

# Update on Road Traffic Crashes

## Progress in the Middle East

Wahid Al-Kharusi FRCS

Published online: 14 August 2008  
© The Association of Bone and Joint Surgeons 2008

**Abstract** Road traffic injuries comprise the major share of all injuries globally. Traffic injuries kill 1.2 million people annually and injure 40 times as many, leaving a subsequent number totally disabled. Globally we spend approximately US \$500 billion annually. The Middle East encompasses West Asia and North Africa and is very diverse economically, culturally and socially. Prevention and management of road traffic crashes and injuries is difficult. Comparative data are not readily available and therefore developing unified policies is a mammoth task. Implementation of best practices is not uniformly advocated due to socioeconomic and cultural differences. Enforcement of endorsed legislation on road traffic safety is not uniform in the region. Professional staff to combat this pandemic are scarce and it is important that capacity building, knowledge sharing, and increased political will becomes a priority in the region. This paper discusses the problems encountered in the prevention and management of road traffic injuries from the site of injury to rehabilitation and social reintegration. The role of Oman and that of the Bone and Joint Decade in the United Nations on Global Road Safety and its update is highlighted.

## Introduction

Road traffic crashes (RTCs) and injuries are an ignored and perhaps unrecognized global pandemic of shocking proportion, even though they are predictable and therefore preventable. Almost 1.2 million people die in road traffic crashes worldwide and as many as 50 million are injured or disabled [2]. Most affected are young people between the ages of 15 to 39 years; traffic injuries are the number one killer of children under the age of 15 years. The World Bank estimates the global cost of road traffic crashes to be US \$500 billion, of which the developing countries alone are responsible for US \$100 billion. This is double all the development assistance these countries receive from the donor states [2]. Road traffic deaths and injuries impose a huge economic burden on developing economies, amounting to 1–2% of GNP in most countries [2]. Reviewing the ten leading causes of DALYs in the global burden of disease 1996, RTC by 1998 will be in the 9th position but will move to the 3rd position by 2020 [1]. The fatality rate of change per 100,000 population between 1980–1995 by region shows a rapid increasing gap (Fig. 1) [7]. The socioeconomic impact is due to the lack of advocacy, preventive programs, and holistic approach to trauma care. It has become evident steps must be taken to reverse this colossal problem and its devastating impact, especially in developing countries. The vulnerable road users must be protected.

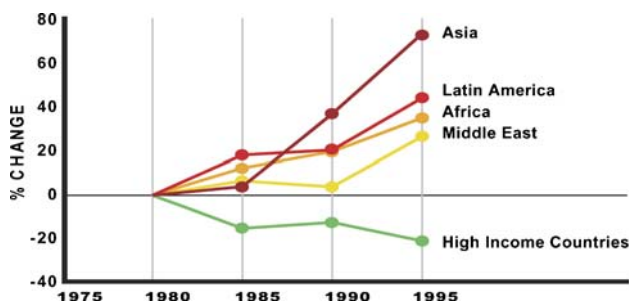
With this in mind the Bone and Joint Decade, The American Academy of Orthopaedic surgeons felt compelled to address these issues and to seek the involvement of the United Nations and its associated organizations. Addressing road traffic crashes is difficult administratively in part because the means of preventing and managing the problems cross various administrative and medical

---

The author certifies that he has no commercial associations (e.g., consultancies, stock ownership, equity interest, patent/licensing arrangements, etc.) that might pose a conflict of interest in connection with the submitted article.

---

W. Al-Kharusi (✉)  
Orthopaedics and Trauma, Khoula Hospital, PO Box 3007,  
Ruwi, 112 Muscat, Sultanate of Oman  
e-mail: wahidk@omantel.net.om



**Fig. 1** We have not a moment to lose. The cost of waiting is demonstrated by this slide—the difference between the top and bottom lines reflects not only a continuing gap in prevention action, but represents an equally unacceptable gap in our conscience, in our sense of social and moral responsibility, and our sense of justice.

