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Injury Prevention and Control in the South-East Asia Region

*Report of an Intercountry Consultation
Bangkok, Thailand, 23-26 January 2002*

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1. INTRODUCTION

Member Countries of South-East Asia Region (SEAR) are passing through a major epidemiological transition, socio-demographic change and technological revolution during the past two decades. Countries are also passing through significant urbanization, motorization, industrialization and changes in the sociocultural values of societies. Prevention and control of some communicable diseases and changing lifestyles of people has been a notable phenomena. These changes have resulted in a sudden and an unprecedented upsurge of noncommunicable diseases and injuries. Injuries on roads at home and in the workplace have increased due to lack of safety-related policies and programmes. A number of causes like road traffic injuries (RTIs), falls, fall of objects, burns, poisoning, drowning, occupational injuries (both in formal and informal sector), suicides, homicides, interpersonal violence, child and elderly abuse, violence against women, animal-related injuries and disasters are on the increase. The health sector in these countries bears the maximum brunt in terms of provision of acute care, short-term and long -term rehabilitation services.

Injuries are not on the public health agenda of Member Countries due to lack of reliable health information and are still considered as police, transport, legal, and individual problems. The number of injuries in terms of deaths, hospitalizations, disabilities and socioeconomic losses are increasing from year to year. The social, economic and psychological hardships are unmeasured in the Region and it is estimated that nearly 3% of GDP is lost due to road traffic injuries alone. Correspondingly, the health systems in these countries are not geared to handle this emerging problem in terms of prevention, especially due to lack of professional and technical expertise, alongwith absence of policies and programmes. This has resulted in a huge burden on health care systems, which are already overburdened due to various deficiencies. In view of this current scenario, the first intercountry consultation of experts in the Region has been a landmark meeting to recognize the public health burden and importance of injuries along with developing strategies for prevention and control. Twenty experts from 10 Member Countries and 5 staff members from the WHO Regional Office for South-East Asia and Headquarters participated in the meeting and interacted

intensely on various aspects (see annex 1 and 2). The consultation adopted several important recommendations highlighting priority areas for future activities at national and regional levels.

2. BACKGROUND

Dr Charal Trinvuthipong, Deputy Permanent Secretary, Ministry of Health, Royal Thai Government attended the meeting on behalf of the Permanent Secretary of Health. Welcoming the participants, Dr Charal highlighted that with globalization, industrialization and technology development, communicable diseases were on the decline and injury and violence were emerging as important causes of morbidity, mortality and disability in the Region. He emphasized the need to formulate a strategic response to the increasing threat of injuries and commended WHO for taking this initiative.

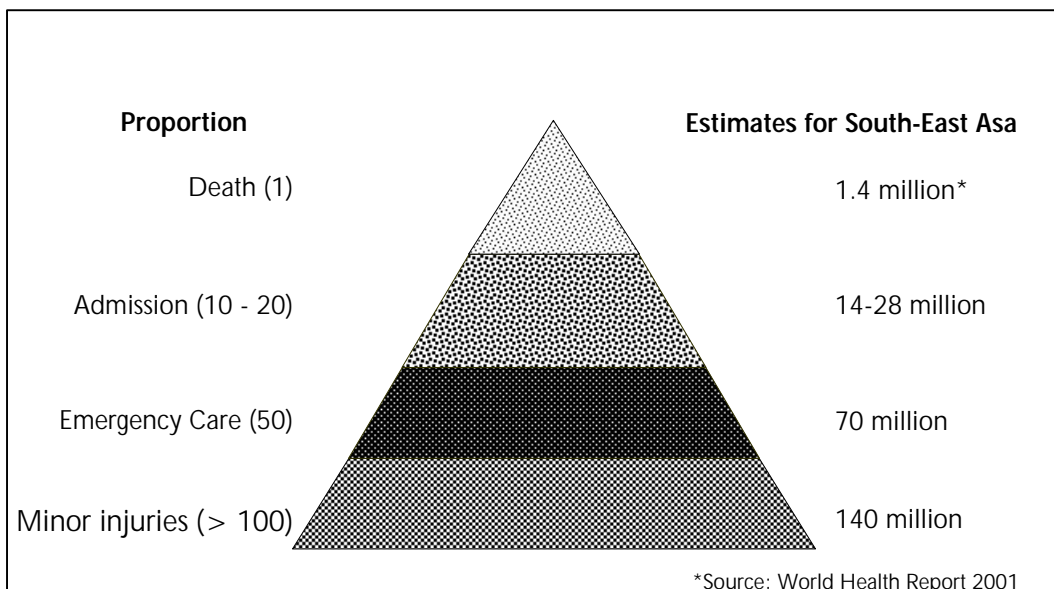
Dr Etienne Krug, Director, Violence and Injury Prevention, World Health Organization, Geneva in his address highlighted the phenomenal global burden of injuries resulting in more than 5 million deaths, twice the number of deaths caused by malaria and tuberculosis put together. Injuries affected tens of millions of people all over the world and more so in the South-East Asia Region. Injuries affected all classes of people, more so the poorer sections of the community, who when injured had worse outcomes. Lack of political commitment and awareness of the consequences of injuries were considered as key obstacles in programme development. He emphasized that injuries are preventable and there are well known proven and effective strategies, which if implemented could significantly reduce injury morbidity and mortality. He congratulated SEARO for being the first WHO Region to hold a consultation for development of regional strategies.

