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Guidelines for Prevention of Spinal Cord Injuries

Asian Spinal Cord Network
(ASCoN)

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Guidelines for Prevention of Spinal Cord Injuries
for the Asian Spinal Cord Network (ASCoN) Region

Preface*:*
The dictum "Prevention is better than Cure" is especially relevant for spinal injuries. The chances of neurological recovery in complete spinal cord injuries are generally slim due to the lack of the inherent capacity of the spinal cord to undergo neuronal regeneration. The goals of management of such injuries are thus to rehabilitate the individual so as to be able to lead a normal lifestyle despite the disability. Hence prevention of such injuries assumes special significance.

The fact that prevention strategies can be practically and successfully implemented has been amply demonstrated in many countries. However in many developing countries (and some developed ones as well) prevention strategies have not been given due emphasis. This is despite the fact that success in prevention of disability, morbidity and mortality, and the cost effectiveness of prevention programmes, has been proven beyond doubt.

Realizing the potential of implementation of such programmes and the fact that strategies of prevention would differ due to epidemiological differences, differences in population distribution (urban versus rural), differences in available resources and differences in mind set of the population, the Asian Spinal Cord Network (ASCoN) decided to draft "Guidelines on Prevention" which could be broadly applicable to the countries of the region and could be modified according to local prevailing conditions. Livability Ireland, formerly John Grooms, the organisation which has been actively involved in ASCoN's development since its establisment, supported the idea through coordination and funding.

The General Body and the Executive Committee of the Asian Spinal Cord Network (ASCoN), in their meeting held in Dhaka (Bangladesh) on 25th March 2007, decided to entrust the responsibility of developing draft guidelines to Dr. H.S. Chhabra and Mr. Eric Weerts. The initial draft was circulated amongst the various experts of the Asian Spinal Cord Network (ASCoN) and the inputs from these experts were incorporated. The second draft was then presented during a special Workshop of the International Spine and Spinal Injuries Conference (ISSICON-2008), held at New Delhi, India from 22nd to 24th February 2008. This Workshop was chaired by Dr. Douglas Brown, Chairperson – Prevention Committee, International Spinal Cord Society (ISCoS) and was sponsored by Livability Ireland. The presentation of the "Guidelines for Prevention" was followed by a panel discussion involving various experts of ASCoN and other delegates. Based on these deliberations, the final draft of the ASCoN "Guidelines on Prevention" was completed and circulated amongst the general members of ASCoN and appropriate feedback was incorporated.

The Guidelines were formulated taking measures to ensure that they were comprehensive, simple, based on evidence-based medicine (experiences of implementation in various countries), implementable within the resources available, and taking into consideration locally prevailing conditions as well as differences in epidemiology, population distribution and mindset of population.

The guidelines summarize all aspects of prevention including data collection, prevention of injury due to various causes (such as fall from height, road traffic accident, occupational injury, agricultural injury, fall of load from height, fall while carrying load on head, diving accident), primary care, secondary prevention, community awareness programmes, legislation along with its enforcement and assignment of responsibilities for implementation.

The guidelines would be particularly useful for policy makers, non government organisations (NGO's) and other organisations working in or aspiring to work in the field of spinal injuries. They would be especially useful to sensitize the policy makers regarding the importance of implementation of prevention programmes. They would also be useful for all professionals involved in spinal injury management including doctors, physiotherapists, occupational therapists, psychologists, orthotists, social workers, peer counselors, vocational counselors etc., since all of them need to have an understanding into all aspects of prevention of spinal injuries especially primary and secondary prevention.

It is important to understand that these guidelines just provide an insight into the principles of prevention. They may need to be adapted according to locally prevailing conditions.

Queries, suggestions and constructive criticism of the information provided would be welcome and relevant information would be used for the further refinement and improvement of these guidelines.