bureaucracies; hence they end up being an orphan when it comes to addressing them at both political and administrative levels. Politicization of RTCs was mandatory and those responsible must be identified. It was only in 2003 that RTCs became recognized at the UN as a major global problem with devastating consequences, and at WHO to be primarily a public health problem (World Health Assembly Resolution 57, May 2004) [3] and not mainly a transportation issue, that needed to be urgently addressed. During the WHO World Health Day April 2004, when the theme was “Road Safety Is No Accident.” the WHO/World Bank world report on road traffic injury prevention was launched. This was an important landmark in road safety. After the adoption and direct intervention of the Sultanate of Oman by its sponsorship of four UN resolutions on road safety—which were unanimously adopted—the influence of the UN was apparent globally (Table 1). The first resolution instructed the WHO to produce a World Report on Road Traffic Injury Prevention [9, 10]. (UN Resolutions: 1st—March 2003, # 57/3007. 2nd—September 2003,

# 58/9. 3rd—April 2004, # 58/289. 4th—October 2005, # A/06/L8 [3].) The second resolution adopted road safety in the agenda of the UN General Assembly of September 2003. The third resolution mandated the WHO to be the coordinator of UN road safety initiatives globally; the fourth mandated a Global Road Safety Week in April 2007 when the World Youth Assembly was held in Geneva resulting in the Global Youth Declaration. A fifth Resolution is being formulated and will be discussed for adoption at the UN General Assembly in April 2008 [3]. This will authorize a United Nations Ministerial Meeting in 2010 to endorse road safety conventions. This is a major step that we anticipate all UN member states will commit to road safety. From this platform a number of initiatives on Road Safety materialized. Two Global Stakeholders meetings were held in New York and Geneva organized by Global Road Safety Collaboration, also a Lord Thompson Report “Make Road Safe” in collaboration with the FIA Foundation was launched in February 2007. This report was intended for the G8 summit to address road safety issues and to convince the G8 forum to adopt road safety as one of the millennium goals [2]. As one of the recommendations of this report a World Bank facility was established mainly to finance road safety projects in the low- and middle-income countries. There were many activities at the WHO World Assembly with adoption of four resolutions (Table 2). These were (1) the dedication of the World Health Day-WHD 2004 for Road Safety; (2) the release of the World Report on Road Traffic Injury Prevention; (3) the endorsement of the World Assembly for WHO to be the coordinator for the UN on Road Safety and, in 2007, adoption of a resolution on prehospital care. The combined efforts of the Assembly, together with other international bodies, have made a great difference in revealing the nature of this safety crisis.

**Table 1.** Unanimous adoption of 4 UN resolutions

UN resolutions ON road safety	Date of the resolution	Resolution number
1st UN resolution	March 2003	57/3007
2nd UN resolution	September 2003	58/9
3rd UN resolution	April 2004	58/289
4th UN resolution	October 2005	A/60/L8

**Table 2.** World Health Organization—WHO initiatives

2003	1. Endorsed WHD 2004—7th April. 2. Approved UN Resolution 57/3007	1. Road Safety Is No Accident. 2. Submit to UN The world report on traffic injury prevention.
2004	1. Resolution WHA 57.10 2. Endorsement of UN Resolution 58/289	1. Road Safety Is A Public Health Problem. 2. WHO to be the Coordinator for UN Road Safety Initiatives.
2007	Endorse WHA 60/22	Emergency pre-hospital medical care system agenda