Dr Madan Upadhyay, Regional Adviser - Disability, Injury Prevention and Rehabilitation welcomed the participants and thanked the Royal Thai Government for hosting the consultation. It is estimated that nearly 1.5 million deaths, 15 million hospitalizations, 75 million emergency room consultations and 150,000,000 persons with (so-called) minor injuries were expected every year in the South-East Asia Region. These injuries placed a heavy burden on the resources of already overstretched health systems of the countries in the Region. He reiterated that the key objective of this consultation was to develop regional strategies for prevention and to accelerate the pace of development of national injury prevention programmes following the consultation.

It is estimated that nearly 5.8 million people died from injuries during 1998 in the world. With a male to female ratio of nearly 3:1, injuries are a leading cause of death and disability adjusted life years, especially among men in the age group of 5-44 years. Injuries take away the most vital and precious resources of every society in the world, more so in the developing countries of the South-East Asia Region. Road traffic injuries, work related injuries, burns, violence, suicides and drowning are the leading causes in the Region.

The South East Asia Region accounts for nearly 5.6 per cent of total land area and home for 25 per cent of global population. Three out of ten of the world's most populated countries and five out of the ten least developed countries are in this Region. Member Countries account for 20 per cent of injury mortality and 25 per cent of injury-related disabilities. The available information from the Region indicated that the ratio of injury deaths, hospital admissions, emergency room registrations and unaccounted minor injuries range from 1:10:50: >100, respectively (Figure 1). The economic impact is huge and phenomenal, though unmeasured.

Figure 1. Injury pyramid – South-East Asia



Dr Bjorn Melgaard, WHO Representative to Thailand read out the message of Dr Uton Muchtar Rafei, Regional Director of WHO, South-East Asia Region. In his message, the disproportionate burden of injuries on the health systems of the countries of the Region was highlighted. The seriousness of the problem of burns and fire-related injuries in the Region, contributing to nearly 54 per cent of the global burns mortality, apart from the importance of traffic-related injuries was mentioned. The significance of hitherto unrecognized burden of work-related injuries, particularly agricultural injuries in the Region, with 40-90 per cent of the population being dependent on agriculture was serious. He made a fervent appeal for making concerted efforts to develop national policies and programmes for injury prevention in all countries.

Dr Tairjing Siriphanich (Thailand) and Mr BP Sharma (India) were nominated Chairperson and Vice-chairperson, respectively. Dr Laxmi Somatunga (Srilanka) was nominated as the Rapporteur.

3. OBJECTIVES AND EXPECTED OUTCOMES

The major purpose of this consultation was:

- (1) To review the burden and impact of injuries and the response of the Member Countries;
- (2) To develop consensus on the priority injury causes and intervention, and
- (3) To formulate a regional strategy for injury prevention, paving the way for the formulation of national plan of action in Member Countries.

The expected outcomes of the consultation were focused on setting:

- (1) Priorities for injury prevention and identifying pilot areas for injury prevention;
- (2) Regional strategy for prioritized injury problems, and
- (3) Recommendations for Member Countries and WHO to accelerate injury prevention programmes.

4. INJURY PROFILE IN MEMBER COUNTRIES

4.1 Bangladesh

Bangladesh, with a population of 130 million, literacy rate of 55 per cent, and an urbanization of 25 per cent has been witnessing injuries on a very large scale in the last decade. Information on the problem of injuries is totally lacking. However, road traffic injuries are known to be increasing alarmingly with nearly 4 000 fatalities in the year 2000. The number of deaths per 10 000 vehicles is estimated to be 128/10 000 vehicles. The proportional mortality and morbidity from injuries were 8 per cent and 24 per cent respectively, with injuries being reported as the fourth leading cause of deaths. From a hospital-based study, it was shown that one-fifth all admissions were due to injuries. Isolated population-based studies indicate that the death rate from injuries was 40/100 000 population.