Dr H S Chhabra
On behalf of ASCoN Executive Committee

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Guidelines for Prevention of Spinal Cord Injuries
for the Asian Spinal Cord Network (ASCoN) Region

Principles of Prevention

It is well established that the broad principles of prevention and control of any type of injury are as follows:

- they should be implemented according to a public health approach,
  - identifying the problem,
  - delineating risk factors and mechanisms,
  - developing, prioritizing and implementing interventions,
  - evaluating them for cost-effectiveness, sustainability and culture specificity,
  - Reproducing and adjusting them in other settings.

- they can be translated into action through the 4 E's of injury prevention and control,
  - Education,
  - Engineering,
  - Enforcement
  - Emergency care

- they require inter sectoral activity with inputs from different sectors such as:
  - Traffic Police departments, Labour departments, consumer organisations,
  - Road engineering, infrastructure development and maintenance,
  - Health systems that teach safe victim assistance and provide feedback on causes to be used for prevention programmes,
  - Education systems that focus on prevention of injury in daily life,
  - the media and its role in promoting safe behaviour in public or at home,
  - Legislation that focuses on injury prevention and provides a basic framework for safe working environments.

- they require integrated activity as multiple interventions need to be combined to obtain the best results and greater success, for example, a multi-disciplinary approach with regard to enforcement of legislation and data collection on victims.

- they are best developed by a systems approach by integrating several components for each intervention.

- they require a partnership approach and active inputs in terms of resources, support and cooperation of policy-makers, professionals, the public and the press (media); and political commitment is crucial in this process. Equally crucial is the engagement of local community at every level (including community leaders and legislators).

Strategies for Prevention
ASCoN recognizes that the strategies for prevention may be different in its region due to various reasons including:

Epidemiological differences
Three years ago an analysis of international data reports on causes of injury was undertaken. One of the findings was that developing countries do not follow the pattern of most commonly accepted causes of injury.

There are epidemiological differences when ASCoN member countries are compared with developed countries. Fall from height was found to be the most common mode of injury in most of the pilot studies in India, Bangladesh, Vietnam, Lao PDR, Cambodia and Nepal. Road traffic accidents are the second most common cause in these countries, including Thailand. Most falls from heights take place at home and in a rural/semi-urban set up. The causes of fall from height may be different, for example, from un-protected terrace, tree, electricity pole, overloaded bullock carts, tractors, buses, trucks, trains and other vehicles, fall within construction site, fall from a wall or fall into a well (mainly unprotected wells).

Similarly when it comes to Road Traffic Accidents (RTA), factors predisposing to RTA are different - more accidents take place with pedestrians and with two-wheelers, there is more low velocity trauma than in the West and the proportion of four-wheel drive passenger vehicle accidents (sports utility vehicle – SUV) is not as high as in the West.

Most of the falls from height accidents take place at home or in the unorganised sector.

Differences in population distribution
74% of the population lives in rural areas. A discrepancy between the living area of SCI victims and the place of accident exists mostly due to migration patterns and is linked with rapid economic development.

Differences in available resources
Developing countries lack behind developed countries in the availability of resources to organise prevention campaigns and to implement them.

Differences in mindset of the population
Attitudes of population towards safe driving, safety measures while working at a height and other prevention measures are different. Among the policy makers this mindset extends to not paying enough attention to the real cost benefit that prevention programmes produce in the long term.

The ASCoN Guidelines for Prevention should thus be based on implementation according to a public health approach, translated into action through the 4 E's of injury prevention and control, emphasize intersectoral and integrated activity, developed by a systems approach by integrating several components for each intervention and active

inputs in terms of resources, support and cooperation of policy-makers, professionals, the public and the press (media).

However the strategies for prevention should:

- adapt the successful strategies implemented in developed countries according to local conditions, with emphasis on prevention of the commoner modes of injury,
- give equal emphasis on rural and urban as well as unorganised and organised sectors,
- devise strategies according to available resources with basic methodologies,
- emphasize on community awareness and especially on changing the mind set of the population. It is important to commence changing of attitudes by starting with school children and designing programmes that leave long lasting prevention messages with the children.

