Road Traffic Safety Management Standard: Progress Towards the United Nation's Sustainable Development Goal No. 3.6

By Esther Oh

University of Massachusetts Amherst
School of Public Policy

Abstract: In 2008, the World Health Organization (WHO) conducted its first-ever broad and uniform assessment which surveyed the road safety status of all 178 WHO member states. The results from the survey revealed that over 1.2 million road deaths occur annually, and 20 to 50 million people are affected by non-fatal injuries or lasting disabilities from road traffic accidents (World Health Organization, 2009). There is much evidence that road traffic injuries have long-lasting impacts, and the WHO estimated that if no action is taken, road traffic injuries will become the fifth leading cause of global deaths by 2030. This alarming statistic led to the establishment of United Nations Sustainable Development Goals 3.6: "by 2020, halve the number of global deaths and injuries from road traffic accidents" (United Nations, 2016). In an effort to achieve this goal, each of the 193 United Nations (UN) member states pledged to implement ISO 39001 *Road Traffic Safety (RTS) Management Systems* (International Organization for Standardization, 2017), and monitor death rates from road traffic incidents. Three years after the initial implementation, a 2018 WHO report revealed that only about 40% of countries showed decreased or unchanged numbers of road traffic injuries and deaths, and that without any drastic changes, the SDG 3.6 target to halve road injuries and deaths by 2020 would not be met (World Health Organization 2018). However, this reduction reflects significant progress considering increasing global population and vehicle use, and other country-specific underlying challenges. Despite falling short of the SDG target, the implementation of ISO 39001 standard was beneficial because it provided guidelines and checklists for governments or directing organizations that paved progress.

Introduction

Since the beginning of the twenty-first century, road traffic deaths are ranked among the top ten global leading causes of death (*The Top 10 Causes of Death*, 2018). Due to the continuous rise in both global population and vehicle use, the number of global deaths from road traffic injuries has increased simultaneously. To address this issue, the United Nations (UN) resolved to halve total road traffic injuries and deaths by 2020 as a target to reaching one of the Sustainable Development Goals (SDGs) developed in 2015. To achieve this ambitious goal, ISO 39001, *Road Traffic Safety (RTS) Management Systems*, an international standard developed by the International Organization for Standardization (ISO), was implemented by each UN member nation. Despite these efforts, a report published by the World Health Organization (WHO) in 2018 revealed that only 27% of the countries had decreased road traffic injuries or deaths. Though the metric did not meet the UN's target, it reflects substantial progress toward meeting the goal. Overall, ISO 39001 helped motivate government action toward road traffic safety management by providing a clear roadmap and holding member states accountable. Original projections for road traffic injuries and deaths were greatly minimized by the implementation of ISO 39001.

Prior to the inception of the UN SDGs, the WHO's 2009 report titled, "Global Status Report on Road Safety: Time for Action," revealed that over 1.2 million road deaths occur annually, and 20 to 50 million people are affected by non-fatal injuries or lasting disabilities from road traffic accidents. Death by road traffic injuries affects people of all ages, but it is in the top three leading causes of death for people between 5 and 44 years of age. The global financial losses from road traffic accidents were estimated to be about 518 billion U.S. dollars in 2008, which is worth over 619 billion U.S. dollars in 2020 (World Health Organization, 2009).

These numbers are alarming enough, but two other consequences underscored the gravity of this global issue. First, increasing patients suffering from road traffic injuries puts a great strain on the already-deficient global supply of health workers. A study published in 2007 reported that the density of the global health workforce is about 9.3 health workers per 1,000 population, and there are approximately 2.4 million fewer physicians, nurses, and midwives than is necessary (Kuehn, 2007). The WHO and its member states have been trying to resolve this worker shortage for years. Given this shortage, it is even more crucial to improve road safety regulations.