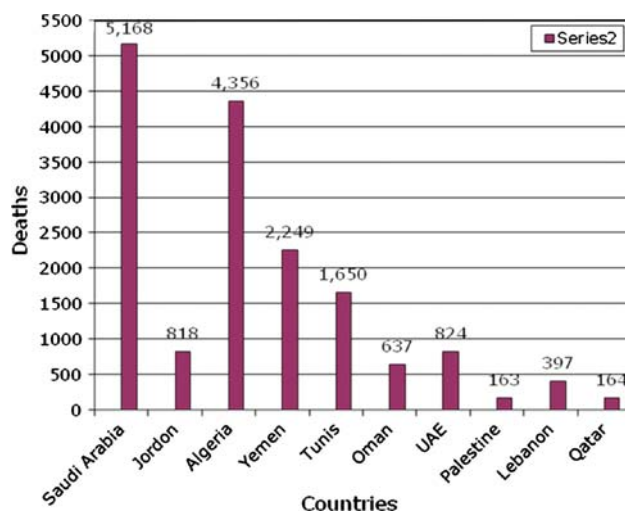
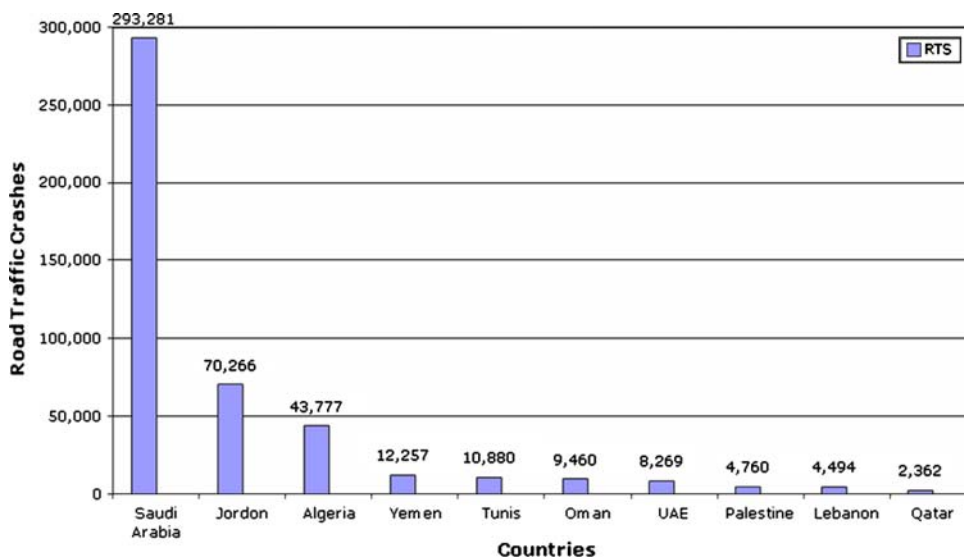
region are not readily available, thus developing unified policies for the region is daunting. Lack of implementation of best practices in the region is due to the different levels of enforcement of legislation. Furthermore, the lack of provision of holistic trauma care has a direct impact on the outcome of road traffic crashes and injury which is visible due to the sociocultural and economic differences between the countries in the region. Professional staff are scarce and the deficiency must be addressed for any positive development to occur. As a result, management of road traffic crashes needs to be specifically addressed at the country level with regional cooperation.

The Eastern Mediterranean Region has the world's highest traffic fatality rate among young men aged 15–29 years at 34.2 deaths per 100,000. The deaths are estimated to cost US \$7.4 billion annually. Traffic fatalities from the year 2000 to the year 2020 are expected to rise by 68% [10]. Within this region in 2002 the mortality rate due to injury was twice that of the rest of the world [9]. Injuries caused 16% of all deaths [10]. The low- and middle-income countries of the Eastern Mediterranean Region accounted for the second highest mortality rate after Africa. Worldwide mortality from road traffic accidents averages 26.3% per 100,000 people per year. Global and regional records suggest there are 40 million people with disabilities who have limited access to rehabilitation and nearly nonexistent social reintegration.

Trauma care is varied with some of these countries lacking acceptable prehospital emergency medical system (EMS) coverage with a limited holistic approach to trauma management. Trauma care at the primary level or dispensary level is limited or nonexistent in many of the countries in the region. Even though there is a definitive desire and evidence of willingness for change with improved political

will, effective injury prevention policies have not yet been conceived and/or implemented. However, the concepts of dealing with and managing road traffic crashes and injuries in the region have lately changed for the better. The number of road traffic crashes has swollen with an increase in morbidity and mortality (Figs. 2, 3; Table 3) due in part to the increase in the number of motor vehicles, the number of driving hours, increase in the road network, industrialization and, in some countries, burgeoning tourism. In some countries despite the introduction of a number of preventative steps, the number of crashes and injuries are increasing (Royal Oman Police Annual Report). This trend is to be expected, as the positive changes will likely take at least a decade until we experience the paradigm shift as seen in Europe in the seventies. The regional concept is an

**Fig. 2** The number of road traffic crashes recorded in some Arab countries in 2004 is shown.



**Fig. 3** The number of road traffic deaths recorded in some Arab countries in 2004 is shown.

**Table 3.** Total number of road traffic crashes, morbidity and mortality recorded in Arab countries in 2004

Country	Number of vehicle	Number of RTC	Number of deaths	Number of injured
Jordan	612,330	70,266	818	12,727
UAE	1,100,765	8,269	824	10,233
Tunis	1,113,493	10,880	1,656	15,698
Algeria	4,000,000	43,777	4,356	64,714
Saudi Arabia	2,087,769	293,281	5,168	34,811
Oman	468,412	9,460	637	6,636
Palestine	186,153	4,760	163	4,905
Qatar	424,461	2,362	164	1,371
Lebanon		4,494	397	3,227
Yemen	60,254	12,257	2,249	13,117
TOTAL	10,053,637	459,806	16,432	167,439