It is not easy to change the mindset of the population and there will be reluctance. Courage is needed to come out with new ideas and to spread prevention messages. Collaboration and coordination is essential.

Vietnam provides a positive case study where various Ministries and Departments of Health, Transport and Education in partnership with Handicap International (Vietnam) successfully carried out a community awareness programme on accident prevention on TV and in Universities and Schools. This awareness programme was based on a national strategy for injury prevention and applied to a target zone with high levels of accident rates.

The following would thus be the various strategies for spinal injury prevention:

1. Data collection

Without data collection, analysis and interpretation, there can be no counter measures and strategies for prevention. Hence data on injuries, circumstances and the chain of events leading to accidents is thus a key component in the implementation of a prevention policy. Data collection tools are not sufficiently focused on SCI accidents. It is also difficult to make an in-depth analysis of causes due to specific rather than broad classifications of cause of injury. In existing tools, for example, a 'vehicle' accident does not tell you if the vehicle in question is a car, bus, truck, rickshaw, three-wheeler etc. Therefore it will be difficult to target and prioritise a specific vehicle and driver group in prevention programmes. Likewise the definition of injury by "fall" can be confusing; for example, an injury sustained in a road traffic accident could be the result of a fall from a motor-bike or from the top of a bus. Similarly, a fall in the construction industry may have different factors.

Direct data collection on SCI persons during rehabilitation admission is the most direct and effective means of gaining information in this case. A data collection tool on these

lines has been developed in Vietnam. ASCoN believes that this tool is appropriate for other countries in the Asia region and as such it is included as an appendix in these Guidelines. Data acquired using this format can help to inform the collecting of information which would be useful for designing future SCI prevention campaigns in the member countries and across the Region. Agreement by ASCoN members to use a similar format can also provide original data for future cross regional epidemiological studies. It would allow for continuous data collection that can be compiled over time and as such there will be scope to identify epidemiological changes and to adopt prevention programmes accordingly.

Confusion between different stakeholders (for example, Health departments, Traffic police, the Red Cross) collecting information on accidents exists frequently. This results in conflicting accounts on the number of real victims and prevalence on the circumstances of the accidents.

2. Preventing injury

Emphasis should be given on prevention of the commoner modes of injury through:

a. Fall from height (especially in the domestic and rural / semi urban setting)

- community awareness and legislation about safety measures while on terrace, height, tree, electricity poles etc. and while drawing water from a well;
- improved domestic infrastructure like protected terraces and roofs**;**

b. Road traffic accidents

- optimising the number of vehicles;
- reducing individual exposure by investing in and improving public transportation in all places;
- ensuring proper infrastructure such as roads, lighting, pedestrian pathways etc;
- ensuring proper traffic management, for example separation of slow- and fast-moving traffic on all possible roads, promoting traffic-calming measures by scientific methods (backed up with evidence that accidents have been reduced), reducing speeds on roads, especially on highways and in all residential areas (camera speed traps);
- giving adequate importance to the issues concerning safety of non-motorised transport and the group to be included as an integral part of traffic in the planning of new highways and area planning schemes. This is of particular importance considering 80% injuries take place in non-motorised vehicles. Safe segregated facilities for non-motorised road users (pedestrians, cyclists and rickshaws) on all major urban corridors where vehicle speeds are likely to be greater than 30 km/h;
- educating society of the importance of respecting others;
- As rural accidents are more common per head of population than urban accidents, placing greater emphasis on rural accidents is crucial;
- improving the visibility of vehicles (brighter, reflective colours) and roads in all places (at vehicle design and road formation levels and thereafter);
- applying international safety standards for all vehicles and roads (including mandatory driving tests);

- improving safety on existing roads, and incorporating road safety audits;
- