SAFE STREETS, HEALTHY LIVES:

ADVOCATING FOR ROAD SAFETY AND WELL-BEING

Initiated by:

YOURS
YOUTH FOR ROAD SAFETY

GLOBAL YOUTH COALITION FOR ROAD SAFETY
#CLAIMINGOURSPACE

THE GLOBAL GOALS
For Sustainable Development

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THE GLOBAL GOALS For Sustainable Development

MEET THE WRITERS

STEFFEL LUDIVIN FEUDJIO TEZONG

CAMEROON

"A wider definition of road victims includes the thousands of young people dying annually due to illnesses from air pollution, noise pollution, and physical inactivity, exacerbated by unsafe road conditions. Unlike traditional road fatalities, these deaths often go unrecognised — posing a silent, yet significant threat to youth. Urgency lies in rethinking road safety solutions, going beyond injuryprevention to encompass youth-centric sustainable transportation, enabling their safe and active mobility with the associated health and environmental benefits. This policy brief offers evidence to Governments, NGOs, and youth advocating for an essential paradigm shift to achieving the targets in the Decade of Action for Road Safety 2021–2030 and Sustainable Development Goal 3 (SDG3)."

REEM EL SHERBINY

EGYPT

"Road safety is not just about reaching a destination; it's about safeguarding health and well-being on the journey. Ensuring road safety and safe mobility for youth, particularly in low-income countries, is not just a matter of convenience. It is a fundamental necessity for their well-being and future. By prioritising road safety, we empower young individuals to pursue education, access healthcare, and contribute to their communities. I hope this policy brief reaches its target towards preventing, or at least reducing, the shattering of lives on the road."

MOHAMED EISSA

EGYPT

"Road Safety is one of the most critical issues facing the health of whole societies. It is an issue where everyone is vulnerable to road traffic crashes and has to answer to the detrimental consequences it has on the health and well-being of individuals and families. Such an important public health issue requires increased focus among all stakeholders, ensuring that everyone's safety is prioritised when it comes to roads that we use every single day. Road safety should not be a luxury, but rather a right for all."

CONTENT

EXECUTIVE SUMMARY

Road safety, characterised by efforts to reduce the risk of road traffic injuries and fatalities, is a critical global health concern. For citizens and communities, unsafe and environmentally harmful transportation systems not only pose a threat to life, but also have a profound impact on physical and mental health and quality of life. This is evidenced by the fact that road traffic injuries are the primary cause of death among youth around the world.

THE DUAL PRINCIPLES OF THE SAFE SYSTEM APPROACH AND SUSTAINABLE MOBILITY

The Safe System Approach not only enhances safety for transportation networks, but also helps to develop healthier, more equitable, and sustainable communities. In addition to managing vehicle speeds and designing safe streets, measures such as compact land use planning, travel demand management, improved public transport and active transport infrastructure aim to reduce reliance on private vehicles. This, in turn, promotes safe, low-carbon, and accessible modes of transportation for all. These actions complement traditional road safety strategies and have wider implications above and beyond saving lives from road traffic crashes.

By creating safer streets and roads, these measures also address health issues related to road traffic, air pollution, noise pollution, carbon emissions, and physical inactivity. As streets become safer for all users, noise levels decrease, air pollution diminishes, and more people engage in active transport (such as walking or cycling) and using public transport. This leads to improved physical activity levels and reduces the risks of non-communicable diseases (NCDs) associated with sedentary lifestyles, stress, insomnia, and prolonged noise and air pollutant exposure.

The shift towards active transport, combined with compact land use, reduces the dominance of cars on the road resulting in a decrease in crash risk, as well as contributing to cleaner, greener, and more sustainable, liveable cities. This positive cycle of change, generated by the reduction in vehicle-kilometres travelled, suggests that the Safe System Approach, Sustainable Mobility, and Safe and Healthy Mobility are interconnected strategies that should be considered in unison to achieve significant improvements in safety, health, and well-being for individuals of all ages worldwide.

KEY DATA

Over **220,000 CHILDREN AND ADOLESCENTS** aged 0–19 die annually from road traffic injuries[1].

Road traffic injuries rank among the top causes of 'years lived with disability' for children aged 0–19 years[2].

Psychological distress affects **38–42%** of traffic crash survivors,with 1 in 3 still distressed 12 months post injury, according to ARH (Australian Rotary Health).

1 in 10 child asthma cases is linked to road traffic air pollution[6].

A unit increase in concentration of Particulate Matter 2.5 (PM 2.5) in a day increases the number of crashes by **4%** and the number of vehicles involved in crashes by **0.3–0.6%**[7,8].

In the EU, exposure to road traffic noise contributes to **75%** of the burden of diseasedue to noise, resulting in 9,000 premature deaths annually[9].

Only **46 countries** have laws guaranteeing rehabilitative medical care for all injured persons regardless of their ability to pay. Only **25 countries** mandate to provide psychological assistance to road crash victims and their families.[11]

The risk of death from road traffic crashes is **3 TIMES HIGHER** in low-income countries than high-income countries despite having less than 1% of all motor vehicles[3].

Implementing road safety solutions across 77 LMICs could prevent **11.7 MILLION** serious injuries and 1.9 million child and youth deaths during 2022–2050[4].

127,000 children and adolescents aged 0–19 die annually from outdoor air pollution, to which road traffic is a significant contributor[5].

9 in 10 deaths occur in low- and middle-income countries.[10]

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2 UNICEF. (2022). Technical Guidance for Child and Adolescent Road Safety _ UNICEF.

3 World Health Organization. (2023). Global status report on road safety 2023. https://www.who.int/teams/social-determinants-of-health/global-status-report-on-road-safety-2023

4 FIA Foundation. (2021). Development of the Investment Case to Reduce Road Traffic Injuries among Adolescents Final Report. https://www.fiafoundation.org/young-lives-lost-without-road-safety-investment

5 Anne Gulland. (2018). Road traffic kills 350,000 children a year. https://www.telegraph.co.uk/

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KEY ARGUMENTS

Road safety is closely tied to SDG3, extending beyond road fatalities and injuries to encompass factors like physical activity (such as walking and cycling), air and noise pollution, and related health issues. This section presents evidence of these connections, highlighting the significant impact of road traffic crashes and hazardous roads on the health and well-being of society, particularly young people who are among the most affected.

