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Global road safety crisis

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Report of the Secretary-General

Summary

The present document responds to General Assembly resolution 57/309. It discusses road traffic injuries and the challenges relating to the prevention of road crashes and their impacts. It emphasizes that road traffic injuries now pose a global public health crisis that requires urgent action at the national and the international levels. It describes the magnitude of the problem, the health, social and economic consequences, and the risk factors and determinants that predispose certain groups to vulnerability to road traffic injuries. On the basis of input received, specific examples of interventions implemented by countries or organizations are used to highlight the fact that road traffic injuries can be prevented, and to discuss attributes of successful intervention strategies. The document calls on Member States, particularly developing countries, to stimulate a new level of commitment in tackling the problem of road safety. Follow-up reports on the steps taken and the monitoring of national rates of road traffic injuries and deaths are also recommended.

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I. Introduction

1. Road traffic injuries are a global problem affecting all sectors of society. To date, road safety has received insufficient attention at the international and national levels. This has resulted in part from: a lack of information on the magnitude of the problem and its preventability; a fatalistic approach to road crashes; and a lack of the political responsibility and multidisciplinary collaboration needed to tackle it effectively. However, much can be done to reduce the problem of road crashes. Indeed, many high-income countries have been able to reduce their road traffic injury burden by up to 50 per cent over the last few decades. The present document discusses current knowledge about road traffic injuries and the challenges that need to be faced in tackling this issue.

2. So far, the following Member States have submitted reports in response to resolution 57/309 of 22 May 2003, providing examples of how they are addressing the problem of road traffic injuries: China, Finland, Oman, Poland, Slovakia and Thailand.

3. The present report was prepared by the World Health Organization (WHO), and revised to include comments from Secretariat departments and other entities of the United Nations system, as follows: the United Nations Development Programme, the United Nations Children's Fund (UNICEF), the Economic Commission for Africa (ECA), the Economic and Social Commission for Asia and the Pacific, the Economic Commission for Europe (ECE), the Economic Commission for Latin America and the Caribbean, the Economic and Social Commission for Western Asia, the Department of Economic and Social Affairs, the Division for Social Policy and Development, the Population Division, the Statistics Division, the International Monetary Fund and the World Bank. The comments of contributing agencies that were used in preparing the report are available for consultation in the Unintentional Injuries Prevention Unit of the Department of Injuries and Violence Prevention of WHO.

II. Magnitude of the problem

4. In 2000 an estimated 1.26 million people worldwide died as a result of road traffic injuries. Road traffic injuries accounted for 2.2 per cent of global mortality and were responsible for 25 per cent of all deaths due to injury. Around the world, injuries are among the leading cause of death for people aged 15 to 44, and road traffic injuries are responsible for 25 per cent of all deaths due to injury.

5. Road traffic injuries also exact a heavy toll in terms of the ill health they cause. In 2000, road traffic crashes ranked as the ninth leading cause of mortality and morbidity, accounting for 2.8 per cent of all global deaths and disability. World Health Organization (WHO) projections suggest that by 2020 road traffic injuries could rank third among causes of death and disability, ahead of such other health problems as malaria, tuberculosis and HIV/AIDS.

III. Who is affected

6. The numbers and rates of road traffic injuries vary by region, age, gender and road user type.

7. The burden of road traffic injuries falls disproportionately on people in low- and middle-income countries. Although the number of motor vehicles per capita is considerably higher in high-income countries, low- and middle-income countries have the highest burden of injuries and fatalities due to road crashes. For example, in 2000 road traffic injuries killed more than 1 million people in low- and middle-income countries (90 per cent of the global mortality resulting from motor vehicle crashes) and 125,000 (10 per cent) in high-income countries.

8. The magnitude of the road traffic injury problem varies considerably according to geographical region. Of the 1.26 million annual road crash deaths in 2000, more than a third (435,000) occurred in South-East Asia. Although South-East Asia has the highest proportion of global road fatalities, Africa has the highest road traffic death rate, 28 deaths per 100,000 population. The ill health, or morbidity, that results from road traffic injuries also differs widely by region, with South-East Asia accounting for more than one third of the morbidity resulting from road traffic injuries each year. When comparing fatalities by level of motorization, the regional variation is different. For example, Sweden has a relatively low rate of 1.3 deaths per 10,000 vehicles, whereas in some African countries the rate is more than 100 deaths per 10,000 vehicles.