Among the various national priority problems, road traffic injuries, drowning, violence, burns, occupational injuries, poisoning, and animal-related injuries have been identified as priority injury problems. Bangladesh does not have any specific programmes for injury prevention, except a few isolated and individual efforts by police, transport and other sectors.

4.2 Bhutan

The health morbidity report for the year 2000 indicates that 3.5 per cent and 3.9 per cent of total health burden is due to injuries as per reports from basic health units. Mortality data for 2000 showed that injuries are the second leading cause of deaths, contributing to 23 per cent of total deaths. Unintentional and intentional injuries accounted for 89 per cent and 11 per cent of total deaths. Among all injury causes, RTIs, fall from height, drowning, landslides and hanging contributed for 42 per cent, 24 per cent, 8 per cent, and 7 per cent, respectively.

In recent years injuries have just been recognized as a public health problem and have been included under the Ninth Five-Year Plan. Action has been initiated on emergency medical services training for health workers, establishment of trauma care centres in three regions, traffic safety

regulations (vehicle fitness, traffic rules enforcement, license regulations etc.) and advocacy.

4.3 DPR Korea

The country has been facing a major problem of injuries due to natural disasters from year to year. During October, 2001 alone, nearly 1 000 houses were destroyed and thousands of people lost their earnings and livelihood. The economic loss was estimated to be US\$ 48 400 million during the year 2001. The country has been progressing at a rapid pace and injuries have been accorded national priority, as it is considered detrimental to the growth of individuals. Specific days and months have been allocated for injury prevention activities under the united system. First aid hospitals and 24 hours medical cares have taken deep root in management.

4.4 Indonesia

Road traffic injuries, work place injuries, natural disasters and increasing violence are found to be major injury problems. During 1999, among 40 862 deaths, nearly 30 464 died in road traffic injuries. Agricultural injuries (n=2175), burns (n=1187), falls (n=4400), violence (n=1918) and drowning (n=128) were the other major causes of injury.

The national policies and regulations have just begun to identify injuries as a public health problem. The disaster management plan has been fully put into practice to save lives. Several initiatives have been undertaken to reduce transport and workplace injuries. The integrated emergency management system along with training of clinic doctors and development of public centres with centralized ambulance services are some ongoing initiatives.

4.5 India

As per official reports, nearly 418 505 individuals died in India due to injuries in 1999, an increase of 5.2 per cent compared to the previous year. 62 per cent of these deaths were in the age group of 15–44 years and more

among men than women. Injury mortality rates for men and women were 28 and 16 per 100 000, respectively. Transport injuries (100 000), predominantly RTIs (81 036), burns (32 000), suicides (110 000) were the major causes, without inclusion of agricultural and occupational injuries. The injury problem is more acute in rural areas compared with urban areas with significant regional variations.

In recent years, the government is making some efforts to handle road and occupational injuries. Injury prevention efforts are made mainly by the police, transport and legal sectors with no involvement of health sector in primary prevention, as the country does not have an injury prevention policy.

4.6 Maldives

Major data sources in Maldives indicate that with a high motorcycle population nearly 430 accidents occurred in 1999. Drowning is a major problem in the country.

4.7 Myanmar

Information on injuries is not available for the whole country, except from the Yangon and Mandalay areas. The priority problem in Myanmar has been road traffic injuries and industrial injuries. Injuries contributed to nearly 4 per cent of total deaths and 10 per cent of hospital admissions as per hospital statistics. As per 1993 reports of Yangon General Hospital, among 6 824 injured persons, home injuries, road traffic injuries, violence, occupational injuries, train accidents and water-related injuries accounted for 41 per cent, 27 per cent, 21 per cent, 9 per cent, 2 per cent and 1 per cent respectively. Among the nearly 160 000 vehicles, 70 per cent of are cars with about 27 000 motor cycles. As per the available reports, nearly 1 400 injured persons were registered in Yangon City alone. On an average, factories report 400-500 industrial accidents, with the majority being minor injuries.

The health ministry has identified accident prevention as an important area since 1990, though no major developments have been made.

Collaborative efforts between the health and related ministries are yet to be identified. A number of legislative and regulatory efforts have been developed and implemented partially in the country.