UNDERSTANDING RISK FACTORS FOR VULNERABLE ROAD USERS

Around 1.19 million people lose their lives annually and millions more are seriously injured because of road traffic crashes, with vulnerable road users representing over 50% of these deaths. The World Health Organization identifies numerous risk factors for road crashes, fatalities, and serious injuries, affecting vulnerable road users. These include speeding, impaired driving, fatigue, distraction, improper seat-belt and helmet usage, unsafe road infrastructure, unsafe vehicles, and inadequate post-crash care.

Speeding (excessive or inappropriate speeds) contributes to approximately 54% of global fatalities, with higher proportions observed in LMICs (57%) compared to HICs (28%)[12]. Speeding vehicles pose a particular threat to young pedestrians and cyclists, requiring investments in safer infrastructure and traffic calming measures to protect vulnerable road users, especially children and young people.[13]

Impaired driving is another risk factor, contributing to at least 25% of road crashes in Europe.[14] Young people are particularly vulnerable, even with modest quantities of alcohol consumption. Governments should enforce drink-driving laws and implement strategic random breath testing, which have been proven effective in reducing drink-driving crashes.[15]

Distracted driving is estimated to play a role in at least 5% of road crashes in different regions of the world.[16] As mobile phone usage among young people has increased globally, especially in LMICs, governments must implement mitigation actions around legislation, awareness raising and advocacy campaigns, but also technological developments and infrastructure change.[17]

Non-use of helmets increases the risk of severe brain injury in motorcyclists and cyclists,

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15 World Health Organization. (2022). Drink-Driving : A Road Safety Manual for Decision-Makers and Practitioners. https://www.who.int/publications/m/item/drink-driving

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17 Boets, S. (2022). Road Safety Thematic Report – Driver distraction.

particularly affecting children. Quality helmets can significantly reduce the risk of death and brain injury in crashes. Enforcing helmet usage and improving helmet availability and affordability are critical for enhancing road safety, particularly in LMICs.[18,19,20]

Post-crash response is crucial, with timely care being essential for saving lives. Transporting severely injured victims to specialised trauma centres equipped to handle such cases effectively is vital, especially for children. Improving the quality of post-crash care and developing trauma centres in LMICs could potentially save up to 500,000 lives globally.[21] Governments must implement evidence-based interventions addressing pre-crash, crash, and post-crash phases to ensure a safe transport system for all, particularly considering the vulnerabilities of young people.

ROAD TRAFFIC CRASHES PLACE A BURDEN ON SOCIETIES AND YOUNG PEOPLE

There are major impacts on a country's economy, society and individuals, directly caused by road traffic crashes and particularly affecting young people.

Road traffic crashes impose significant economic burdens on countries. They account for 3% of Gross Domestic Product (GDP) in most nations and up to 6% in low- and middle-income countries (LMICs).[22] Health systems bear the brunt of these costs[23], with road crash victims occupying nearly 50% of trauma ward beds in some LMICs[24]. This man-made epidemic diverts resources from critical healthcare needs – for example, The Netherlands allocates 5% of their healthcare budget to road traffic crashes, highlighting the strain on

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24 World Health Organization. (2004). World report on road traffic injury prevention. https://www.who.int/publications/i/item/world-report-on-road-traffic-injury-prevention

their resources[25]. The loss of productivity, especially among young, working individuals[26], adds to the economic burden, requiring urgent action to mitigate the projected cost to the global economy, estimated at US$1.8 trillion by 2030.[27]

Road traffic crashes result in various life-changing injuries, including head injuries, fractures, and orofacial injuries[28], affecting pedestrians, cyclists, and car occupants[29]. Every year, approximately 50 million people are injured or disabled in road crashes, and 10 million of these are young individuals aged 5–29[30,31]. These injuries can lead to permanent impairment and disabilities, especially among children and young people who frequently walk or cycle[32]. Road traffic injuries rank among the top causes of 'years lived with disability' for children aged 0–19 years, with varying risks of permanent impairment documented in studies across different countries[33].

Women are also a vulnerable group in road traffic crashes. The lack of crash-test dummies with female weight distributions until recently has contributed to this increased risk. Women are 47% more likely to be injured in car crashes and have a five times higher risk of whiplash injury compared to men[34]. Women's vulnerability is exacerbated by the higher likelihood of them being passengers, particularly in the most vulnerable positions in a crash[35].

Road traffic injuries contribute to poverty by imposing expensive medical bills and financial distress on victims, particularly young people. This financial burden reduces their living standards, limits their earning potential, and increases their vulnerability to further health issues. Studies from Azerbaijan[36], India[37], and France[38] highlight the adverse effects of road crashes on young people, including increased financial burdens, income loss, decreased quality of life, disruptions in education, and difficulties in finding new employment. Additionally, road traffic injuries contribute to post-traumatic stress disorder (PTSD) among young people, exacerbating social inclusion and mental health

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issues[39,40]. A 2021 World Bank study from India noted that in LMICs, young people, especially young women, are less likely to have health insurance or financial reserves to cover post-crash care costs, further compounding their challenges[41].

ADDRESSING PHYSICAL INACTIVITY FOR SAFER ROADS:

Physical inactivity contributes to approximately 3.2 million deaths annually[42], including 2.6 million in low- and middle-income countries (LMICs), making it one of the primary behavioural risk factors for non-communicable diseases (NCDs)[43]. Nearly 830,000 NCD deaths are attributed to physical inactivity each year, with young people being particularly affected[44]. Challenges such as increased urban sprawl, unsafe roads and neighbourhoods, and limited access to supportive infrastructure and recreational spaces hinder opportunities for children and young people to engage in physical activity[45,46].

Recognising the urgent need for action, 148 world leaders convened at the first Health Day of the 28th UN Climate Change Conference (COP28) and committed to the Declaration on Climate and Health[47]. This declaration promotes the creation of environments and

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40 Yimer, G. M., Adem, Y. F., & Haile, Y. (2023). Determinants of post - traumatic stress disorder among survivors of road traffic accidents. https://doi.org/10.1186/s12888-023-04673-4

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infrastructure that encourage young people's physical activity, leading to benefits for both health and climate. Achieving this goal will require a comprehensive approach involving communities, families, and policymakers, with youth at the forefront, to create spaces that support regular physical activity. Without intervention, current trends suggest that nearly 500 million people, including youth, will develop heart disease, obesity, diabetes, or other NCDs attributable to physical inactivity between 2020 and 2030. The associated healthcare costs are estimated to reach approximately US$27 billion annually.[48] For future generations, promoting physical mobility activities is crucial for ensuring safer roads and healthier communities.

THE IMPACT OF ROAD TRAFFIC POLLUTION ON YOUTH HEALTH AND SAFETY

Road traffic pollution poses significant health risks, particularly impacting children and adolescents who face heightened exposure due to their proximity to ground level and traffic emissions. Over 90% of the world's children are affected daily[49] , with road traffic pollution contributing to approximately 127,000 deaths annually[50], including one in ten child asthma cases.[51]

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49 World Health Organization. (2018). More than 90% of the world's children breathe toxic air every day. https://www.who.int/news/item/more-than-90-of-the-worlds-children-breathe-toxic-air-every-day

50 Anne Gulland. (2018). Road traffic kills 350,000 children a year. https://www.telegraph.co.uk/

51 Achakulwisut, P., Brauer, M., Hystad, P., & Anenberg, S. C. (2016). Global , national , and urban burdens of paediatric asthma incidence attributable to ambient NO_2 pollution : estimates from global datasets. https://doi.org/10.1016/S2542-5196(19)30046-4

Vehicle emissions, including carbon dioxide (CO2) and particulate matter (PM2.5 and PM10), are major sources of outdoor air pollution. Globally, road traffic contributes to 15% of direct CO2 emissions[52] and 27% of particulate matter emissions[53], resulting in an estimated 385,000 premature deaths from ambient PM2.5 and ozone exposure in 2015. Premature deaths are linked to various health issues, including stroke, heart disease, lung cancer, and respiratory infections.[54,55]

In addition to physical health concerns, road traffic pollution also affects mental well-being, with exposure associated with increased depression, suicidal behaviour, and impaired cognitive function in children[56]. Recent studies suggest a connection between road traffic, air pollution, and mental health problems in young professionals, impacting their productivity and performance at work.[57,58]

Road traffic pollution also reduces visibility on roads, increasing the risk of crashes by delaying driver response and avoidance. Even light smog pollution from PM2.5 particles can affect safe driving, leading to secondary crashes and aggressive driving behaviours[59]. Driver exposure to pollution can also cause physical discomfort, distraction, and impaired ability to react quickly, further increasing the likelihood of a crash.[60]

Addressing road traffic pollution requires sustainable transportation strategies, cleaner technologies, and comprehensive policies to prioritise the safety and well-being of children and youth in urban spaces. The Child Health Initiative's 'Declaration of Every Child's Right to Safe and Healthy Streets' underlines the fundamental right of every child to a safe and sustainable journey, advocating for environments that prioritise their safety and well-being.[61]

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60 Sager, L. (2019). Estimating the effect of air pollution on road safety using atmospheric temperature inversions. Journal of Environmental Economics and Management, 98(251), 102250.

61 Child Health Initiative. (2020). Declaration of Every Child's Right to Safe & Healthy Streets.

ROAD TRAFFIC NOISE POLLUTION AS A THREAT TO SAFETY, HEALTH, AND WELL-BEING

Road traffic noise poses a significant health risk globally[62], with over 30% of the population exposed to excessive noise levels surpassing WHO thresholds[63]. Among children and young adults, exposure to road traffic noise can lead to adverse health problems such as sleep disturbance, cognitive impairment, and cardiovascular issues[64,65]. For instance, in the EU region alone, road traffic noise contributes to 9,000 premature deaths annually and impacts cognitive development, with children exposed to higher noise levels exhibiting lower academic performance and attention spans. Road traffic noise can also impair job performance among young adults, signifying its far-reaching consequences beyond health.[66]

Road traffic noise has a notable impact on road safety, influencing driver behaviour and cognitive processing, which increases the risk of road crashes[67] . Distracted driving, reduced concentration, and delayed reaction times are some of the observed effects of road traffic noise on drivers, particularly young ones. Prolonged exposure to high noise levels can lead to elevated stress levels and contribute to aggressive driving tendencies among young drivers[68,69,70]. To address these challenges, governments must implement comprehensive urban planning and transport policies aimed at reducing road traffic noise levels, improving road safety, and safeguarding the health and well-being of youth and communities.

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ACTIVE MOBILITY SOLUTIONS FOR CHILDREN AND YOUNG ADULTS TO GENERATE HEALTH, SAFETY, SOCIAL AND ENVIRONMENTAL BENEFITS

Because travel is essential to everyone's daily lives, **active mobility** — including walking and cycling — is a practical and sustainable way to integrate physical activity[71],[72] into a busy day. **Active mobility** is associated with a decrease in risk for all causes of mortality, a decrease in risk for NCDs, a decrease in metabolic syndrome and a decrease in obesity.[73] A systematic review of 17 studies showed that commuting by walking or cycling reduced all-cause mortality by 9% and cardiovascular mortality by 15%.[74] Youth have the right to independent mobility with equal, safe access to opportunities; however, weak transportation policies, car-centric city planning, and lack of safe infrastructure in many countries prevent children and young adults from moving safely.[75]

Walking and cycling are not only healthy behaviours but are free (or cheap) ways to move. Young people only decide not to walk or cycle when they do not feel safe to do so.[76] The lack of opportunities and spaces for safe and active mobility has a direct impact on children's health as estimates suggest that 3% of global child deaths are due to physical inactivity, often associated with inadequate walkability and limited access to cycling paths.[77] The lack of accessible and safe infrastructure for pedestrians, cyclists, and persons with disabilities is thus a leading inhibitor for active mobility.