active and tangible move towards decreasing morbidity, disability and mortality in our respective countries and within the region. This is to be achieved through increasing political will, a multisectoral approach towards road safety, enhancing education, training and research in the field of road traffic injuries and increasing funding for related projects. To work for a paradigm change in our region we must, with conviction, accept that road traffic crashes and road safety is a public health problem and that it adversely impacts our sustainable development. We must begin proactive advocacy both to the community and to the decision makers and work on building a sustainable political will and governance to handle a road safety agenda. We need to develop an active national plan; work vigorously to change the wrongly perceived concepts such as fatalism; endorse and actively carry out best practices recommended by the WHO; develop traffic legislation that must not only be actively enforced but also perceived as enforced; improve our data collection in a form that is at least regionally comparable, locally compatible and globally comparative, so that the data can be used to develop strategic planning and government policies, improving not only our facilities and infrastructure but developing specialized human resources. A number of different initiatives at the country level have been achieved which have a positive impact on road safety. In Jordan, for example, a new NGO for child safety has been instituted and also a database center for improving crash statistical information; Qatar is to form a supreme council for road transportation and safety and safe road construction; Iran assembled a surveillance system and a road network to decrease road congestion; Pakistan has formed a traffic police unit to deal on the spot with offenders; Lebanon has endorsed a youth council; Emirates established a drivers' training center; and Kuwait developed a road safety association. Saudi Arabia created a high commission for road safety in Riyadh; Oman has built an active road safety academy, a state-of-the-art

vehicle registration and mechanical center, a children traffic village, and established a number of royal decrees on road safety; and finally, at the Eastern Mediterranean regional office, they are conducting a regional survey at the country level to gather information on the extent of injuries including road traffic injuries to provide data for decision-makers who will formulate strategic planning and initiate new policies (Table 3; Figs. 2, 3).

#### Sultanate of Oman—As a Regional Example

Oman has seen miraculous transformation in the past 38 years since The Renaissance inspired and led by His Majesty Sultan Qaboos bin Said. The Sultanate of Oman is located in the southeastern corner of the Arabian Peninsula, with a coastline extending 1700 km and covering an area approximately 309,500 square km, of which 82% is desert. It is divided into 10 health regions with a population of 3,500,000 (2007 statistics) [6]. It is an autocratic benevolent form of government with a political system involving a Ministerial Cabinet and State Council. The members of Consultative Councils are elected by the people.

The health services are mainly provided by the Ministry of Health, together with the Royal Oman Police and the Royal Army of Oman. Seven years ago, encouragement of the development of the private health sector was initiated, resulting in a very active and successful private health care system today. By Royal decree health and education is afforded free of charge to nationals. For non-national residents, the sponsors are responsible for their health care.

The total budget allocated for the Ministry of Health in 2006 was 202,593,000 Omani Rials (OMR) with a recurrent annual expenditure of 24,145,000 OMR, of which 8,000,000 OMR is used annually for development of their services. There has been an improvement in the number of doctors to the population between 1970 (0.2:10,000) and

2006 (12.6:10,000). While the number of hospital beds per doctor in 1970 was 0.9, in 2006 it was 1.4 [4].

A number of studies are annually performed for planning purposes ranging from school health programs to clinic health service studies. The geographic distribution of MOH institutions as of Dec 31st 2006 in the 10 health regions is 199 health institutions with a population per hospital bed of 567 patients. There are 30 government hospitals and a number of health facilities with various health provisions with a total number of hospital beds of 4549 [4].

Hospital deaths in MOH hospitals have increased from 2,042 in 1995, to 3,027 in 2006. This is attributed to the increase in population. Inpatient morbidity in MOH institutions due to external causes in 2006 was 17,205, of which road traffic crashes and injury victims comprised 5217 patients, 891 of whom were between the ages 1–14 years. This indicates that the morbidity due to road traffic crashes is a third of the total number of morbidity due to external causes. This is quite high and needs to be reduced and brought under control [4].