4.8 Nepal

The injury problem has been very different in Nepal due to the mountainous and terai regions of the country. As per the annual report of the department of health services, falls, burns and scalds and dog bites were reported in large numbers. Injuries contributed for 2 per cent of the hospital admissions occupying the ninth leading position. Injuries also account for nearly 60-70 per cent emergency room registrations. At the Bir Hospital, road traffic injuries (80-90 per cent), violence and burns (10-20 per cent) were the principal causes of injury registrations in emergency services. The country has nearly 300 000 vehicles and reported 2 000 accidents with 125 deaths during 2000. With about 4 000-5 000 industries, nearly 2 000 occupational injuries were reported along with 200 fatal injuries. Among the various injuries, falls (1 per cent) and burns (1 per cent) were the major causes. At the same time, nearly 6 000 episodes of violence were also reported in the country with large number of deaths and injuries. Natural disasters are also a major problem in the country.

Several initiatives have been made by the country in terms of traffic safety, industrial safety, disaster preparedness and management and injury prevention has been included in the ninth plan.

4.9 Sri Lanka

As per hospital reports from government health institutions in the year 2 000, nearly 11 per cent of deaths and 16 per cent of admission were due to injuries. If poisoning is included, these figures increase to 17 per cent of deaths and admissions, respectively. Poisoning and burns alone account for 6 per cent and 1 per cent of total injury deaths, respectively. Land mine injuries killed a large number of people and injured more than 4 000 people. Burns contributed for nearly 1 per cent of total deaths. A hospital based study revealed that 30 per cent of injuries were due to road traffic injuries. Nearly, 2 150 deaths and 22 000 casualties were due to road traffic

injuries during the year 2 000. Among the various categories of people killed and injured in road accidents, pedestrians and two wheeler riders contributed to a major share. Poisoning has been a major problem increasing from year to year with nearly 5 200 completed suicides and 52 700 admissions during 2 000. The commonest cause of poisoning is due to organophosphorus and carbamate insecticides.

Sri Lanka has recently initiated multisectoral collaborative activities with the involvement of all partners in prevention. Noncommunicable disease prevention has been the focal point for prevention of accidents and violence in Sri Lanka, with the development of a national committee on prevention of accidents.

4.10 Thailand

Injuries are a major problem in the country with high death rates due to traffic, falls, occupational injuries, and drowning and intentional injuries. Among the hospital registrations, road traffic injuries contribute to a major share with nearly 13 000 deaths in the year 2 000. Among the various hospital registrations from traffic injuries, injuries to the head and face region are frequent as per trauma registry records. Several risk factors like non-wearing of helmets, drunken driving, risk taking behaviour on roads contribute to large number of road traffic injuries. A survey in the National Hospital of Thailand revealed that road traffic injuries (30 per cent), home accidents (24 per cent), occupational injuries (30 per cent), home accidents (24 per cent), occupational injuries (15 per cent), violence (13 per cent) and others (10 per cent) were the major causes.

The injury situation in Thailand has been analyzed recently with several strengths, weaknesses, opportunities and threats. The Ministry of Public Health has taken a lead role in recent years by strengthening its database, advocating for interventions, evaluating the impact and raising awareness in society. The country has initiated surveillance in selected provinces, developed collaborative programmes and implemented major interventions like introduction of laws to make compulsory wearing of helmet and using seat belt, reduction of drunken driving and others. A national focus has been developed under the Ministry of Health to develop programs.

Review of injury profiles from Member Countries revealed that:

Injury information is collected by different agencies, mainly by police, legal and labour departments from a legal and criminal point of view.

The available information is grossly under-reported, especially for occupational injuries, burns, drowning and suicides and violence. The reported deaths indicate only the tip of the iceberg with national or regional level data on health sector not being available for any country.

Data needs for prevention require specific focus to identify the epidemiological triad of agent, host and environment and this was not available from the ministry of public health for any type of injury. Country health information systems were not using ICD-10 or E Codes of injury classification, except under the surveillance systems of Thailand.

Several components of vital data like injury causes, hospital rates, rehabilitation needs, burden of injuries and economic impact was not available for Member Countries.

Injury prevention policies and programmes were conspicuously absent in every country and ongoing efforts were crisis-oriented – ad hoc and unscientific in nature.

5. INJURY PRIORITIES

The participants reviewed the injury problem and identified the priority areas (Table 1). Road traffic injuries were the most common injuries in all countries except DPR Korea and Maldives. DPR Korea faced natural disasters to a greater extent while drowning was the commonest injury in Maldives. The second and third leading causes were occupational injuries and burns-related injuries. Injuries in the organized sectors were receiving some attention due to labour-related issues, while injuries in the unorganized industrial and agricultural sectors remain largely unrecognized. All countries of the Region were facing a major problem of intentional injuries especially among youth, women and children. Since the present consultation was focused more towards unintentional injuries, the strategies and policies are set in this direction. A previous intercountry meeting on violence and health has already identified issues related to violence and health.