Prioritising pedestrian-friendly and cycle-friendly environments not only enhances road safety, but also contributes to a reduction in crime, an increase in feelings of safety, and a decrease in the prevalence of many chronic diseases — all as a result of increased physical activity.[78,79] A study conducted by the WHO in Accra, Ghana found that investing in walking and cycling infrastructure could save up to 33,000 lives from increased physical activity over a 35-year period, saving a total of US$15 billion from averted healthcare costs.[80] A similar study by the World Bank in five Latin American cities (namely Bogotá, Cali, Medellin, Santiago de Chile, and Mexico City) found that these cities could avoid 10 premature deaths per 100,000 inhabitants each year by increasing walking and cycling

71 International Society for Physical Activity and Health. (2020). Eight Investments That Work for Physical Activity. www.ISPAH.org/Resources

72 Buehler, R., Kuhnimhof, T., Bauman, A., & Eisenmann, C. (2019). Active travel as a stable source of physical activity for one third of German adults : Evidence from longitudinal data. https://doi.org/10.1016/j.tra.2018.09.022

73 WHO Regional Office for Europe. (2022). Walking and cycling: latest evidence to support policy-making and practice. https://www.who.int/europe/publications/i/item/9789289057882

74 Dutheil, F., Pélangeon, S., Duclos, M., Vorilhon, P., & Mermillod, M. (2020). Protective Effect on Mortality of Active Commuting to Work : A Systematic Review and Meta - analysis. Sports Medicine, 50(12), 2237–2250. https://doi.org/10.1007/s40279-020-01354-0

75 UNICEF. (2018). Shaping urbanization for children. A handbook on child-responsive urban planning. https://www.unicef.org/reports/shaping-urbanization-children

76 UK road safety and mobility experts. (2021). Safer roads for all. https://www.saferoadsforall.org/

77 UNICEF. (2022). Technical Guidance for Child and Adolescent Road Safety _ UNICEF. https://www.unicef.org/documents/unicef-technical-guidance-child-and-adolescent-road-safety

78 Royal Society for the Prevention of Accidents. (2014). Road Safety and Public Health. https://www.rospa.com/rospaweb/docs/advice-services/rospa-road-safety-and-public-health.pdf

79 World Health Organization. (2020). Global action plan for the prevention and control of noncommunicable diseases 2013–2020. https://iris.who.int/handle/10665/94384

80 World Health Organization. (2020). Health and economic impacts of transport interventions in Accra, Ghana. https://www.who.int/publications/i/item/9789240017306

mode shares to 30% and 6%, respectively.[81] In Norway, a cost-benefit analysis of walking and cycling infrastructure around the country found that the estimated health benefits were four to five times greater than the costs.[82]

In addition to its physical health benefits, active mobility can also affect **mental health** positively in numerous ways.[83,84] Active mobility improves mental health through: increased brain health and cognitive function; sharpened problem solving skills; reduced risk of anxiety and depression; delayed onset of dementia; improved sleep outcomes; improved self-esteem and self-image; and boosted overall quality of life and sense of **well-being.**[85,86,87,88]

81 World Bank. (2021). Mobility and Development.http://hdl.handle.net/10986/36276

82 Saelensminde, K. (2002). Walking- and cycling track networks in Norwegian cities: cost-benefit analyses including health effects and external costs of road traffic: summary. https://rosap.ntl.bts.gov/view/dot/15517

83 World Health Organization. (2018). Global action plan on physical activity 2018–2030: More active people for a healthier world. https://www.who.int/publications/i/item/9789241514187

84 Mahindru, A., Patil, P., & Agrawal, V. (2023). Role of Physical Activity on Mental Health and Well-Being : A Review. 15(1), 1–7. https://doi.org/10.7759/cureus.33475

85 World Health Organization. (2022). Guidance on safe environments and mobility. https://www.who.int/tools/compendium-on-health-and-environment/safe-environments-and-mobility

86 World Health Organization. (2020). Guidelines on physical activity and sedentary behaviour. https://www.who.int/publications/i/item/9789240015128

87 Danish Health Authority. (2020). How the urban environment impacts physical activity. https://www.dors.it/documentazione/testo/202005/Report_af_urbanenv_2020.pdf

88 U.S. Department of Health and Human Services. (2018). Physical Activity Guidelines for Americans, 2nd edition. https://health.gov/physical-activity-guidelines/current-guidelines

Safer road infrastructure enabling active mobility can also increase young people's perception of security, livability, sense of community, social interaction and social cohesion.[89,90] Active mobility on protected paths can save users time and money on every trip, making it a cost-effective transport mode. This is especially important for young people with lower incomes , whose spending on transportation accounts for a larger share of household income compared to those with higher incomes. The protected bike lane network in Guangzhou, China, saves users US$0.10 per trip, for a total of US$30 million per year in transportation cost savings.[91] This has inspired other cities like Yichang, which has implemented a 570 kilometre network of bicycle lanes. The network covers almost 36% of the city to pave the way for a low-carbon future.[92]

In order to reap the far-reaching benefits of safe road infrastructures, governments must implement measures including protected pedestrian and bicycle lanes, safe intersections, traffic calming measures, and reduced speed to safeguard young people. This will save young lives and have a positive effect on the environment. Studies in Antwerp, Belgium, and on German motorways indicate that lowering speed limits from 50 km/h to 30 km/h can reduce CO2 and NOx emissions by up to 25%[93].

In summary, national transport policies must prioritise safe and sustainable transport systems for young individuals through safer infrastructure, lower speed, and active mobility options via walking and cycling. Not only will these policies greatly contribute to save lives of young people and prevent their injuries, but they reduce greenhouse gas emissions, reduce physical inactivity, decrease road traffic air and noise pollution and their related NCDs, and mitigate climate change — thereby creating a safer, cleaner, quieter and healthier environment for all.[94]

89 te Brömmelstroet, M., Nikolaeva, A., Glaser, M., Nicolaisen, M. S., & Chan, C. (2017). Travelling together alone and alone together: mobility and potential exposure to diversity. Applied Mobilities, 2(1), 1–15. https://doi.org/10.1080/23800127.2017.1283122

90 Ergler, C., & Smith, M. (2023). Connecting Schools with Local Communities Through Walkable Urban Design. https://doi.org/10.1007/978-981-19-9972-7_9