Oman, one of the smaller countries in the region, has a population of 3.5 million people with a very wide network of strategically built roads. In 1936 Oman developed a traffic code. Since then it has embraced best practices to ensure road safety (Table 4). For Oman to embrace and adopt the concept of road safety within the UN framework was a natural phenomenon. It sponsored all four initial UN Road Safety Resolutions. Again, Oman is adopting the 5th Resolution as a followup. Oman approaches road safety through multisectoral collaboration and with increasing political will. In 1993 Oman instituted its first survey for road traffic crashes and injuries under the supervision of the National Program for Prevention and Control of Road Traffic Accidents. The results of the survey clearly indicated the need for change. It was agreed that to achieve success we must shift our focus from effect to cause, from

treatment to prevention and from response to anticipation of the issues. Also, the importance of understanding and optimizing human resources on a proactive basis was necessary. Therefore, the founding principles were to focus on road safety prevention policies that were nationally relevant, socioculturally appropriate and evidence-based, cross-disciplinary and multisectoral, action-oriented and, most importantly, sustainable. We had to deliver to the country holistic and acceptable standards of trauma care. With these objectives in mind, we developed an infrastructure to create a platform to develop capacity building, knowledge sharing and transfer, develop and record meaningful data, implement best practices, increase funding and sustenance of the political will, develop legislation and enforcement, consolidate regional cooperation and endeavor to learn from others regionally and globally. The tools used to achieve these objectives and advocate for improvement of road safety are: (1) collaboration with other agencies, especially UN agencies such as UN Road Safety Collaboration and UN regional offices such as ESCWA; (2) working closely with continental organizations such as Asian Community Dialogue – ACD; (3) involving the private and cooperate sectors through active participation and sponsorship NGO's, and locally involvement of the youths who are the most vulnerable (Youth Council and Declaration); and (4) most importantly, involving the community through community-based preventive programs.

In Oman, as in other countries, there are challenges to overcome such as program responsibility, inadequate specialized manpower, sociocultural issues such as fatalism and macho attitudes, the ever-increasing need for funding, lack of comprehensive data, deficiencies in the undergraduate curriculum in injury and trauma management and lack of research. Most aspects of these challenges have been addressed such as development of a comprehensive trauma register, an EMS system, modern regional hospitals supported by a level one trauma center, advocacy and awareness programs, introduction of road safety issues in school curriculum, and working towards development of a national action plan to include a youth council. A number of Royal Decrees across the board have been issued to empower national bodies to implement changes involving road safety. Currently, even with these measures, Oman road traffic crashes are fluctuating in number and in the extent of physical injuries to the victims. We need to do more to achieve acceptable results (Table 4).

**Table 4.** Oman traffic achievements

1936	Oman Traffic Code
1982	Road Traffic Awareness Committee
1986	Helmet Laws
1990	Safety Belt Laws
1993	1. Royal Decree For EMS Formation. 2. First Ever Countrywide survey on road traffic crashes.
1997	Higher Committee For Road Safety- Royal Decree 97/64 –1997
1998	Children Traffic Village
2000	Mobile Phone Laws and Mobile Radars
2004	Road Safety College. Fixed Radars countrywide.
2004	Launching of Ambulance EMS Service
2006	Vehicle Registration and Road Worthiness Centers

## Discussion

At the onset we must bear in mind that it takes a generation from the onset of change to realize tangible, positive

results. At the beginning, we will undoubtedly continue to experience increases in road traffic crashes and injuries especially with the growth in motorization and industrialization (Europe's experience in the sixties and seventies). We must ask ourselves how we can successfully and methodically challenge this pandemic in the EMRO region, and what is required for implementation of these changes. Short- and long-term action plans need to be implemented. We do not need to reinvent the wheel. The WHO World Report and its six recommendations and the UNECE transportation guidelines and regulations for road safety are an excellent starting point. The best practices recommended by WHO again are applicable globally and their implementation is the key to success. We all have similar regional needs. Practical and successful experiences in diverse countries of the region can be shared and applied from one country to another with some modifications considering their various socio-economic status, population density and developmental process.

We need to identify our needs and requirements at a national level. At the onset we urgently need to identify the extent of the problem and the impact of road traffic crashes and injuries in our individual countries of the region. We have to accept and appreciate the impact these crashes have on the victims of road traffic crashes and their families, especially the children. Injury prevention requires aggressive advocacy, adequate funding for education and research, and effective intervention programs. The criterion of this management is that a problem cannot be solved until it is defined in its magnitude and scope. We need to realize that one cannot change something until one can manage it. We need to define measurements to monitor the impact and effectiveness of intervention. This can occur through community-based preventive programs.