The second side effect is the socio-economic inequality that the high incidence of road traffic injuries creates and perpetuates. The WHO's 2009 report revealed that road traffic fatality affects people of all ages but is in the top three leading causes of death for people between 5 and 44 years of age. Since younger populations are significantly affected by road traffic injuries, many countries, especially low- and middle-income developing countries with younger populations, are at risk. Though low- and middle-income countries contain about 48% of the world's registered vehicles, over 90% of road traffic fatalities occur in low- and middle-income countries (World Health Organization, 2009). Road traffic fatalities are derived from socio-economic inequality, which is exacerbated as countries develop and populations rise.

Sustainable Development Goals and the Implementation of ISO 39001

The WHO estimated that without any action, road traffic injuries would be the fifth leading cause of worldwide deaths by 2030, and this motivated the global community to make changes (World Health Organization, 2009). To address SDG No. 3: *Good Health and Well-*

Being, members of the 2015 UN Summit agreed to target improvement of road traffic accidents. The specific target was, "by 2020, halve the number of global deaths and injuries from road traffic accidents" (United Nations, 2016). In an effort to achieve this goal, each of the 193 UN member states pledged to implement the ISO 39001, *Road Traffic Safety (RTS) Management Systems*, (International Organization for Standardization, 2017), and monitor death rates from road traffic incidents (Inter-Agency & Expert Group, 2016).

ISO 39001 *Road Traffic Safety (RTS) Management System* is a standard published in 2012 after four years of development by the International Organization for Standardization Technical Committee "ISO/TC 241" with the purpose of reducing the incidence of road traffic accidents. ISO 39001 contains cost-effective guidelines toward managing road traffic systems, applicable for both public and private institutions of any size. The standard proposes the development of an organized database to thoroughly track road traffic incidents, injuries, and deaths and evaluate national trends.

To guide the development of this database and aid each country's management of road traffic safety, ISO 39001 suggests that three types of performance factors be implemented to assess progress. These include risk exposure factors (traffic volume and traffic mileage for users of all types of vehicles), final safety outcome factors (the number of injured or dead), and intermediate safety outcome factors (use of protective gear such as helmets, car seats, and seat belts, driving speed regulation by vehicle type and weather, road separation by vehicle type, and safer road design) (International Organization for Standardization, 2012). As exemplified above, ISO 39001 contains detailed guidelines that assist organizations in implementing better management strategies for road traffic systems.

Challenges of Decreasing Global Road Traffic Accidents

Despite the merits of ISO 39001, there are unique, underlying challenges that individual countries face in their efforts to reduce road traffic incidents. One such hindrance includes countries' differing state capacities. State capacity is a term which describes how effectively states can implement their policy decisions, and is determined by the state's political system, the system's stability, and the government's monetary and technological resources (Brieba, 2018). There are 193 member states in the UN, and these countries have varying degrees of political stability and economic power. This naturally results in differential state capacity among UN members, and some countries find it more challenging to implement road management policies. Therefore, expecting all 193 countries to significantly lower their road traffic accidents in the span of five years given their varied state capacities may be an unrealistic goal.

Another barrier to reaching the UN target is that reducing road traffic accidents cannot single-handedly be achieved by one organization alone. Achieving global and national road safety requires organized management capacity, which results from strong institutional leadership, good communication between local and federal organizations, and funding (World Health Organization, 2018). Building road safety management capacity, strengthening road transport networks, improving vehicle safety by regulating manufacturing, and establishing post-crash responses are within the government's scope of practice. However, improving road user behavior is an individual's responsibility; therefore, decreasing road traffic accidents cannot be solved individually and is rather a shared responsibility (The Lancet Global Health, 2019).

Results of Implementation

The WHO published its most recent update on road traffic injuries in 2018, and revealed that given the current trajectory, it is unlikely that the UN will reach their goal of halving the number of road injuries and deaths by 2020. Despite the efforts, the 1.2 million road traffic deaths observed in 2008 had increased to 1.35 million deaths in 2018. Road traffic injuries are now the eighth leading cause of death for people of all ages globally, and still remain the primary cause of death of people between 5 to 29 years of age (World Health Organization, 2018).