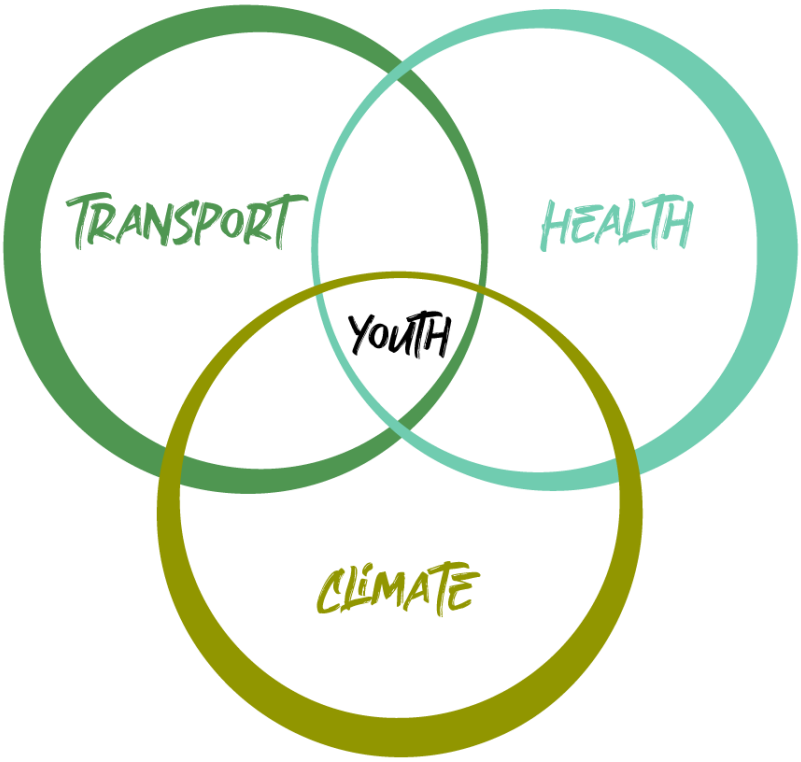
91 The Institute for Transportation and Development Policy (ITDP). (2022). Protected bicycle lanes protect the climate. https://www.itdp.org/publication/protected-bicycle-lanes-protect-the-climate/

92 Liu, D., Zhu, X., & Tam, A. (2023). Rebuilding China as the "Kingdom of Cycling" by Putting People and Planet First. https://slocat.net/rebuilding-china-as-the-kingdom-of-cycling

93 Coensel, B. De. (2011). Assessment of the impact of speed limit reduction and traffic signal coordination on vehicle emissions using an integrated approach. https://doi.org/10.1016/j.trd.2011.06.001

94 World Health Organization. (2022). Global status report on physical activity 2022. https://www.who.int/publications/i/item/9789240059153

SOLUTIONS THAT ALREADY EXIST



Global efforts to address health issues

The global concern over the devastating consequences of road crashes has been a focal point for world leaders, leading to significant international initiatives and agreements aimed at improving road safety. These efforts include milestones such as the publication of the World Report on Road Traffic Injury Prevention by the World Health Organization (WHO) in 2004, the establishment of the World Day of Remembrance for Road Traffic Victims by the United Nations (UN) in 2005, and the adoption of the second Decade of Action for Road Safety 2021–2030 by the UN General Assembly. These initiatives have been pivotal in raising awareness, setting targets, and mobilising action to address road traffic deaths and injuries globally. Additionally, road safety has become increasingly integrated into broader international agendas, such as the Sustainable Development Goals (SDGs), with two targets (3.6 and 11.2) addressing road safety, and the New Urban Agenda, recognising the interconnectedness of road safety with other urban development challenges. The inclusion of youth as key stakeholders in road safety efforts highlights their crucial role in shaping the future of transportation systems and underscores the need for their meaningful participation in decision-making processes.

The **Global Plan for the Decade of Action for Road Safety 2021–2030** recognises meaningful participation of youth as key stakeholders in designing and delivering road safety. Whereas young people were once thought of as a stakeholder to 'inform' after a decision was made, the Global Plan of Action emphasises the need for young voices at the decision-making table. Through global collaborations and youth-led initiatives, the international community continues to work towards creating safer and more sustainable road environments for all. As illustration, in June 2023, the Global Network of Heads of Road Safety Agencies was established to assist countries in implementing the Global Plan of Action by promoting safe mobility through collaborative efforts and policy coordination.[95]

International best practices

The Safe System Approach, pioneered by the Netherlands in 1992[96] and further developed through Sweden's Vision Zero programme in 1997, is a globally embraced road safety strategy prioritising the protection of all road users and shared responsibility among stakeholders. Analysis across 53 countries from 1994 to 2015 shows that nations implementing Safe System interventions had the lowest rate of fatalities per 100,000 inhabitants and the fastest rate of change in fatality levels.[97] This approach, adopted by over 20 cities worldwide, integrates principles into transportation policies and practical implementations, complementing road safety with sustainable mobility measures to enhance overall safety and well-being.

Best Practices

Target 3.6.

Reduce global deaths and injuries from road traffic crashes

To reduce the deaths and injuries of all people, especially the young, from road traffic crashes, several evidence-based strategies combining engineering, enforcement of legislation and education have been successfully implemented worldwide.

95 World Health Organization. (2023). Global Network of Heads of Road Safety Agencies Meeting. https://www.who.int/news-room/global-network-of-heads-of-road-safety-agencies-meeting-2023

96 SWOV. (2018). Sustainable Safety 3rd edition – The advanced vision for 2018-2030. https://swov.nl/nl/publicatie/sustainable-safety-3rd-edition-advanced-vision-2018-2030

97 World Resources Institute. (2018). Sustainable and safe : A vision and guidance for zero road deaths. https://www.wri.org/sustainable-and-safe-vision-and-guidance-zero-road-deaths

Engineering intervention. The International Road Assessment Program (iRAP), with its Star Rating framework, is the umbrella programme for road infrastructure assessment worldwide. With over 1.5 million kilometres of star ratings conducted, 128 countries have directly benefited from $100 billion in road investment, resulting in thousands of lives saved.[98] Additionally, iRAP's Star Rating for Schools (SR4S) programme helps in implementing safe zones around schools. In Mexico, simple interventions around schools raised average star ratings from one to three stars, resulting in a 69% decrease in road traffic conflicts. Overall, SR4S has been used in 834 schools across 52 countries, driving millions of dollars into safety improvements.[99]

The School Area Safety Assessment and Improvement (SARSAI) program, developed by AMEND, also enhances school safety through infrastructure improvements like footpaths and speed humps. In Dar es Salaam, Tanzania, SARSAI reduced school zone speeds by 60% and lowered child injury rates by 26%. Deployed in over 50 school areas across 9 sub-Saharan African countries, SARSAI has prevented 500 injuries annually among 38,000 students.[100]

Enforcement of legislation. If traffic laws on distracted driving, drink-driving, seat-belt wearing, speed limits, helmets, and child restraints are not respected, they cannot generate the expected reduction in road traffic fatalities and injuries.[101] In Tunis, Tunisia, a seat belt law had existed since 2002 but lacked enforcement. After advocacy efforts by a road safety NGO, a holistic enforcement plan for the law was implemented in 2017. As a result, within a year fatalities decreased by 8.8%, and serious injuries dropped by 9.5%, demonstrating the effectiveness of enforcement measures.[102]

Peer to peer education. Road safety education programmes and awareness campaigns can be very effective to increase safer behaviour among young people, especially when they are youth-led. "Up to zero," a youth-driven movement supported by YOURS, is an example of an effective campaign implemented in 2021. Its aim was to make Jordanian youth more aware about road safety issues, Vision Zero principles, and encourage them to be more involved. It led to a group of young activists leading a change in road safety perspectives in Irbid, Jordan. Seatbelt-wearing rates by youthincreased in Irbid, and the project's objectives are still being achieved through interactive youth workshops.