A registry should be established that would be comprehensive in the sense that it not only provides statistics of the numbers of crashes but also furnishes the end users with the individual details of each crash. It is important that the registry should highlight the economic damage of the crash after including all direct and indirect costs incurred, as this aspect of the crash attracts the decision-makers. This can then be used as an advocacy tool for the decision-makers and those responsible for developing and implementing policies related to road safety. Oman has initiated a trauma registry based on this concept. At present it is in its final stages of development. The concept of the trauma register is to combine a number of sectors on which the crash has an impact, including police reports, health services, social services for the disabled, orphans and widows, the courts, and insurance companies. Each section of the registry will enlighten us regarding the actual types of damage incurred. The final product will give us a holistic insight into the crash and allow us to extrapolate data to

enhance road safety in all aspects, providing tools for the policy makers to increase the political will and funding. This registry is electronic and the questionnaire can also be manual. The concept is that it is hospital- and community-based and it is multisectoral. Thus, it will identify the burden of disease and the socioeconomic, psychological, and medico-legal implications of the crashes and injuries and, most importantly, the final health status of the victim and his/her family. The registry will follow through the victim from the site of injury through prehospital care, complete trauma care, rehabilitation and social integration, police report, social services report and finally the courts and insurance report. We are recommending this registry be managed by the Physical Medicine Departments of different hospitals, which can accumulate data from the patients treated in their hospitals. The information can be transmitted to the Department of Statistics and Data Collection in the Ministry of Health as they have contact with the victims and their families long after their acute management ceases. Once this is in place, long-term planning can be easily achieved. Meanwhile we need to start implementing what is urgently required.

The region is very short of professional personnel in road safety, so capacity building is a priority. Furthermore, we need to have communication between the countries of the region and have knowledge sharing and transfer. We need to implement best practices by implementing and enforcing whatever legislation is endorsed by the country and ensuring consolidation of regional cooperation. This will improve the crash statistics. We need to not only decrease the number of crashes but also dramatically improve and limit the extent of the physical and psychological damage to the victims and their families. We must realize at the onset it will be difficult but not impossible to realize. Despite lack of funding and political involvement, by implementing the trauma registry we will raise awareness of the social and national burden incurred by road traffic crashes.

What we urgently need to address is the provision of the holistic approach to trauma care. This is another major problem in our region. Usually prehospital management is either lacking or rudimentary in most of these countries. At the same time, rehabilitation is also very limited and does not specialize in spinal and head injury patients as needed. Social reintegration for all does not exist in most of the countries of the region. The end result is that many disabled patients are unfortunately left in the care of relatives at home with little to no followup. As a result the victims never regain their independence and their self-respect as they cannot even care for themselves, let alone their families.

Education, training, capacity building and research are other concepts of road safety that are extremely lacking.

We need to identify potential skilled workers and provide proper training facilities, currently missing due to a lack of funding and proficiency. Population-based surveys or studies directed at decision-makers are not available. These types of surveys are crucial to get the policy and decision-maker to take action and to develop intervention and surveillance policies and funding for the intervention.

The region is facing a number of challenges. This is due to lack of diversity, funding, and ownership of the program; lack of specialized manpower; cultural and religious stigmata such as fatalism and rich boy syndrome; lack of community-based preventive programs; deficiency in education in road safety at all tiers including the undergraduate medical programs; absence of holistic approach to trauma care; and finally, we have brain drain of the few specialized personnel which directly affects the sustainability of the program. We also need to identify our limitations within the region, such as limited population-based data to develop preventive strategies and policies, and identification of the responsible sector to record injuries and their outcomes. Whatever few studies or peer-reviewed articles are available do not reach the circles of the decision-makers.

Funding is crucial but grossly lacking. Prioritization of the health issues in the region is one of the major drawbacks. Advocacy of road safety in most of the countries of the region is limited. The availability of practical, evidence-based information to trigger the flow of funds is practically nonexistent. Inclusion of private and cooperate sectors in the countries is not fully utilized. Absence of strong and active NGOs is a gross limitation.

We need to work very closely with the community. The ignorance and lack of awareness within the community with regard to the impact of road traffic crashes and injuries needs to be addressed through community programs, including using the media for education, in school curricula for the promotion of safety awareness in future generations, through religious outlets, and using every opportunity to introduce road safety in our community.

