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Assessing the impact of the WHO Global Status Reports on Road Safety

Maria Segui-Gomez [1,2] Fangfang Luo [1] Claes Tingvall [3,4] Matthew Peter Taylor [1]

[1]Safety and Mobiliy Unit, World Health Organization, Geneva, Switzerland
[2]Universidad Pontificia Comillas, Madrid, Spain
[3]Chalmers University of Technology, Goteborg, Sweden
[4]Monash University, Melbourne, Victoria, Australia

Correspondence to
Dr Maria Segui-Gomez; mariaseguigomez@gmail.com

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ABSTRACT

Since 2000, the WHO has produced a series of Global reports to monitor the burden of road traffic incidents and road safety interventions. The fifth and latest Global Status Report on Road Safety was released in December 2023. This manuscript reviews the stated objectives for these reports and provides an assessment of their achievement. Whenever appropriate, we compare the burden and progress in preventive or curative interventions of three other health conditions with comparable numbers of deaths and for which similar WHO reports exist. We conclude with recommendations for future road safety status reports. These include covering private sector actors, creating a standard definition for non-fatal injuries, commissioning new research to determine additional best practice legislation, refining some UN voluntary performance target indicators, producing country profiles for all WHO member states and enhancing communications and advocacy.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ WHO produces global status reports on a number of health conditions and topics. The Global Status Report on Road Safety is one of such reports with its origins in the early 2000s and five full reports to date.
⇒ The UN mandate is for WHO to report on the status of road safety in the world. Yet, reporting is commonly considered as a first step towards change.

WHAT THIS STUDY ADDS

⇒ An assessment of the performance of the reports on road safety produced to date.
⇒ A framework to assess status reports on other conditions.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ The results suggest areas for further refinement of the reports, the expansion of stakeholders, more related research areas and a greater focus on narrative and targeted outreach.

INTRODUCTION

In 2003, the WHO declared road traffic injuries to be one of three neglected epidemics.[1] In 2004, WHO published the World Report on Road Traffic Injury Prevention,[2] where global data on road crash deaths and injuries were first discussed at length, yet no country-level data were collected. The first Global Status Report on Road Safety was released in 2009.[3] It included country-level data on road traffic deaths.

In 2010, the United Nations (UN) General Assembly (GA) declared the Decade for Action for Road Safety 2011–2020.[4] WHO was commissioned to monitor progress towards the Decade's target of a 50% reduction in fatal and non-fatal road traffic victims. This role was continued for the Decade of Action 2021–2030.[5] To date, five Global Status Reports on Road Safety have been produced, with the latest released in December 2023.[6–9]

The aims of the reports have expanded over time. The aims of the first report[3] were to generate standardised definitions and measures and to report on progress made by countries in implementing the recommendations in the 2004 World Report on Road Traffic Injury Prevention.[2] The second report[6] aimed to describe the burden of road traffic injuries, identify the implementation of effective interventions, assess any changes since the prior report, and identify gaps in road safety nationally. Additionally, it served as a baseline to monitor the UN Decade of Action for Road Safety 2011–2020.[4] The third and fourth reports[7 8] maintained the same objectives.

The fifth and latest report[9] retained previous objectives while integrating new indicators[10] and added two new objectives. Overall, it aimed to:

1. Monitor the situation and evolution of the status of road safety globally.
2. Monitor progress on the implementation of priority road safety interventions globally.
3. Illustrate the status of road safety at the country level and changes from previous reports.
4. Evaluate gaps in data and interventions.
5. Stimulate research on road safety.
6. Strengthen the capacity of road safety professionals.

The goal of this paper is to review the extent to which these objectives have been achieved. The paper also provides insights on how to enhance future reports. The Advisory Board for the latest report[9] recommended that such a review should quantify the number of participating countries, the percentage of the global population covered, the change in road fatalities, the adoption of road safety interventions, the number of reports downloaded, citation in scientific papers and news generated by the reports.