9. Road traffic injuries involve issues of equity. They disproportionately affect the poor in developing countries, where the majority of road crash victims are vulnerable road users (pedestrians, cyclists, children, passengers). In more developed countries too, there are steep social class gradients in figures on pedestrian injury, with children of lower socio-economic status being more likely to die in collisions involving pedestrians than their more affluent counterparts. A further inequity issue is that poorer socio-economic groups have less access to medical services, leading to disparities in chances of recovery or survival. An important inequity is the trend of investing increasing resources in the building and maintenance of an infrastructure for private motorized transport, while overlooking the public transport needs of the larger part of the population.

10. Road traffic injuries disproportionately affect young people. More than 50 per cent of global mortality due to road traffic injury occurs among young adults, aged 15 to 44. Similarly, morbidity is highest among this age group, whose members account for about 60 per cent of worldwide morbidity each year as a result of road traffic injuries.

11. Globally, the road traffic injury mortality rate for males is almost three times as high as it is for females. Males in South-East Asia and Africa have the highest road traffic injury mortality rates worldwide. Similarly, the rate of morbidity that results from road traffic injuries is higher for men than for women, with males in China and India suffering disproportionately from this cause of ill health.

12. Fatalities as a result of road traffic injuries differ by road user type (e.g., pedestrians, cyclists, motor vehicle occupants, motorcyclists and users of public transport). The impact of road traffic injuries on these user types varies considerably between high-income and low/middle-income countries. For example, in most high-income countries, the majority of road traffic deaths relate to car occupants (drivers and passengers). However, in developing countries road traffic fatalities occur mostly among people who do not own or have access to a car: pedestrians, motorcyclists, cyclists and users of public transport. For example, according to an ECA study conducted in a number of African countries in 1997, pedestrians were

the victims of 75 per cent of road collisions in Abidjan, 65 per cent in Nairobi and 89 per cent in Addis Ababa.

13. Current and projected trends in motorization signal that the problem of road traffic injuries will get worse, becoming a global public health crisis. Data from many countries show a clear relationship between increasing levels of motorization and the number of road deaths. The rapid rate at which motorization is taking place in many low- and middle-income countries means that these countries will have less time to address the problem of increasing road traffic injuries and to mitigate their adverse consequences. WHO estimated in 1996 that by 2020, road traffic crashes would be the second leading cause of mortality and morbidity in developing countries. This is in contrast to higher-income countries, where long-term development means that vehicle use evolves at a slower pace, allowing road safety efforts to evolve in parallel. For example, in Finland, 30 years of government campaigning on road safety have led to a 50 per cent decrease in the number of fatalities, despite a tripling of road traffic volume.

IV. Social and economic impacts

14. Road traffic injuries have enormous health, social and economic impacts on individuals, families, communities and nations.

15. Besides the direct physical and psychological impact on those directly affected by road traffic injuries, road crashes also place a heavy burden on those involved with the victims. Family, friends and the communities of those directly affected by road traffic injuries can also experience short- and long-term adverse social, physical and psychological outcomes. For example, every year in the European Union more than 50,000 people are killed and more than 150,000 disabled for life by road traffic crashes. This leaves more than 200,000 families bereaved or with family members disabled for life. It is frequently the breadwinner of the family who is disabled or killed as a result of a road crash. Therefore, in addition to the emotional impacts, those affected must cope with reduced family incomes, and frequently have to deal with criminal and/or civil justice systems.

16. There are also considerable indirect effects of road traffic injuries: members of the public may be affected by road traffic injuries even when they or their family members are not directly involved in road crashes. For example, fear of road traffic injuries can prevent old people from venturing outdoors. In many high-income countries, increasing use of cars has led to a general decline in walking and an increase in sedentary lifestyles, which in turn has had adverse consequences in terms of increasing obesity and cardiovascular health problems.