98 International Road Assessment Program. (2023). Latest metrics show safer roads influence in 90% of world countries. https://irap.org/2023/08/latest-metrics-show-safer-roads-influence-in-90-of-world-countries/

99 International Road Assessment Program. (2017). 5-Star School Journey for Lusaka Students https://irap.org/2017/11/5-star-school-journey-for-lusaka-students/

100 World Resource Institute. (2020). School Area Road Safety Assessments and Improvements. https://prizeforcities.org/project/sarsai

101 World Health Organization. (2023). Road traffic injuries. https://www.who.int/road-traffic-injuries

102 Cardoso, J., et al. (2019). Analysis of good practices in Europe and Africa. https://repository.lboro.ac.uk/articles/report/Analysis_of_good_practices_in_Europe_and_Africa/9461369

Target 3.4.

Reduce premature deaths from NCDs and promote mental health and well-being.

Promoting active mobility through walking and cycling is one of the most efficient win-win strategies, tackling the prevention of NCDs due to increased physical activity and promoting mental health and well-being, while outweighing the potential risk from air pollution and traffic exposure.

Promotion of cycling. The city of Fortaleza, Brazil, implemented 257.5 kilometres of cycle lanes in 2019, which has increased the number of cyclists, increased active mobility rates in the city, and decreased crash deaths and injuries.[103] Similarly, Barcelona's bike sharing programme (Bicing), providing over 6,000 bikes in 600 locations, has resulted in 25,000 people choosing bikes over cars every day, saving 9000 tonnes of CO2 emissions, and avoiding 12 premature deaths every year.[104]

School streets. In Seattle, USA, the city has created a walking and cycling environment around schools, with streets closed for pass-through traffic including parents dropping off students. As a result, students are more active and there has not been a child under 18 killed while walking or biking on Seattle's streets between 2014-2023.[105]

Bicycle heroes: Youth voice for active mobility. Supported by EIT Mobility, the project engaged nearly 10,000 children across Dublin, Lisbon, and Rome to identify the obstacles and benefits of active mobility, and propose solutions to the barriers they face getting to school on foot or by bike. Then, 150 bicycle heroes were selected among the children to supervise the implementation of the solutions. This was a successful youth-led initiative illustrating how young people — even children —can be involved in the creation, design, and implementation of solutions for the problems that affect them the most.[106]

103 Mobilise Your City. (2021). Mastering Mobility and active and walkable cities. https://www.mobiliseyourcity.net/reflecting-about-barriers-and-co-creating-solutions-active-and-walkable-city

104 Rojas, de Nazelle A., & Tainio, M. (2011). The health risks and benefits of cycling in urban environments compared with car use: health impact assessment study. https://www.bmj.com/content/343/bmj.d4521

105 Marchetti, L., March, K., & Pullen-Seufert, N. (2023). Seattle models strategies for equitably advancing safe walking and biking for youth.https://www.pedbikeinfo.org/cms/downloads

106 Roma mobilita. (2022). Bicycle Heroes.https://romamobilita.it/en/bicycle-heroes

Target 3.9.

Reduce premature deaths from exposure to pollution

Although eliminating motor vehicles entirely would address road traffic pollution, it's impractical in today's car-centric era. Instead, interventions promoting a shift to cleaner transportation modes have proven effective in reducing traffic-related pollution.

The 15-minute city initiative, originating in Paris during the Covid-19 pandemic, this advocates for walkable urban areas wherein all essential amenities are within a 15-minute walk, promoting active mobility especially among youth. (R66). Implemented in cities like Portland, Oregon, it has led to improved air quality, reduced traffic congestion, and increased physical activity.[107] In Africa, Johannesburg is leading the way with Rea Vaya, the continent's first full bus rapid transit system, offering public transport to marginalised communities in low-income areas. Rea Vaya has notably cut CO2 emissions by 1.6 million tons in 2020 by encouraging a shift from cars to buses.[108] (RN30).

Noise management strategy. Berlin had over 500,000 residents exposed to nighttime road noise levels of at least 50 decibels, and decided to undertake interventions to mitigate the issue. By reducing traffic volume through measures like converting two-lane streets with heavy traffic to single-lane roads, and by creating space for cycle lanes and pedestrian islands, the number of people exposed to high nighttime noise levels decreased by over 50,000.[109]

107 Envirotech (2023). Could 15-Minute Cities Reduce Urban Air Pollution? https://www.envirotech-online.com/news/air-monitoring

108 Joburt. (2008). Johannesburg's Rea Vaya project is an environmental first. https://joburg.org.za/media_/MediaStatements

109 European Environment Agency. (2020). Environmental noise in Europe. https://www.eea.europa.eu/publications/environmental-noise-in-europe

LOCAL ACTIONS TO A GLOBAL PROBLEM

Young members of the Global Youth Coalition for Road Safety have committed to evidence-based solutions that will save lives, to act as role models for safe road behaviour, and to be the change they would like to see in their local communities.[110] Local Actions Projects are innovative community-level initiatives conceived, led, and implemented by young people who are members of the Coalition.[111] The projects showcase the credibility of youth leadership for safe and sustainable solutions, act as pilots for innovative ideas, and provide an evidence base on effective measures to be transferred all around the world.

YOUTH FOR POST-CRASH CARE

LED BY

STEPHEN KOME

from Cameroon.

In the face of persisting challenges in road safety, Stephen found his calling to make a difference. Witnessing the alarming rate of crashes and the lack of significant improvements in safety measures, he felt compelled to take action.

Understanding the profound connection between road safety and public health, particularly in regions like Cameroon where resources are limited, Stephen embarked on a mission that closely aligns with Sustainable Development Goal 3 – reducing fatalities and injuries resulting from crashes.