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OBJECTIVES OF THE GLOBAL STATUS REPORTS ON ROAD SAFETY

Monitor the situation and evolution of the status of road safety globally

Global fatality figures in all five reports are estimates for all UN member states, regardless of their participation in the elaboration of reports. These data were based on WHO standard practices since the variety of definitions and data sources makes reported fatalities unaggregatable. WHO estimations of road traffic fatalities were first included in the 2009 report, and they are updated regularly via the WHO General Health Estimates project.[11]

The latest Global Status Report on Road Safety confirms that fatalities decreased by 5% between 2010 and 2021 but remain at a comparable level to 2000.[9] With over a million deaths each year, road traffic fatalities constitute a global burden similar to Tuberculosis and are higher than the number of deaths related to HIV/AIDS and Malaria (figure 1).[12] Road traffic deaths were the 10th leading cause of death globally for all ages combined in 2000. In 2021, road traffic deaths ranked 12th, with Tuberculosis as 10th.[13]

Monitoring non-fatal injuries is challenging. An estimate of 50 million non-fatal injuries was published in 2004,[2] but no updates have been possible since then. 114 countries reported collecting data on non-fatal injuries for the latest report,[9] but differences in definitions prevent aggregation.

Monitor progress on the implementation of priority road safety interventions globally

Every report since 2009[6] has summarised progress on the implementation of selected road safety interventions since the previous one in ever-growing efforts to foster a more comprehensive understanding of the implementation of road safety interventions. Although indicators have changed over the five global status reports, there are some 30 that are consistent across reports and their evolution can be assessed.

The framework for data collection adheres to contemporary road safety paradigms. Thus, it started with an emphasis on both the size of vehicle fleets and road users' behaviours, particularly, around speed, drinking and driving, motorcycle helmet use, seat-belt use and the use of child restraints.[3] Subsequent reports expanded to cover institutional frameworks, inspection of roads, adherence to international vehicle safety regulations and post-crash care.[14] The latest report is rooted in the Safe System approach. It includes the UN voluntary targets and indicators that are used to monitor the status and progress of road safety interventions.[15] The increased length of the country questionnaire does not appear to have led to a drop in participation.

Earlier reports relied more on information reported by countries, including on legislation. Later reports incorporate validation and/or assessments of the data. This is particularly true for legislation interventions as, starting with the 2015 report,[7] best practice criteria have been defined for five legislation areas: speeding, drinking and driving, helmet and safety belt use and child restraint use.

Between the 2018 and 2023 reports, 29 countries modified 34 laws on any of the above behaviours to meet WHO best practice. Yet there are only seven countries that have laws that meet WHO best practices in all five areas and 21 more countries that meet best practice on at least four. Regrettably, 87 countries have at most one or two laws that meet best practice and more than fifty countries have none.[9]

How fast countries implement measures varies widely, as the details in which countries progress also vary. For example, while 80 countries reported having national road safety agencies in the 2009 report, the latest count is 171.[9] Yet, when the functions of these agencies are contrasted against the functions as defined in the corresponding UN target indicator, it is only 117 out of the 171 countries that met these.

Illustrate the status of road safety at the country level and changes from previous reports

Country participation has been high overall, including the lowest in the latest report[9] with 170 member states and up to 180.[6] All 194 member states have participated in at least one report, with 149 participating in all five. Figure A1.1 in the latest report[9] reflects the cumulative country participation. The percentage of the global population covered has ranged from 96% in 2013[6] to 97% in the latest report (2023).[9]

The reports also contain data that is collected by other entities, such as the UN Economic Commission for Europe on

