and would have failed the UN's minimum vehicle safety standards (Latin NCAP, 2015).
- Suzuki-Maruti Alto 800, a best selling car in India received a zero star rating by Global NCAP in 2014. The car did not have airbags fitted and would have failed the UN's minimum vehicle safety standards (Global NCAP, 2014).
- Nissan Tsuru, a top selling car in Mexico, which received a zero star rating by Latin NCAP in 2013 did

not have airbags fitted and would have failed the UN's minimum vehicle safety standards (Latin NCAP, 2013).

All three of these cars would have been illegal for sale in countries that have more stringent regulations such as in Australia, Europe or the USA; demonstrating the urgent need for governments around the world to apply these standards. Road safety is a shared responsibility and while governments have the responsibility to ensure their citizens have access to safe vehicles, manufacturers also have a responsibility to ensure their vehicles are safe for consumers. Even in the absence of regulatory requirements, it is still unacceptable that unsafe cars are being produced in low and middle income regions when it is evident that much safer standards can be reached by the same manufacturers in more affluent regions.

It has been argued that it can be too expensive to apply UN regulations and vehicle technologies resulting in unaffordable cars in the low and middle income countries. However, with the growing use of global manufacturing platforms and economies of scale, increasing the safety of a vehicle is not prohibitively expensive and actually very affordable. For example, a typical price of an airbag, a key safety feature to pass Regulation 94, sold by suppliers cost only approximately \$50 (Global NCAP, 2015).

There is no doubt that if at least minimum vehicle safety standards are universally applied, countless lives can be saved. A report commissioned by Global NCAP found that if Brazil was to apply the UN Regulations for seat belts, anchorages, occupant protection in frontal collision and occupant protection in side or lateral collisions, over 34,000 lives could be saved and 350,000 serious casualties prevented between 2015-2030 (Cuerden et al, 2015), demonstrating the lifesaving potential of standards application.

The role of NCAPs in global vehicle safety

In parallel to regulatory action, increasing consumer knowledge and demand for vehicle safety and technologies have been an important part of the equation in enhancing vehicle safety globally. Consumers cannot demand what they do not know and NCAPs play an important role in assisting car buyers to make safer purchasing decisions by providing them with independent safety advice which in turn encourages manufacturers to produce safer vehicles. NCAPs also play a role in encouraging manufacturers to voluntarily fit safety technologies in advance of any regulatory mandate and produce safer vehicles.

Since the inception of the first NCAP in 1978, there are currently

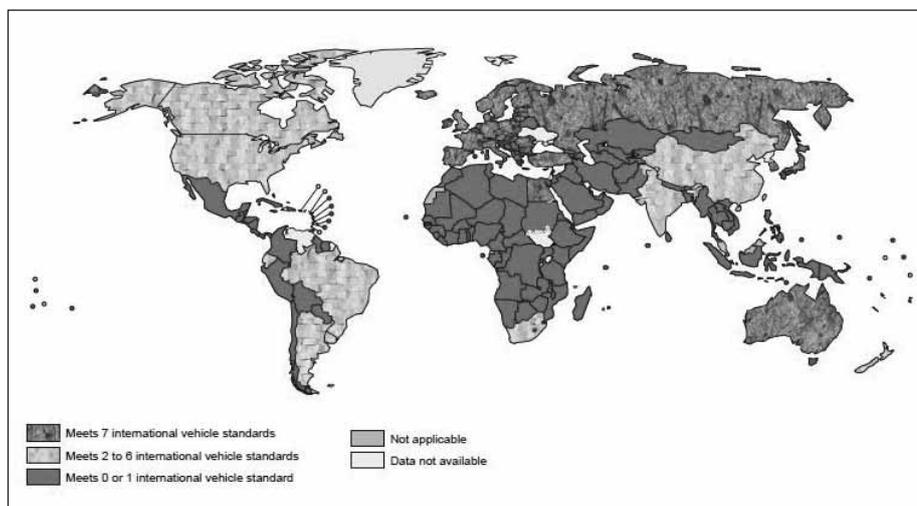


Figure 1. Countries Applying Priority UN Vehicle Safety Standards (WHO, 2015)

nine NCAPs worldwide in Asia, Australia, Europe, Latin America and the USA. NCAPs have been highly successful in influencing the supply and demand for safer vehicles and increasing the proportion of vehicles achieving better performance. An example is Australasian NCAP (ANCAP), where in 2002, no vehicles tested achieved a 5 star rating to 2014 where 75% of models on sale achieved a 5 star rating (Paine et al, 2015). With the improvement of a 1 star ANCAP rating associated with a 20-25% reduction in the risk of serious injury to the driver (Paine et al, 2013), encouraging consumers to purchase the safest vehicle they can afford and putting pressure on manufacturers to produce safer vehicles via NCAPs can go a long way in helping reduce deaths and serious injuries. This is an especially important consideration in regions that have rapid increases in motorisation and no minimum vehicle safety regulations. With the lack of minimum safety standards, consumers have no guarantee that the vehicle they purchase will at least afford them a basic level of safety and NCAP testing fills this knowledge gap. NCAPs inform consumers that safety is not just a luxury option and a safe car does not necessarily have to be unaffordable, as demonstrated by the Perodua Axia which cost US \$8000 and achieved four star occupant and child protection results under the Southeast Asia vehicle assessment program, ASEAN NCAP (Global NCAP, 2015). While star ratings are not equivalent between the NCAPs, in all test programs, the higher the number of stars, the safer the vehicle for that region. A key element to enhancing vehicle safety globally is to expand NCAP testing to every world region and increase access to independent crash testing information to stimulate the demand for the production and purchase of safe vehicles.