Though the number of road injuries increased in the last decade on a global scale, there were still improvements made. Between 2013 and 2016, 25 high-income and 23 middle-income countries had decreased road traffic injuries, which accounts for about 27% of countries in the UN. 13% of countries showed no change, and 60% of countries showed increased road traffic injuries. (Figure 1)

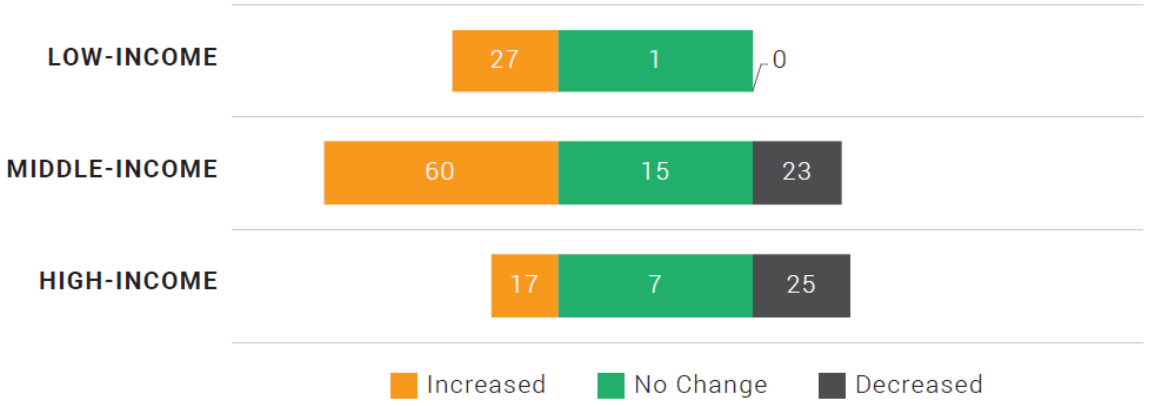

Figure 1. Number of countries where a change in the number of road traffic deaths has been observed since 2013. These data represent countries that have seen more than a 2% change in their number of deaths since 2013, and excludes countries with population under 200,000. The income levels are based on 2017 World Bank Classifications. (World Health Organization 2018)

The overall increase in global road traffic injuries in 2018 does not mean that ISO 39001 was futile. In the last decade, both the world population and the number of registered vehicles have increased. The global population increased by over 12% (*World Population by Year*, 2020), while the number of registered vehicles increased by over 16% (World Health Organization, 2015). The increase in population and the number of registered vehicles result in higher traffic and pedestrian density, and each of these factors individually increase the likelihood of road traffic accidents. Despite the significant increase in both the population and number of registered vehicles, 40% of the countries showed decreased or unchanged road traffic injuries and deaths (Figure 1). It is likely that excluding traffic fatalities as a target of the SDG and not implementing ISO 39001 would have led the numbers to be much higher than what was observed in 2018, as initially estimated from the *Global Status Report on Road Safety: Time for Action* from 2009. Halving global road traffic injuries and deaths in the span of five years may have been an unrealistic goal. It is unreasonable to change the world in the few years.

Conclusion

ISO 39001 was implemented in an effort to globally standardize record keeping of the number of road injuries and deaths, but also to educate local governments and organizations. It summarizes risk exposure outcome factors, final safety outcome factors, and intermediate safety outcome factors so that national organizations better understand the root causes and effects of road injuries and are equipped with practical tools and concepts to improve their road safety.

Overall, the implementation of ISO 39001 was beneficial despite its mixed success because it functioned as a guideline for each country's government to follow and as a checklist

that held governments or directing organizations accountable for their actions in regards to the goal of decreasing road traffic injuries and deaths. Despite increased populations and vehicle usage, 40% of countries were able to maintain or decrease their national road traffic injuries. Without the implementation of ISO 39001, we would lack an international standard for member nations to work towards, and as countries develop, the unacknowledged problem of road traffic accidents would only have worsened.