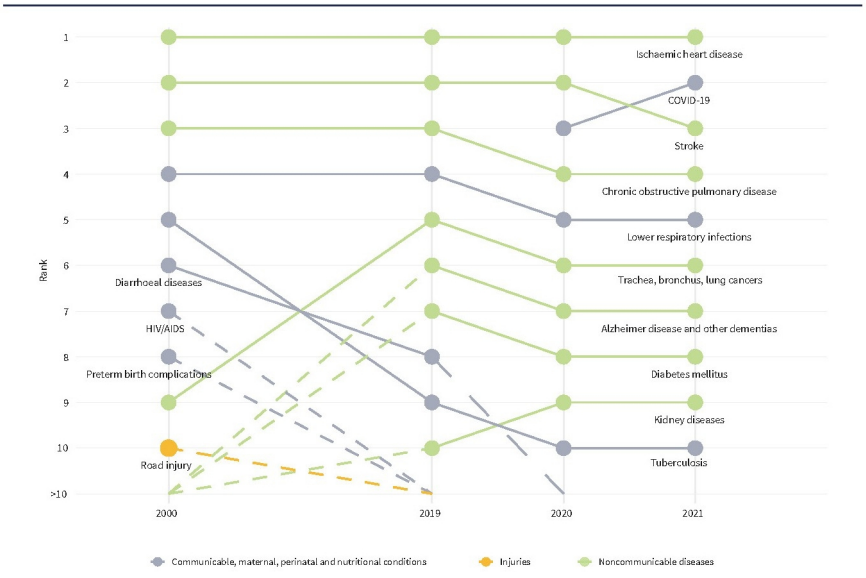

Figure 1 Top 10 causes of death globally in 2000, 2019, 2020 and 2021.[11] [a] Solid lines represent movement within the top 10 causes of death. Dashed lines represent movement in or out of the top causes of death.

regulations and international standards and the WHO General Health Estimates. The reports summarise aggregated information, but key country-level information is summarised in country profiles. Country profiles in the latest report add an 'evolutionary' assessment to better assess progress in relation to the Decade of Action 2011–2020.[9]

These country profiles are only produced for countries that participated in the corresponding report's survey. Profiles used to be presented as annexes to the reports.[3 6–8] Complementary, a mobile application with profile data was released along with the 2018 report.[16] The last report removed the profiles from the annex to create a separate document.[9 17] The mobile application was updated,[18] and stand-alone profiles and the data in the mobile application have been made available from the WHO website. Nearly 6000 profiles were downloaded by 1 October 2024 while there were 2000 downloads of the mobile application between 13 December 2023 and 1 October 2024.

Evaluate gaps in data and interventions

The WHO Global Road Safety Reports are the only document where estimated and reported road traffic fatality numbers are periodically compared on a country-by-country basis. At the global level, discrepancies between these two data sources on the number of fatalities have been reported since the 2009 report,[3] with around two deaths estimated for each one reported. This masks major differences between countries, as some countries are close to WHO estimates, while for others the gaps are considerable. In fact, 25 countries present fourfold or larger differences. The methods for estimation and reasons for discrepancies are documented in several reports.[19]

In response to these fatality count discrepancies, 88 countries indicated in the last report that they have investigated them, and several report that they have initiated remedial actions. Country-specific workshops on data improvement involving cross-checking of different data sources have been taking place for years, and mortality systems, including vital registration systems, continue to slowly improve.

The most recent report[9] documents, for the first time, gaps in other road safety data systems. For example, whether there exist data on (1) frequency and distribution of journeys by modal type, (2) speeds on the roads, (3) speeding violations or speeding-related injuries and fatalities, (4) helmet use, usage of safety belts and appropriate use of child restraint systems or (5) on driving under the influence of alcohol and/or other psychoactive substances, or the use of mobile phones while driving. The absence of these data systems prevents the calculation of several UN Performance Target Indicators.

The latest report[9] also reveals discrepancies between the adherence to international vehicle safety standards and the existence of national legislation on the matter.

Besides the data gaps identified in the narrative of the reports, the profiles ease the identification of gaps for an array of interventions ranging from infrastructure to driving licensing practices.

Stimulate research on road safety

It is hard to measure the extent to which the reports have directly stimulated research, yet evidence exists on the extent to which the reports have been cited in scientific studies.

The 2015 road safety report is the most cited to date, with 2350 citations under the Web of Science database,[20] 2623 citations on the Scopus database[21] and 6128 listed by Google Scholar[22] (figure 2). Whether the road safety reports are more or less cited than other WHO reports can also be seen on figure 2. The road safety reports are cited more times than the Tuberculosis[23 24] or Diabetes[25] reports on the Web of Science and Google Scholar database, and they are cited about the same level as the Malaria[26] report on Scopus. It is too early to assess the research impact of the latest report, as the first publications citing it were published in the fall of 2024.[27] Unfortunately, the WHO webpage where the data from the latest report are available does not allow tracking of downloads.