17. The injuries and disability resulting from road traffic crashes put a significant drain on economies, typically consuming between 1 and 3 per cent of a country's gross national product per annum. Globally, estimates suggest that the economic costs of road traffic injuries amount to \$518 billion per annum. In developing countries, the costs are estimated to be \$100 billion, twice the annual amount of development assistance to developing countries. These costs include direct medical costs, as well as indirect and longer-term costs. The economic impact of road traffic injuries is especially damaging, particularly for countries struggling with poverty alleviation and the overall challenges of development, because economically active age groups are the most vulnerable to such injuries.

18. The issue of traffic safety is relevant to countries that are trying to promote sustainable development. This has been highlighted at numerous conferences, most recently at the 2002 World Summit on Sustainable Development. It has been recommended that in developing countries where there is rapid motorization, urban development and transportation planning be integrated, and that reliance on mass transit and alternative modes of transport be increased. Such efforts should help to mitigate the adverse impacts of increased motorization.

V. Lack of information

19. In many countries, the quality of data being used to assess the road safety situation is poor and indicators are not standardized, making comparisons difficult. There are frequent discrepancies between data — for example, from police and from health-related sources. Underreporting of road traffic injuries also limits the validity of some existing data sources. Countries that have effective collection, management and analysis of road traffic crash data generally use a cross-sectoral range of sources (e.g. from police, transport and health sectors).

20. Road safety is inadequately researched in many countries. Information is lacking on many aspects of the problem. Funding for research relating to road traffic injuries is disproportionately low given the impact it has on both mortality and morbidity. From the perspective of national Governments and development agencies, the economic impacts of road traffic crashes, injuries and fatalities are of major importance. However, many countries lack the data needed to accurately calculate the costs of road traffic crashes and their impacts, to evaluate the cost-effectiveness of prevention strategies and to decide what priority to give to various intervention strategies.

21. A lack of research means that the magnitude of the problem, its impacts and the cost and effectiveness of intervention are not fully understood, particularly in low- and middle-income countries.

VI. Risk factors and determinants

22. A number of factors that affect the probability of a road traffic injury and can be modified by intervention have been identified. These can be considered within a “systems approach”, which is aimed at identifying all the sources that contribute to crashes and then trying to reduce their consequences. Thus, particular risk factors or determinants would be considered for vehicles, car occupants and the road environment.

23. *Speeding*. The reduction of vehicle speed is a priority in road crash prevention. According to several studies on the impact of speed on road traffic injuries, a decrease in speed of 1 per cent decreases the occurrence of injury by 2 to 3 per cent, and the occurrence of fatal accidents by approximately twice as much. The impact on pedestrian injuries is also greatly affected by vehicle speed: as a car’s speed increases from 30 to 50 kilometres per hour, the likelihood of a pedestrian death increases by a factor of eight. Peer pressure is a contributing factor to vehicles’ travelling at high speed, as is the marketing of speed as a desirable attribute by vehicle manufacturers. Competition between commercial vehicles, a common practice in many developing countries, also leads to increased speed and thus a

higher risk of road crashes. Simple measures such as rumble strips and enforcement of speed limits can reduce speed and injuries.

24. *Alcohol.* Drivers and pedestrians with any level of alcohol in their bodies have been shown to be more likely to be involved in a road crash than those who have not been drinking, and their injuries are also likely to be more severe. Appropriate legislation and effective enforcement of drunk-driving laws have been shown to be effective in reducing the likelihood of road traffic fatalities and disability.

25. *Helmets.* In rapidly motorizing low- and middle-income countries, the number of motorbikes is increasing dramatically, with a parallel increase in head injuries. Studies in high-income countries have shown that the use of well-designed helmets reduces the risk of head injury in a road crash by 20 to 45 per cent. However, in low-income countries the use of such helmets is infrequent, as they are considered to be hot, uncomfortable and expensive. Helmets constructed locally in low- or middle-income countries are not always appropriately designed, thus providing little protection in the event of a crash. A helmet that is designed specifically to suit the environment and situation of low- and middle-income countries, coupled with laws that require helmet use and effective law enforcement, could substantially reduce fatalities and injuries among motorbike users.