"Youth for Post-Crash Care" directly aligns with Sustainable Development Goal 3 (SDG 3) of ensuring healthy lives and promoting well-being for everyone of all ages. The project's primary objective is to enhance road safety for motorcycle riders,

110 Global Youth Coalition for Road Safety. (2020). Global Youth Statement for Road Safety. https://claimingourspace.org/youthstatement

111 Global Youth Coalition for Road Safety. (2020). Local actions. https://claimingourspace.org/localactions

youth, and students, particularly focusing on post-crash care and awareness of risk factors. By advocating for behavioural changes such as helmet usage and improving post-crash care services, Stephen aims to address the alarming rates of road traffic crashes in Cameroon, where inadequate post-crash management contributes significantly to fatalities, especially among young people. Through this Local Action, Stephen empowers young people to drive positive change in their communities, thereby contributing to the overarching goal of SDG 3 to reduce preventable deaths and injuries on the road.

The project tackles crucial aspects of SDG 3 through a multifaceted approach. He organised capacity-building workshops targeting motorcycle riders and youth, with a strong emphasis on post-crash care and risk awareness. By fostering partnerships with local associations and decision-makers, Stephen ensures that his Local Actions are deeply rooted within communities and reflect local concerns, prioritising the empowerment and education of young people to nurture a culture of road safety and well-being.

Recognising the indispensable role of collaboration, the project emphasises the need for public health professionals and road safety advocates to work hand in hand. He urges public health workers to acknowledge road safety as a public health issue and underscores the importance of addressing it comprehensively, from prevention to post-crash care. Stephen advocates for the adoption of cost-effective, community-driven solutions and stresses the significance of involving young people in decision-making processes.

Through unwavering commitment and advocacy, Stephen hopes to inspire others to join the cause and affect meaningful change in road safety, particularly in low- and middle-income countries where the impact of crashes is most deeply felt.

"Improving speed management can save more than 50% of the fatalities and serious injuries occurring on the world's roads," Stephen asserts, underlining the critical link between speed management and crash prevention. He advocates for a proactive approach, urging decision-makers to integrate speed management practices into every stage of road development. *"Before any development project, there should be a consideration for traffic calming measures,"* he suggests, stressing the importance of pre-emptive action.

"Improving post-crash care is indispensable for better outcomes for those involved in crashes," he explains. By directing resources towards post-crash care, decision-makers can notably elevate the standard of care and bolster survival rates in the aftermath of crashes. These strategic interventions, 19 Stephen contends, offer a pathway for Cameroon to significantly advance its road safety objectives, particularly in rural regions witnessing rapid expansion in road infrastructure. *"By integrating road safety measures into the initial phases of road construction, we can ensure that safety remains a paramount concern,"* he asserts, identifying the vital opportunity that exists at the development stage to ingrain road safety principles into Cameroon's transportation landscape.

WALK WITH ME:
HEALTHIER & GREENER JOURNEYS TO SCHOOL

LED BY

OLIVA NALWADDA

from Uganda.

Oliva Nalwadda's Local Action project in Uganda is not just about road safety; it's about bridging the gap in inclusivity for persons with disabilities within road safety endeavours. The urgency of this matter cannot be overstated, especially when considering that a significant portion of road crash victims are youth and adolescents. As Oliva pointed out, *"statistics from WHO indicate that the majority of fatalities and injuries are youth and adolescents,"* making road safety a pressing issue for this demographic.

In Uganda, like in many other places, road safety concerns are complex and multifaceted. However, Oliva highlights two critical issues: *"The biggest problem is enforcement and implementation."* She explains, *"Laws and policies exist but are not enforced, and there are gaps in implementation, especially regarding youth with disabilities."* Oliva's project aims to tackle these challenges head-on by empowering youth, especially those with disabilities, to become leaders in road safety initiatives.

Oliva's project encompasses a range of activities aimed at promoting road safety and inclusivity. One notable achievement is the development of a disability-inclusive road safety education curriculum, delivered by young people with disabilities to raise awareness among learners and communitymembers. These sessions, conducted in schools and communities, have played a pivotal role in educating individuals about road safety practices and reducing road crashes. Additionally, Oliva's collaboration with district health teams, NGOs, and education offices has resulted in the creation of a referral pathway for road crash victims, ensuring prompt access to care in case of emergencies. Through these strategic interventions, Oliva's project has not only raised awareness but has also contributed to tangible improvements in road safety and post-crash care within the communities they serve.

Oliva's inspiration to take action stems from her desire to support her community and give a voice to disabled youth. Her project builds upon previous efforts but with a specific focus on involving persons with disabilities in leadership roles. By developing a disability-inclusive road safety education curriculum and collaborating with various stakeholders, including district health teams and NGOs, Oliva's project directly addresses SDG 3.6, which aims to reduce road traffic crashes.

Oliva's message to public health policymakers is clear: empower young people with disabilities to educate their peers on road safety and consider the long-term effects of road traffic crashes on individuals with lifelong injuries. Through inclusive education and community involvement, Oliva's project demonstrates a tangible pathway towards achieving safer roads and healthier communities. As Oliva succinctly puts it, *"We need to involve those most affected in policy development and decision-making processes to ensure no one is left behind."*

RECOMMENDATIONS

GOVERNMENTS AND POLICY-MAKERS SHOULD PROMOTE:

- **Comprehensive Strengthening of Health Care Systems:** prioritise the comprehensive strengthening of health care systems to enhance prevention, treatment, and rehabilitation for road traffic injuries effectively. This entails investing in infrastructure, workforce training, equipment, and resources necessary for delivering quality care to injured individuals.
- **City-Level Policies Promoting Active Mobility:** develop and implement city-level policies and initiatives that encourage active mobility among children. This could include initiatives where car usage is restricted in certain areas to promote walking and cycling.

- **Development of Robust National Action Plans:** develop holistic national action plans with funding for road safety aligned with the Sustainable Development Goals (SDGs), particularly related to climate action and sustainable cities, and the Decade of Action on Road Safety 2021–2030. These plans should actively involve youth in decision-making processes and actions, ensuring their perspectives are integrated into policy development and implementation.
- **Integrated Urban Planning for Safe Mobility:** invest integrated urban planning approaches that prioritise safe and sustainable mobility. This includes designing cities with safe infrastructure for pedestrians, cyclists, and public transport users, while also designing travel demand management initiatives and incorporating features for speed reduction, such as traffic calming measures.
- **Stringent Enforcement of Road Safety Laws:** implement and enforce stringent road safety laws and regulations, focusing on critical aspects such as drink-driving, seat-belt usage, speed limits, helmet wearing, and child restraints.
- **Prioritisation of Healthcare Professional Training and Trauma Care:** prioritise the education and training of healthcare professionals in trauma care, integrating trauma and emergency training into medical school curricula and internships immediately after graduation.
- **Meaningful Youth Participation:** decision-makers should ensure meaningful youth participation in health policies and road safety initiatives. This involves actively involving young people in decision-making processes, programme development, and implementation strategies.