Strengthen the capacity of road safety professionals

This is hard to measure, as the field lacks a definition of capacitation or a registry of professionals where progress can be assessed.

Since 2009, around 2000 individuals have participated in the production of the reports, whether at country, regional or global level. How these experts have benefitted from the experience has not been measured. Whether these experts have shared knowledge acquired during their participation in the report making and/or the reports with their colleagues has not been monitored either.

A range of institutions that strengthen the capacity of road safety specialists reportedly use data from the reports. These include Sweden's Vision Zero Academy, the Johns Hopkins Bloomberg School of Public Health and training conducted

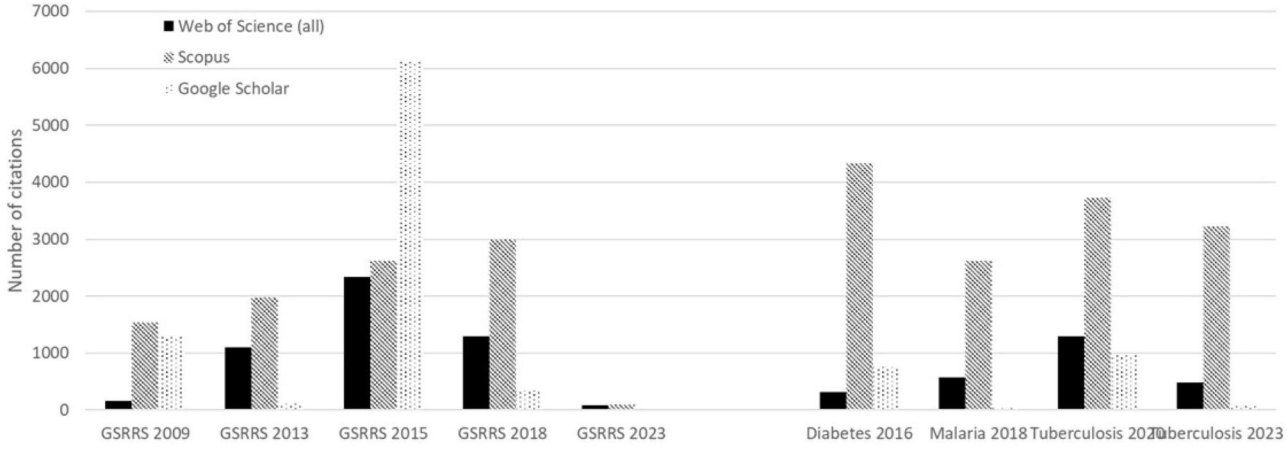

Figure 2 Number of citations on selected scientific publication engines, Global Status Report on Road Safety (GSRRS) and selected WHO reports on other health conditions.[a] Search is restricted to citations any time up to 28 August 2024.

by WHO, the World Bank and a number of organisations through the Bloomberg Initiative for Global Road Safety. The United Nations Road Safety Fund call for funding for 2024 makes addressing the legislative gaps listed in the latest report a priority.[28] Global advocates, such as the UN Special Envoy on Road Safety and civil society partners, reportedly cite the data in meetings with officials.

Measuring the reach of the reports shows (figure 3) that the 2018 report has the highest number of downloads, at nearly 250000 whereas the latest report has the least downloads (as of 6 months after the launch). Whether the number of downloads is comparable to that of other WHO reports on conditions with similar population burden is also seen on figure 3. The 2018 road safety report has 30000 more downloads than the 2018 WHO World Malaria Report, but it is behind the 2016 Diabetes Report, with around 1 million downloads, and the 2020 Tuberculosis Report, with around 1.1 million downloads. Research into who and why downloads the reports is worth exploring, as the magnitude of the problem seems not to be the only factor influencing it.

All road safety reports were shared through the UN Road Safety Collaboration forum, which brings together UN Member States, UN agencies, Development Banks, civil society organisations, academia, philanthropic foundations and the private sector.