Table 1: Injury problem in the SEA Region

Area	Country									
	BAN	BHU	DPRK	IND	INO	MAV	MMR	NEP	SRL	THA
Road traffic injuries	1	1		1	1	3	1	1	1	1
Work-related	2	4	3	2		2	2	2		
Burns and fire-related				3		4	3	3	5	5
Suicides + violence	4	5	4	4	4	5	4	4	3	3
Poisoning				5	2		5	5	2	
Drowning	3	3	2	6	3	1	6	6		2
Disasters	5		1							
Falls		2						6		

5.1 Road Traffic Injuries

With the unprecedented increase in road traffic in South-East Asia, road traffic injuries have been a major public health problem resulting in deaths and injuries. The issues faced in the South-East Asia Region are very different from the scenario in developed countries on a number of issues like age-sex distribution of population, composition of traffic, greater involvement of heavy vehicles in deaths, high proportion of motorcycles and bicycles amidst complex road environments. A large number of those injured and killed are pedestrians, motorcycle riders and bicyclists. The absence of institutional mechanisms for research and policy is a major obstacle to the development of road safety. Epidemiological research, product - vehicle related research, establishment of road safety institutions and regional research centres would bridge this vacuum. Production of road safety experts in health, engineering and other sectors should be the

key focus of development. Some of the proven interventions like compulsory helmet and seat belt laws, increasing visibility of vehicles (use of daytime headlights for two wheelers, reflective material on vehicles, brighter helmets), low-cost engineering solutions, intercity highway mechanisms, traffic calming measures need to be implemented in all countries to reduce traffic injuries.

5.2 Agricultural Injuries

In the South-East Asia Region with an approximate work force of 580 million people, 60-80 per cent are employed in farms and fisheries, home industries and small-scale units. Injuries in the unorganized and agricultural sector are a major problem resulting in an estimated 120 million injuries and 200 000 deaths. Since complete information in this area is not available, few studies indicate that nearly 1 per cent of deaths and 10 per cent of permanent impairment are due to agricultural injuries. It is estimated that among the nearly 348 million agricultural work force of the Region, nearly 5-20 per cent sustain injuries as per hospital-based studies. The limitations of this sector include research methodological issues, reporting bias, sources of data and fear of reprisal. The suggested strategies for prevention should include strengthening infrastructure, risk management of occupational hazards and capacity-building strategies as key components.

The World Health Organization has recently promoted the global strategy for prevention of road traffic injuries, as more than a million people are killed every year, often occurring in situations with limited access to health care in poorer countries. The three strategic activities of epidemiology, prevention and advocacy are key steps in this process. The strategic objectives of capacity building, incorporating RTI prevention in public health agenda, promoting action-oriented strategies and advocacy for prevention are identified as the vital elements. Injury surveillance has been recognized as a vital step in epidemiological monitoring to identify determinants of RTIs, risk factor analysis and developing best practices on an inter-sectoral approach.