Democratising vehicle safety – no more zero star cars

In March 2015, Global NCAP, the coordinating platform between all the NCAPs and advocate for the development and adoption of policies that enhance and accelerate the progress of vehicle safety globally, published ‘Democratising Car Safety: Road Map for Safer Cars 2020’ (Global NCAP, 2015) which calls for the combination of stronger consumer information and universal application of minimum international standards for crash protection and avoidance. The road map sets out a strategy to ensure vehicle safety is democratised in all world regions with ten key recommendations which include a package of minimum safety regulations for adoption by the end of the UN Decade, measures to promote a market for safety among consumers in rapidly motorising countries, policies to sustain the safety of the vehicles once in use and a proposed industry voluntary commitment to implement minimum occupant safety standards to all new passenger cars (refer to Figure 2). If the recommendations in the Road Map are applied, all new cars worldwide would pass the minimum UN Standards for crashworthiness and crash avoidance and there will be no more zero star cars produced, helping mitigate the risks of rapid motorisation and reduce the number of preventable fatalities and serious injuries globally.

Road Map for Safer Vehicles 2020 UN Regulations* for:		All New Vehicles Produced or Imported	All Vehicles Produced or Imported
	Frontal Impact (No.94) Side Impact (No.95)	2016	2018
	Seat Belt & Anchorages (No.14 & 16)	2016	2018
	Electronic Stability Control (No. 13H / GTR. 9)	2018	2020
	Pedestrian Protection (No.127 / GTR. 8)	2018	2020
	Motorcycle Anti-Lock Brakes (No. 78 / GTR. 3)	2016	2018
	Autonomous Emergency Braking Systems	Highly Recommended	Highly Recommended

*or equivalent national standards such as US FMVSSs

Figure 2. Global NCAP Road Map for Safer Vehicles by 2020 Timeline

Help #STOPTHECRASH

The crash prevention and crash protection properties of a vehicle are both critical elements in helping protect occupants and other road users from death or injury, but where possible, preventing a crash from occurring would always be the preferable option. There are a number of crash avoidance technologies available that can prevent many types of crashes before they happen with proven real world effectiveness, including ESC, Autonomous Emergency Braking (AEB) and Motorcycle Anti-lock Braking System (ABS). To support the UN Global Goals and the Decade of Action, Global NCAP is leading a multi-stakeholder partnership (with ADAC, Autoliv, Bosch, Continental, Denso, Thatcham, ZF-TRW, the Towards Zero Foundation and Consumers International) called Stop the Crash to promote these three lifesaving crash avoidance technologies and tyre safety. The campaign’s objective is to encourage governments to adopt relevant UN global standards so that the technologies eventually become a regulatory requirement for new vehicles. The inaugural Stop the Crash event was launched in Brasilia on the occasion of the 2nd Global High Level Conference on Road Safety in November 2015 (Figure 3) and more major events are planned to raise awareness and increase adoption and purchase of these technologies.



Figure 3. Stop the Crash Demonstration in Brasilia 2015

Conclusion

A vehicle's lifespan is approximately 20 years and it takes on average at least 15 years for a vehicle fleet to be completely replaced. Therefore, every vehicle sold that does not meet the best safety standards and are not equipped with the best safety technologies as currently known, represents an opportunity lost and the vehicle will continue to operate at greater risk for the rest of its lifespan. There is an urgency for prompt action now as with every year of delay, the millions of sub-standard vehicles produced will remain on the road for decades to come. Vehicle safety should not be an optional extra and people in all regions of the world should have access to safe vehicles. The right actions taken now will ensure a safer vehicle fleet for all in the years ahead.

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The role of GRSP in global road safety and priorities for achieving ambitious road fatality reduction targets

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Introduction

Although road trauma has been acknowledged as a humanitarian issue since the late 1990s, it has struggled to be recognised as a global priority. One of the first global-level reports to give attention to the issue was the International Federation of the Red Cross and Red Crescent Societies' (IFRC) World Disaster Report 1998. While this contributed to the establishment of the Global Road Safety Partnership (GRSP), it did not lead to a global level response. A major step forward occurred in 2011 when the United Nations established the Decade of Action for Road Safety (2011-2020). Besides representing the

first truly global response to the issue, it was supported by a Global Plan that specified a road fatality reduction target and established a framework for action around five pillars involving: building road safety management capacity; improving the safety of road infrastructure and broader transport networks; further developing the safety of vehicles; enhancing the behaviour of road users; and improving post-crash care. Importantly, the Global Plan for the Decade of Action for Road Safety 2011-2020 was built around clear guiding principles including: the need to adopt a safe systems approach to road safety, which acknowledges the limitations and vulnerabilities of humans within the road transport system; the value of a public health approach that focuses on the implementation of evidence-based