All reports were released with a WHO press conference, press release and outreach materials in all six UN languages. For the latest report,[9] an online media briefing was held in advance of the in-person launch event that was open to journalists, partners and live streamed online. Around 2000 viewers watched live or watched the event online in the following 2 days. Outreach materials, including for social media, were shared by WHO and a network of partners globally.

Press coverage information is only available for the latest report.[9] WHO listed 564 media mentions of the 2023 report in the first 3 days following the report launch on 13 December 2023. Media reports included the Guardian (UK of Great Britain and Northern Ireland), Forbes (USA), The Times of India and the Hindu (India), Xinhua (China) and EFE (the Spanish news agency). Interviews were held to mark the launch, including with the BBC World Service.

CONCLUSIONS

The first of the five WHO Global Status Reports on Road Safety was released in 2009. Since then, the data definitions, data collection methods, road safety intervention frameworks and content and format of the reports have evolved while retaining core elements that allow for evolutionary assessment. This paper has analysed, to the best extent possible, if the aims set forth in them have been met.

Objectives 1–4, related to monitoring of progress and gaps, have been met, while room for improvement exists. Recently added objectives 5 and 6 on research stimulation and capacity building are harder to evaluate, and indicators on these objectives should be set. Yet early evidence of impact exists.

Road traffic deaths were the 10th leading cause of death globally for all ages combined in 2000. In 2021, they ranked 12th, with similarly burdensome conditions in 2000 rising in the raking—Tuberculosis to the 10th, and Diabetes to 8th.[13] The reports confirmed a slight reduction in fatalities in the 2011–2020 Decade of Action, despite falling far short of the 50% reduction target.[9]