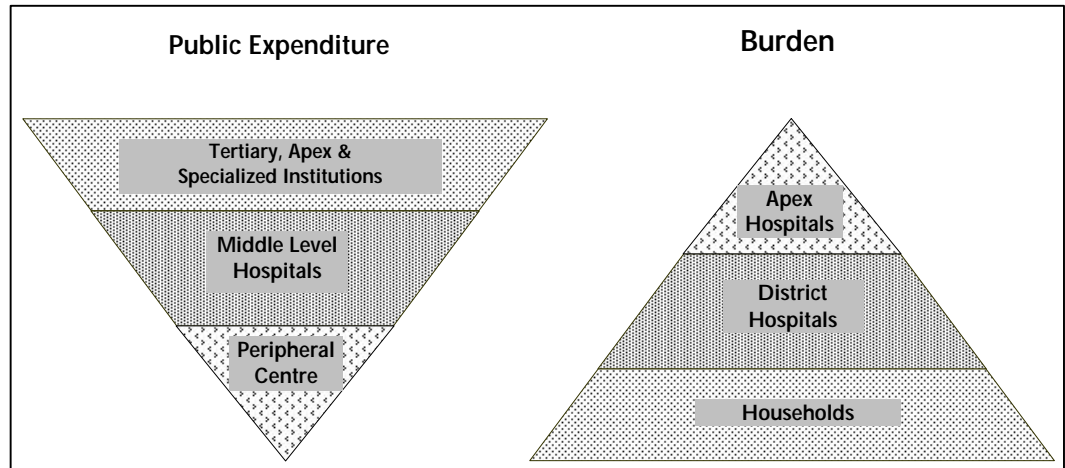
5.3 Burns-related Injuries

Occupying the third major position, burns related injuries are a major problem in South-East Asia. The South-East Asia Region contributes towards 10 per cent of the global burden, with India alone accounting for 35 000 burn-related deaths as per national reports. Several hospital-based studies indicate that burn-related injuries contributes to a high proportion of mortality among injuries (20-40 per cent) and increasing hospital admissions (10-30 per cent). Isolated population-based studies indicate that burn injuries are the third leading cause of morbidity across different places. The commonest objects causing burns are kerosene stoves, cooking objects, faulty electrical items and natural conditions like volcanoes and others. Specific peculiarities of burns like occupational burn injuries (India, Thailand and Sri Lanka), acid-throwing in Bangladesh, dowry deaths and fireworks-related injuries in India and natural fires in Indonesia, Thailand and Myanmar are regional peculiarities indicating the determinants of burn injuries to be at variance from the West. The poor availability of medical care is one of the major determinants for burn injuries. Some of the suggested strategies for burn prevention are improving housing safety, technology of stoves, banning dangerous fireworks, promoting safer first aid practices, trauma care improvement, training programmes for health personnel and research.

5.4 Pre-Hospital Care

The availability, accessibility, affordability and awareness of pre-hospital and emergency care after an injury are crucial determinants between life and death. Major problems in the Region include absence of efficient first aid networks, delays in hospitalization, and improper referrals (not based on triage), inefficient culture specific ambulance systems and medico-legal laws. Significant advances have been made in hospital care due to improved diagnostics and management resulting in decreased case fatality rates. However, the maximum burden of injuries is felt by families in rural and semi-urban areas, where facilities are totally lacking (Figure 2). Identifying locally effective strategies, human resources development and minimum – uniform guidelines are likely to yield desired benefits.

Figure 2. Health burden and expenditure due to injuries



6. BARRIERS AND STRATEGIES FOR INJURY PREVENTION AND CONTROL

Hitherto, injury prevention and control has not received a major thrust from national and international agencies. The health sector has primarily focussed its efforts on diagnosis and management and not on primary prevention. The participants discussed at length the existing barriers and identified the following key issues and strategies:

- Injuries are not considered a public health problem in all countries, but as individual, police, and transport problems. Large-scale awareness programmes towards policy makers, politicians, professionals, public and press are required urgently to communicate the burden, impact and losses due to injuries. Injury prevention and control has to be placed on the public health agenda of national, international and local communities.
- Data on the enormous burden on health sector resources is not available. Since the health sector is actively involved in the provision of acute and rehabilitative care, health professionals and systems are in a unique position to undertake this activity, injury surveillance with vital data (minimal data sets) placed in a sociocultural context should be developed across the Region.

Surveillance is a series of activities involving systematic data collection, analysis, interpretation, feedback and action to reduce the burden of injuries.

- A national injury prevention policy to give direction for injury prevention and control is nonexistent in all Member Countries. The response to injury prevention has been ad hoc, crisis-oriented and unscientific in approach. Countries must review the injury problem at national and provincial/state levels based on available data and formulate a national policy with short-term and long-term activities with the ultimate goal of reducing the burden of injuries.
- There is a severe paucity of institutions, professionals and resources within the health sector to initiate and implement injury prevention programmes. A critical mass of technical manpower in health, engineering (road, vehicle, products), law, social welfare needs to be developed in countries with sustainable short term and long term training programmes.
- There is a lack of safety awareness in societies. Along with technological changes with low-cost engineering solutions, increasing awareness about injuries and their impact on society should be undertaken, as governments and the people can prevent many injuries.
- Resources are used largely for acute care in large urban centres leaving very little for injury prevention and safety promotion activities. In pre-hospital care, developing first aid respondents, strengthening ambulance services, decreasing the interval between injury and hospital contact, promoting referral system based on triage, availability of facilities in hospitals and expanding communication networks are some of the key strategies.
- Legal and criminal implications of injuries are not understood. This has been a major obstacle for acceptance of injuries as a health problem and hence measures to de-link are needed. The existing laws with regard to road traffic injuries, occupational injuries and burns require re-examination in the present context, as some are outdated and non-specific in the changing circumstances.