MULTILATERAL AGENCIES AND CIVIL SOCIETY ORGANISATIONS SHOULD PROMOTE:

- **Comprehensive Technical Assistance:** provide comprehensive technical assistance to national and global governmental, non-governmental, and youth-led organisations to effectively implement the Decade of Action for Road Safety 2021–2030. This assistance should include capacity-building activities, sharing best practices, and facilitating knowledge exchange to ensure the successful implementation of road safety initiatives at all levels.
- **Advocacy for Evidence-Based Road Safety Policies:** encourage the formulation and implementation of evidence-based road safety policies by supporting governments who have the capacity to implement quality data management systems, to sustain progress in reducing road traffic injuries.
- **Targeted Awareness Initiatives:** launch targeted initiatives aimed at increasing awareness of road safety measures among the general population and other relevant target groups, with a specific focus on vulnerable road users such as pedestrians, cyclists, and motorcyclists to promote safe behaviours on the roads.
- **Psychological Support for Road Injury Victims:** address the pressing need for psychological support for road injury victims by urging policymakers to

offer access to mental health services through integrating them into post-crash response protocols and providing training for healthcare professionals on trauma-informed care.

- **Analysis of Determinants of Health and Road Safety:** conduct thorough analyses to identify and understand the complex links between social, economic, and environmental determinants of health with road safety and road traffic injuries. This could involve multidisciplinary research, data collection, and policy analysis to identify priority areas for action.

YOUNG INDIVIDUALS AND YOUTH-LED ORGANISATIONS SHOULD PROMOTE:

- **Skill Strengthening Initiatives:** young individuals and youth-led organisations should strengthen the skills and expertise of youth in road safety by implementing targeted initiatives. These initiatives should focus on bolstering their understanding and proficiency in all aspects of road safety practices and principles, including safe road behaviours, advocacy strategies, and data analysis techniques.
- **Research Generation and Utilisation:** they should foster the generation and utilisation of research findings related to road safety and provide support for networking advocacy campaigns to promote road safety awareness and action.
- **Strategic Partnerships:** young individuals and youth-led organisations should forge strategic partnerships with both governmental and non-governmental entities. Collaborative efforts should be focused on designing, implementing, and assessing road safety policies at local, national, regional, and international levels.
- **Utilization of Social Media and Mobile Applications:** they should harness the power of social media platforms and mobile applications to facilitate data collection, establish trauma registries, and enhance communication channels. Particularly in low- and middle-income countries (LMICs), where resources may be limited, these digital tools can amplify efforts to improve road safety outcomes and response mechanisms.

CONCLUSION

Engaging young people in the design, implementation, and evaluation of road safety policies is crucial, as outlined in the Global Plan of the Decade of Action for Road Safety 2021–2030. Youth have a significant role to play in shaping the future of transportation for two main reasons. Firstly, they are disproportionately affected by road accidents, with road traffic crashes being the leading cause of death among individuals aged 5–29. Secondly, they are the ones who will inherit the consequences of today's decisions regarding transportation safety.[112] Active involvement of young people promotes a sense of ownership and responsibility, fostering a culture of compliance with road safety measures. Moreover, young people hold influence within their peer groups, making them effective advocates for responsible behaviour and safety awareness.

Recognizing the critical importance of youth health and well-being, urgent action is needed to invest in road safety measures, promote active mobility, and ensure meaningful youth participation in policymaking processes. The Global Youth Coalition for Road Safety emphasises meaningful youth engagement as a vital pillar in safeguarding the health and well-being of young people. Road safety, youth engagement, and promoting active mobility are interconnected aspects that require attention. Empowering young people to contribute to policy decisions and promoting active mobility will not only save lives but also create healthier environments for future generations. Prioritising these initiatives is essential to secure a safer and healthier future for youth worldwide. Additionally, as future leaders, their active involvement ensures the sustainability and success of road safety efforts, aligning with the global commitment to halve road crash deaths by 2030.

Investing in road safety not only saves lives but also stimulates economic growth. Halving road traffic injuries could lead to a significant increase in GDP per capita income growth over two decades. These resources can be reinvested in safe road infrastructure, fortified health systems, and disease prevention initiatives, thereby further advancing youth health and well-being. It is time to elevate road safety as a fundamental aspect of youth development and prosperity. Additionally, we call for prioritising walkability, promoting active mobility, and developing transport systems with minimal environmental impact, aiming to reduce air and noise pollution for the betterment of youth health and well-being.

112 World Health Organization. (2021). Global Plan for the Decade of Action for Road Safety 2021-2030. https://www.who.int/publications/m/item/global-plan-for-the-decade-of-action-for-road-safety-2021-2030

DEFINITIONS

Trauma Centre Levels:

Trauma centres are divided into five levels according to the American College of Surgeons (ACS). A Level I trauma centre provides the highest level of care for a patient. A Level IVor V trauma centre will stabilise an injured patient and arrange for transfer to a higher level of care.[113]

LMICs:

Every year, the analytical classification groups all economies into four categories: low income countries (LICs); lower-middle-income countries (LMICs); upper middle income countries (UMICs); and high income countries (or HICs).[114]

Non-communicable diseases:

Otherwise known as NCDs, these are non-transmissible diseases of often long duration. Examples of NCDs include mental health conditions, stroke, heart disease, cancer, diabetes and chronic lung disease.[115]

Active mobility :

A regular physical activity undertaken as a means of transport. It includes travel by foot, bicycle and other vehicles which require physical effort to get moving. It does not include walking, cycling or other physical activity that is undertaken for recreational purposes.[116]

Road traffic related air pollution:

A mixture of pollutants (Carbon dioxide, particle matter, nitrogen oxide, etc.) from vehicle exhaust and other particles such as road dust, evaporation of fuels, and tyre and brake wear.[117]

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