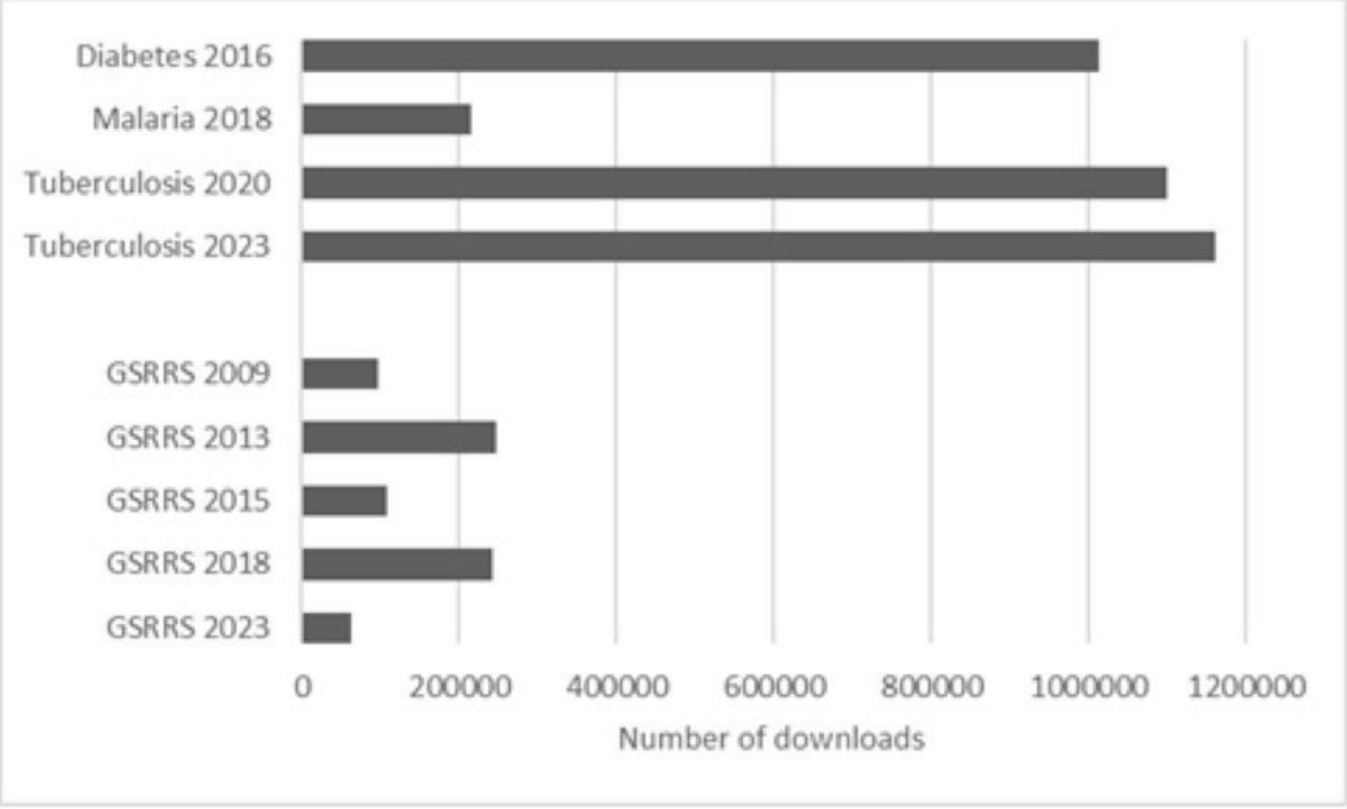

Figure 3 Downloads from WHO Institutional Repository for Information Sharing.[a] Search is restricted to full reports in English from 1 January 2017 to 31 July 2024 (both inclusive). GSRRS, Global Status Report on Road Safety.

All 194 WHO Member States participated in at least one report. All reports except the first one included progress on the implementation of road safety interventions. Gaps in data and legislation were identified, particularly between reported and estimated fatalities. Yet improvements have been slow. The Global Status Reports on Road Safety should lead to more rapid action to reduce deaths and injuries. In this regard, tactical advances on research, as well as communication and partnerships, are crucial.

Road safety reports are cited more in scientific research papers than comparable WHO reports on Tuberculosis and Diabetes.[23–25] Whether these references are solely on the introduction section of the papers or because the report's data are further analysed is worth evaluating. Data gathered for the reports are available to those interested in analysing it. Further research should be undertaken to assess the reasons for the large discrepancies between the lowest and highest road traffic fatality rates between countries. Research could also assess the reasons for the slow implementation of road safety laws and measures listed in the reports.

While the reports are disseminated in traditional road safety circles, there is a need to attract global businesses and their supply chains, the automotive, motorcycle and other mobility devices industry and global passenger and goods services. This is particularly relevant in light of the latest report finding that around one third of road traffic deaths are linked to workplace safety. This necessitates links with occupational health and safety and other related policy areas. Ongoing work by WHO and the International Labour Organization on legislation for professional drivers is a positive first step.

While media outreach appears significant, there are opportunities for more targeted outreach. News reports on road collisions typically do not frame crashes as part of a systemic, preventable and global public health problem. They often focus on isolated incidents and individual road user behaviours.[29] Road safety has a narrative problem, and future reports can help challenge this.

Lastly, technical improvements in the production of future reports include: (1) producing a standard definition for non-fatal injuries, possibly following the example of other conditions promoting common definitions for non-fatal outcomes (eg, drowning), (2) further refining some UN voluntary performance target indicators, (3) developing 'best criteria' for other topics, including new areas of legislation beyond behaviour and (4) producing profiles for all WHO Member States, regardless of their participation in the survey to ease access to country data for practitioners in all countries at all times without needing to delve into each report to learn whether the country participated or not in a particular report.

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Contributors MS-G conceptualised and wrote initial drafts of this paper. FL and MPT are working for WHO and together with MS-G were part of the staff that produced WHO GSRRS 2023. CT was one of the Advisory Board members for the production of GSRRS. MS-G, FL, MPT and CT important contributions to the conception or design of this work and edited the manuscript for critical scientific content. MS-G and CT contributed to the acquisition and interpretation of data. All authors contributed to the critical revisions and approved the final manuscript. MS-G is the guarantor of this manuscript.

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ORCID iDs
Maria Segui-Gomez http://orcid.org/0000-0001-5692-9781
Fangfang Luo http://orcid.org/0009-0001-3403-364X
Claes Tingvall http://orcid.org/0009-0006-8494-3373
Matthew Peter Taylor http://orcid.org/0009-0004-6022-2788

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