- Present initiatives in injury prevention are not evidence-based and scientific in nature. Identifying the injury determinants in terms of the epidemiological triad of agent, host and environment needs health research across institutions by trained and qualified professionals, which should lead to scientific interventions.
- Injury prevention programmes face logistical and managerial problems for coordination, implementation and evaluation. Injury prevention is largely an intersectoral activity requiring inputs from a number of partners including health professionals, engineers, law officials, police personnel, educationists, social welfare agencies, media, excise, finance, transport and product manufacturers, apart from the local communities. Injury prevention and control needs to be coordinated in a scientific manner with the assignment of roles and responsibilities across partners on an integrated approach. Education, enforcement, engineering and emergency care are key principles and each approach is supplementary to the other (e.g. introduction of helmet laws and enforcement needs preparation of society by education for better acceptance).

Seeking the right solutions

There are several known and effective solutions for different types of injuries which can be implemented without additional costs by national governments (helmet laws, seat belt laws, reducing drunken driving, safer technology and products). Without reinventing the wheel, these solutions need to be translated into reality for immediate results. Since injury solutions vary across cultures, identifying what works and what does not work and with what level of resources, needs to be identified in the communities. Any solution requires political commitment, professional and public acceptance, availability of technology, cost effectiveness and long term sustainability. While the acceptance across sectors on each of these parameters varies, the overall benefits to society in terms of saving lives, reducing disabilities and preventing losses need to be taken into account in implementing best practices.

7. ROLE OF HEALTH SECTOR

The health sector has played an effective role in bringing epidemiological transition across countries and must also find ways of handling the emerging injury epidemic. While significant technological advances have been made in management and rehabilitation of injured persons, prevention has not received any focus from the health sector. The health sector can play an effective role in a number of ways like formulating injury prevention policies, developing injury surveillance, undertaking and collaborating for research, participation in wider advocacy issues, promoting intersectoral approach, evaluating the effectiveness of interventions and other issues.

8. RECOMMENDATIONS

Participants from Member Countries were of the unanimous opinion that there is an urgent need to develop and implement a national policy. The following recommendations are placed herewith for Member Countries of the Region and WHO - SEARO/HQs:

8.1 To National Governments

- (1) Member Countries should formulate, develop and implement a national injury prevention policy and programme, as scientifically developed programmes are virtually non-existent in the Region.
- (2) Within health ministries, a nodal coordinating division headed by a senior officer with appropriate powers, budget and support should be established for initiating activities and liaising with related partners.
- (3) Every country should bring out an "Injury Fact Book" on deaths, hospitalizations, and disabilities (including road traffic injuries, falls, burns, occupational injuries, suicides and violence).
- (4) A national task force on prevention of (i) road traffic injuries, (ii) agricultural injuries, (iii) burn injuries and (iv) suicides and violence should be formulated to examine and recommend cost-effective, culture-specific and sustainable interventions.

- (5) Advocacy materials based on evidence-based approach should be developed in all Member Countries in the areas of road safety, work safety, prevention of burn injuries and suicides - violence prevention.
- (6) National health information systems should be strengthened to collect simple - minimal - relevant information on priority injury problems.
- (7) Injury surveillance should be established in at least one or two centres in the country with the use of ICD-10, E Codes and ICECI Classification to develop the required scientific data.
- (8) Existing laws should be reviewed, modified and updated by partners including health sector to de-link injuries from a legal and criminal perspective.
- (9) Resource centres in the country should be developed through institutional strengthening mechanisms.
- (10) Known, proven and effective solutions (e.g. helmet laws, seat belt laws, enforcement against drinking and driving, traffic calming, banning hazardous equipments and fireworks, promoting safer first aid practices) should be implemented within the next one year in all countries for immediate results. Necessary education, enforcement and engineering methods should be adopted for these strategies.

8.2 To WHO-SEA Regional office

- (1) The WHO Regional Office should develop a consolidated regional profile on burden and impact of injuries in the South-East Asia Region, strategy document to influence governments to place injury prevention and advocacy kits on road traffic injuries, agricultural injuries and burns.
- (2) WHO should provide increasing visibility to injury prevention programmes on the national agenda at various levels and also facilitate countries to formulate nodal divisions – national focal agencies –institutions - professionals with an emphasis on injury prevention.
- (3) WHO should provide financial and technical support, and improve country capabilities in strengthening injury information systems and establishing injury surveillance in selected centres across the Region.

- (4) In coordination with national governments, human resource development programmes for health professionals in injury epidemiology along with prevention and control should be set up in every country to build the critical mass of manpower.
- (5) The Regional Office should also expand collaborating centres in the Region based on population size and the gravity of the problem. These collaborating centres should undertake research – manpower development – pilot demonstration projects and act as agents of change within the Region.
- (6) Networking between WHO and other UN agencies, other international agencies involved in this area should be strengthened to obtain maximum benefit from invested resources.