Individual countries need to find a way to force the issue of road safety. We must imprint and impress upon every member of the community that we are collectively responsible for each and every one of us, and especially for the safety of our children whom we not only love and cherish but who are the future of our societies. To achieve these goals, we need to have not only policies but a structured organization in each country that is chaired by a very high-ranking and respected individual with enough authority to gather each concerned sector in road safety, who commands attention, and who has the power to remove challenges and obstacles blocking road safety projects.

For this organization to be effective and to be able to manage road traffic crashes and injury prevention it needs to have: (1) a strategy with clear objectives and senior level commitment; (2) an organizational structure, operating plan and governance; (3) management leadership, focused staff, proper communication, and performance tracking; (4) auditing through monitoring, evaluation and, when necessary, restructuring of the program.

Finally, the region urgently needs to have an educational institution, preferably in the form of a university, specializing in road safety. All the countries of the region must support this institution. The different tracks in education, training and research in road safety management will be available for all. This is the only way we can build up our capacity. The future generations will take over road safety management and, with their different skills, our challenges and limitations will be effectively tackled and minimized. This loss of life and health, especially in young people from our region, is especially unacceptable since it is preventable. We must respond to this growing epidemic. The first response is the creation of a dedicated agency in the country—an institute for road and transportation safety.

**Acknowledgments** I thank all those who are involved in the management of road traffic crashes and injuries and those who are responsible in the politicization of road traffic accidents. I would like to thank the Bone and Joint Decade, especially the members of the International Steering committee. I would also like to thank Dr. Ayman AlSha'rawy, Aisha Al Kharusi, and Muthir Al Kharusi for supporting me in the preparation and editing of this document. And profound thanks to my wife, Yuthar, whose encouragement, support, and patience strengthen my resolve to work in the field of road traffic crashes and injuries management. And finally I would like to thank His Majesty Sultan Qaboos Bin Said, Sultan of Oman, for his personal interest and direction in the management of road traffic crashes and injuries.

## References

1. Browner B. *Lecture: Road Traffic Injury – the Neglected Global Epidemic*. BJD World Network Conference and Patient Advocacy Seminar. Durban, South Africa; 2006.
2. Commission for Global Road Safety Web site. *Make Roads Safe: A New Priority for Sustainable Development*. 2007. Available at: [http://www.makeroadssafe.org/documents/make\\_roads\\_safe\\_low\\_res.pdf](http://www.makeroadssafe.org/documents/make_roads_safe_low_res.pdf).
3. Global Road Safety Web site. Available at: [http://www.globalroadsafety.org/world\\_response/global\\_resolutions/index.shtml](http://www.globalroadsafety.org/world_response/global_resolutions/index.shtml).
4. Ministry of Health Web site. Available at: [www.moh.gov.om](http://www.moh.gov.om).
5. Murray CJ, Lopez AD. *The Global Burden of Disease: A Comprehensive Assessment of Mortality and Disability from Diseases, Injuries, and Risk Factors in 1990 and Projected to 2020*. Boston, MA: Harvard University, School of Public Health; 1996.
6. Royal Hospital Web site. Available at: [www.royalhospital.med.om](http://www.royalhospital.med.om).
7. The Task Force for Child Survival and Development Web site. Rosenberg M. *The Global Road Safety Crisis: We Should Do Much More*. Available at: <http://www.taskforce.org/index.asp>.

8. World Health Organization Web site. Penden M, Ed. *World Report on Road Traffic Injury Prevention*. Available at: [http://www.who.int/violence\\_injury\\_prevention/publications/road\\_traffic/world\\_report/en/](http://www.who.int/violence_injury_prevention/publications/road_traffic/world_report/en/).
9. World Health Organization/EMRO Web site. WHO/EMRO 2006: Commissioning an Expert Group for Documenting Injury Data in the Eastern Mediterranean Region. Available at: [www.emro.who.int/pressreleases/2006/no25.htm](http://www.emro.who.int/pressreleases/2006/no25.htm).
10. World Health Organization/EMRO Web site. WHO/EMRO 2006: WHO Regional Survey on National Situation and Response to Violence and Injury. Available at: [www.emro.who.int/pressreleases/2006/no25.htm](http://www.emro.who.int/pressreleases/2006/no25.htm). Accessed January 2008.