26. *Safety devices (seat belts, child restraints).* The use of seat belts has been shown to significantly reduce the severity of injury in road crashes. Recent research suggests that seat belt use by front seat occupants reduces the risk of death in a crash by approximately 61 per cent. Similarly, underutilization or inappropriate use of child restraints substantially increases the risk of injury. For example, a study in Greece reported that two thirds of all childhood injuries from car crashes could have been avoided through proper use of child restraints. Despite this, the use of child safety seats and the appropriate restraint of children generally varies widely between countries. Obviously, safety devices such as these may protect the vehicle occupants but will not protect the vulnerable road users.

27. *Trauma care.* In many countries there is a striking absence of adequate trauma management once road collisions have occurred. A lack of timely and effective pre-hospital care and long intervals between crash and hospital admission (particularly in rural areas) are contributing factors to the outcome of road traffic injuries. Within the hospital setting, inadequate availability of trained personnel, medicines and supplies in emergency rooms also contribute to mortality and morbidity resulting from road crashes.

28. *Road design and roadway environment.* There is a huge potential to reduce road traffic injuries through better road design and maintenance. Better signs and markings, for example, are highly effective and low-cost ways of improving road safety. Safety assessments should be included in road infrastructure planning to eliminate avoidable risk, particularly to vulnerable road users.

29. *Implementation of road safety standards.* Introducing minimum standards for road safety (such as speed limits, rules against drunk driving, driver and vehicle licensing, etc.) are key elements of successful strategies to reduce road traffic injuries.

30. *Enforcement of traffic safety regulations.* Enforcement of road safety rules is a critical factor in reducing road traffic injuries. Experience in industrialized countries shows that measures to promote behavioural change by road users are decisively

influenced by the level of enforcement by public authorities. Involving law enforcement agencies in the development of road safety policies is therefore extremely important. In Slovakia, for example, the Department of Traffic Police is instrumental in planning road safety strategies and in the active enforcement of measures implemented. However, in many low- and middle-income countries, inadequate resources, administrative problems and/or corruption may contribute to poor enforcement.

31. *Improving vehicle safety.* In recent years there has been substantial progress in occupant protection through the introduction of legislative requirements for front- and side-impact crashworthiness. However, similar progress has not yet been made with regard to pedestrian injuries. Head trauma caused by blows from bumpers and bonnets is responsible for 80 per cent of serious injuries in pedestrian collisions. The protection of both vehicle occupants and pedestrians can be further improved by ensuring that vehicles are equipped with appropriate safety features and devices. Legislation and enforcement are required to ensure that minimum safety standards for the design of front ends of motor vehicles are met to make them less hazardous. Greater effort is also required to promote safety technologies that can contribute to the prevention of road crashes.

32. *Lack of vehicle inspection programmes.* The lack of proper maintenance for vehicles and heavy vehicles is a contributing factor to the problem of road traffic injuries. In many countries there are no inspection requirements for the annual registration of vehicles. This may result from lack of training for inspection personnel, inadequate resources and/or the low priority that is given to this problem.

VII. Intervention strategies

33. Road crashes can be prevented. To date, however, efforts to address the problem of road traffic injuries have frequently been ineffective. One reason for this may be the tendency for road traffic injuries to be seen as the focus of a single sector. An examination of strategies that have been successful in reducing road traffic injuries suggests that there is an urgent need for a shift to a multisectoral approach, with public health playing an instrumental role.

34. The historical approach to addressing the problem of road crashes has been to place responsibility for crashes on the road user. Road safety policies that have stemmed from this perspective have tended to be based on education, supervision and enforcement.

35. An approach is needed that recognizes the fallibility of road users and is aimed at reducing road crashes by designing the traffic environment with their limitations in mind. In a systems approach, not only the driver, but also the environment (infrastructure) and the vehicle itself are seen as part of the system in which road traffic injuries occur. Each of these three components has aspects that contribute to the likelihood of a road crash, and/or to the severity of crashes. For example, driver fatigue has been shown to increase the likelihood of road crashes; old, unsafe vehicle design may increase the likelihood of fatalities in a road crash; unclear marking of intersections may lead to an increased number of crashes. The systems approach is concerned with the identification of sources of risk and the consequent mitigation of these factors. The approach therefore involves those who build and operate the road system and vehicle manufacturers as equally instrumental in

reducing road traffic injuries. In Finland, for example, a Consultative Committee on Road Safety has specific targets that are decided by the Government. The aim is to influence legislation and enforcement pertaining to road safety, to improve aspects of the road environment that contribute to road traffic collisions and to integrate road safety into all policy-making that has a direct bearing on the road safety situation of the country.