Annex - 1

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Dr Ram Prasad Shrestha
Surgeon
Ministry of Health
Ramshahpath
Kathmandu

Dr Mahendra Keshary Chhetri
Director
Central Regional Health Directorate
Kathmandu

Sri Lanka

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Dr Tairjing Siriphanich
Director
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Dr Paibul Suriyawongpaisal
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WHO Secretariat

Dr Madan P Upadhyay
RA-DPR
WHO SEARO
New Delhi.

Dr Deoraj H Caussy
RA-OEH
WHO SEARO
New Delhi.

Dr G Gururaj
Consultant, Injury Prevention
WHO, SEARO
New Delhi

Dr Etienne Krug
Director, Injuries and Violence Prevention
WHO/HQ, Geneva.

Dr Margie Peden
Unintentional Injuries Prevention
WHO/HQ, Geneva

Annex - 2

PROGRAMME

Wednesday, 23 January 2002

- | | |
|-----------------|--|
| 0830 – 0900 hrs | Registration |
| 0900 – 1025 hrs | Inaugural Session Address by Chief Guest and inauguration of the Consultation. Introduction of participants. Welcome address and purpose of Consultation. Dr. Madan P Upadhyay, Regional Adviser, Disability Injury Prevention and Rehabilitation, WHO, SEARO, New Delhi. Message from Dr. Uton Muchtar Rafei, Regional Director, World Health Organization, South-East Asia Region. Remarks by Dr Etienne Kruge, Director, Injuries Violence Prevention, WHO/HQ, Geneva. Nomination of Chair, Co-chair and Rapporteur |
| 1045 – 1110 hrs | Global Injury Estimates, WHO policies and prevention programmes – Dr E. Krug, Director, Injuries and Violence Prevention, WHO headquarters, Geneva. |
| 1110 – 1130 hrs | Regional Profile of Injuries and Violence – Dr Madan P. Upadhyay |
| 1130 – 1300 hrs | Presentation of Country Profile on Injuries (15 minutes for each country) Bangladesh, Bhutan, DPR Korea, Maldives, India, Indonesia, Nepal, Myanmar, Thailand, Sri Lanka |
| 1400 – 1500 hrs | Presentation of Country Profile on Injuries (continued). |
| 1500 – 1530 hrs | Discussions on reports of the presentation. Planning Group work activities |
| 1600 – 1700 hrs | Group interactions on critical issues and setting priorities GP I – Thailand, Indonesia, Sri Lanka GP II – India, Myanmar, Nepal GP III- Bangladesh, DPR Korea, Maldives and Bhutan |
| 1700 – 1730 hrs | Plenary presentation of the group work. |

Thursday, 24 January 2002

- | | |
|-----------------|--|
| 0900 – 0915 hrs | Summary of day 1. |
| 0915 – 0930 hrs | Road Traffic Injuries in South-East Asia - Prof. Dinesh Mohan, Coordinator, Transportation Research and Injury Prevention Programme Centre of Biomedical Engineering (TRIPP), NEW Delhi. |

0930 – 0945 hrs	Road Traffic Injury Prevention Strategy – an example of a global strategy on injury prevention – Dr Margie Peden, Unintentional Injuries Prevention, WHO/HQ, Geneva.
0945 – 1015 hrs	Discussion on both presentation.
1045 – 1100 hrs	Burden of work-related/Agricultural Injuries in South-East Asia – Dr Harry Caussy, WHO, SEARO, New Delhi
1100 – 1115 hrs	Burns-related injuries – global versus regional perspective – Dr G Gururaj , NIMHANS, Bangalore
1115 –1145 hrs	Discussions
1145 – 1300 hrs	Discussion on development of regional strategies in priority areas(group work)
1400 – 1445 hrs	Presentation of group reports for Regional Strategy.
1445 – 1515 hrs	A template for development of national programme on injury prevention in South-East Asia – Dr Withaya, Thailand.
15:45 – 16:30 hrs	Group Discussion on developing template for National Plan of Action – three groups.
1630 - 1700 hrs	Discussion and Summary of Day – 2 discussion.

Friday, 25 January 2002

DAY 3 Visit to Khon Khen province to understand issues in organization and delivery of trauma care services

Saturday 26 January 2002

0900 – 0945 hrs	Presentation of draft Regional Strategy – Dr Madan P Upadhyay/Dr Gururaj
0945 - 1000 hrs	Discussion on Regional Strategy.
1000 – 1200 hrs	Conclusion and Recommendations.
1200 – 1215 hrs	Closing of the Consultation.