Of course, there is always room for improvement. Adnan Hyder, Professor of Global Health at George Washington University, states that, “one of the crucial gaps for global road safety, compared with even other health issues, is a relatively weak non-governmental sector and poor civil society engagement, especially in low-income and middle income countries” (Hyder, 2018). Unlike other health problems, road injuries and deaths have been neglected by the global health community for a very long time, despite the continuous rise in global population and vehicle consumption.

The SDG 3.6 goal of halving the number of global deaths and injuries from road traffic accidents may be superficially met this year due to the COVID-19 pandemic and drastically decreased human interaction, outside activity, and travel. However, this is only a temporary fix. Relying solely on statistics to measure progress in 2020 may be unrepresentative of global trends.

Falling short of the initial target in the last five years provides an opportunity to reevaluate and establish a set of new, realistic goals to decrease the number of road traffic injuries and deaths by 2030, the final deadline year of the SDGs. Rather than establishing one overall goal to be met as a group of 193 countries, it may be more equitable to create goals for

each country calibrated to their population growth, vehicle use, and state capacity. International equity needs to be considered in big-scaled, cooperative projects like the SDGs, and setting reasonable and achievable goals for each country will further progress. Most importantly, both governing bodies and individual citizens should treat this problem as their shared social responsibility and engage in implementing safer road regulations to mitigate road traffic accidents.

Bibliography

Brieba, D. (2018). State Capacity and Health Outcomes: Comparing Argentina's and Chile's Reduction of Infant and Maternal Mortality, 1960–2013. *World Development, 101*, 37–53. https://doi.org/10.1016/j.worlddev.2017.07.021

Hyder, A. A. (2018). Measurement is Not Enough for Global Road Safety: Implementation is Key. *The Lancet Public Health*, *4*(1), e12–e13. https://doi.org/10.1016/S2468-2667(18)30262-7

Inter-Agency, & Expert Group. (2016). *Final List of Proposed Sustainable Development Goal Indicators* (p. 25). United Nations. https://sustainabledevelopment.un.org/content/documents/11803Official-List-of-Proposed-SDG-Indicators.pdf

International Organization for Standardization. (2012). *ISO 39001:2012* (1st ed.). International Organization for Standardization. https://www.iso.org/cms/render/live/en/sites/isoorg/contents/data/standard/04/49/44958.html

International Organization for Standardization. (2017). *Startup Guide to ISO 39001: Road Traffic Safety Management Systems*. International Organization for Standardization. https://www.iso.org/files/live/sites/isoorg/files/developing_standards/docs/en/ISO_39001_Startup_Guide_2017-06.pdf

Kuehn, B. M. (2007). Global Shortage of Health Workers, Brain Drain Stress Developing Countries. *JAMA*, *298*(16), 1853–1855. https://doi.org/10.1001/jama.298.16.1853

The Lancet Global Health. (2019). Speaking up for global road safety. *The Lancet Global Health*, *7*(6), e681. https://doi.org/10.1016/S2214-109X(19)30192-5

The Top 10 Causes of Death. (2018, May 24). World Health Organization. https://www.who.int/news-room/fact-sheets/detail/the-top-10-causes-of-death

United Nations. (2016, January). Goal 3: Ensure Healthy Lives and Promote Well-Being for All at All Ages. *United Nations Sustainable Development Goals*. https://www.un.org/sustainabledevelopment/health/

World Health Organization. (2009). *Global Status Report on Road Safety: Time for Action.* World Health Organization. https://www.afro.who.int/publications/global-status-report-road-safety-time-action

World Health Organization. (2015, November 30). *Number of Registered Vehicles*. World Health Organization; World Health Organization. http://www.who.int/gho/road_safety/registered_vehicles/number/en/

World Health Organization. (2018). *Global Status Report on Road Safety 2018*. World Health Organization. https://www.who.int/publications-detail/global-status-report-on-road-safety-2018

World Population by Year. (2020). Worldometer. https://www.worldometers.info/world-population/world-population-by-year/