36. A number of strategies and policies have contributed to dramatic decreases in road crashes in developed countries. However, these strategies may not be simply transferred to developing countries. The challenge is to adapt and evaluate these strategies, or else create new strategies, for developing countries, particularly those where road traffic fatalities are increasing at an alarming rate.

37. As well as through the prevention of road traffic injuries, the impact of road crashes can be reduced through the establishment of a comprehensive and effective system of trauma care. For example, Oman has developed a comprehensive trauma system that encompasses pre-hospital and hospital care, the rehabilitation of survivors of road traffic collisions and a trauma registry to collect detailed data on the consequences and costs of road traffic injuries.

38. Public health has an important role to play in the prevention of road traffic injuries. In particular, its role should include:

- data collection: to demonstrate the health and economic impact of injuries by collecting data on fatal and non-fatal injuries and coordinating with other data sources (e.g., police, coroner)
- ensuring appropriate care and rehabilitation for all injured persons
- monitoring and evaluating road safety interventions
- promoting a multisectoral approach to the prevention of road traffic injuries.

39. Strong political advocacy is required. Road safety is a political issue that frequently involves tensions between various sectors of society. For example, improving the rights of vulnerable road users may involve tensions with those advocating increased motorized travel. Furthermore, there is often a lack of clarity about the exact role and responsibilities of government at the local, national and international levels, which hinders effective and sustained political advocacy.

40. Improving road safety requires strong political will on the part of Governments. In Poland and Thailand, for example, the national road safety programmes are under the leadership of the Vice-Prime Minister and Deputy Prime Minister, respectively. However, this political will needs to be supported by collaboration with other credible stakeholders that have an interest in road safety (for example, victims' organizations, vehicle manufacturers). In addition to support from policy makers, improvements in road safety will require an informed citizenry that realizes that road traffic injuries are a preventable problem. Indicators of political will include established road safety programmes with regular monitoring, and with explicit and regular financing, so that the early momentum of programmes initiated can be sustained. These programmes should be based on national legislation aligned with the relevant international conventions, including the Vienna Conventions on Road Traffic and on Road Signs and Signals.

VIII. Conclusions and recommendations

41. The present document has highlighted the enormous impact of road traffic injuries in terms of mortality, morbidity and social and economic costs. Moreover, the evidence suggests that the global rise in road traffic injuries is only beginning and will exact a particularly heavy toll in developing countries.

42. Despite the magnitude of the road traffic injury problem and its great impact on mortality and morbidity worldwide, national and international funding for and research into the problem have been limited. This is particularly true in low- and middle-income countries, which bear a disproportionate share of the burden and where the problem can be fundamentally different in nature. The interventions required where most of the victims are pedestrians may be quite different from the interventions needed where most of the victims are drivers or passengers inside relatively well-protected vehicles. More research is urgently needed for accurate analysis of the problem, and to allow effective and cost-effective strategies to be identified for the prevention of road traffic crashes in different settings.

43. Road traffic injuries can be prevented. Sizeable reductions in road traffic injuries can result from moderate investment, if appropriate interventions are implemented. There is much that can be done by Member States, the United Nations and its agencies, through sharing resources and knowledge and building partnerships. In many regions these partnerships are already being developed. For example, in 1984, ECA organized the First African Road Safety Congress, the aim of which was to improve the identification and quantification of the continent's road safety problems. Subsequent meetings of the Congress have used this base as a focus for strategies that might be used to mitigate road crashes in the region.

44. It is recommended that the General Assembly:

(a) Call for efforts by the United Nations system to address the global road safety crisis. In particular, it is recommended that the relevant agencies be assisted in the development of additional activities commensurate with the magnitude of the problem and that a coordinating body be identified within the United Nations system to facilitate and coordinate these efforts within the United Nations and among United Nations and multilateral agencies. Different agencies can provide different skills and resources that can be used to effectively address this problem. For example, assistance in data collection can be provided by WHO, the World Bank, United Nations economic commissions and UNICEF. Support for policies on road safety can be provided by the World Bank and ECE. Advice for emergency health services is provided by WHO. Financial support for road safety efforts could be provided by the World Bank or the International Monetary Fund. Most United Nations agencies could integrate road safety into other policies, such as those relating to sustainable development, the environment, gender, children or the elderly;

(b) Call on Member States, particularly developing countries that bear a large proportion of the burden of road traffic injuries, to address the problem of road traffic injuries and reduce the adverse consequences of road crashes. This could include acceding to and implementing fully the international conventions that already address this problem, as well as developing new ones

in areas where existing conventions are lacking. For example, Slovakia is in the process of integrating all the relevant norms of the European Union into its own legislation, in addition to developing new amendments to road safety laws in the country;

(c) Encourages each Member State to assess its own road traffic safety problem and situation. This includes promoting and facilitating research that will build capacity and improve data collection methods, and encouraging collaboration between various sectors so that effective surveillance, data management and evaluation can be enhanced. Accurate assessment of the road traffic injury problem involves collecting data not only on deaths and morbidity, but also on the economic impact of road traffic injuries, so that this can be compared with other social problems or government priorities;

(d) Advocate continued and increased funding for the inclusion of the problem of road traffic injuries in priority programmes in the United Nations organizations, especially for low- and middle-income countries;

(e) Recommend that Member States aim to ensure that sufficient resources are available, commensurate with the size of the road safety problem in their countries. This includes identifying new income streams that have a logical link to road safety;

(f) Recommend that leadership for road safety efforts lie with Governments of Member States. A single agency or focal point is required to be responsible and accountable for road safety issues, with sufficient authority and resources to fulfil a leadership role. This agency should be responsible for involving other organizations and bodies within government, in order to create an environment that is conducive to road safety promotion. Similarly, the agency should be responsible for encouraging the participation of citizens in road safety efforts. For example, Oman has established a National Committee for Road Safety, an independent institution whose remit includes legislation, promoting the improvement of transportation services and raising awareness of the road safety problem;

(g) Encourages Member States to develop and implement a national strategy on road traffic injury prevention and appropriate action plans;

(h) Encourage Member States to facilitate multisectoral collaboration between various ministries and sectors. To date, collaborative efforts between sectors within countries have been lacking, and this has been reflected at the international level, where the efforts of the United Nations and other stakeholders have remained fragmented. The public health sector should play its role in these partnerships;

(i) Recommend that Member States implement specific actions to prevent road traffic crashes and minimize their consequences. These should be based on evidence and on a sound analysis of road traffic injuries, and should be culturally appropriate and tested locally. Specific actions implemented should be part of a larger strategy for effectively addressing the problem of road crashes;

(j) Support the development of national capacity through international cooperation. Member States should be encouraged to build, support and

sustain networks and partnerships at the national, regional and global levels in order to encourage effective collaboration on road safety issues;

(k) Call on the United Nations regional commissions to add to their respective work programmes activities that will (i) promote regional best practices regarding matters related to road safety, (ii) assist Member States in drawing up road safety standards appropriate to their setting, (iii) support human and technical capacity-building programmes pertaining to road safety, (iv) develop and implement sustainable transport policies that incorporate road safety, (v) adopt multisectoral approaches to road safety with clear targets and appropriate management structures and (vi) develop short- and medium-term strategies to address road safety priorities. These activities should be supported by the assignment of additional financial resources;

(l) Call on Member States to encourage the private sector to play an active role in road safety. This could include increasing efforts to make vehicles safe for occupants and vulnerable road users — for example, by implementing safer designs for the front ends of cars. For example, in Thailand a number of car manufacturers have instigated campaigns on road safety, including a campaign to discourage the use of mobile phones while driving. Private sector employers could also be encouraged to be proactive with regard to road safety and to support civil society initiatives on road safety.
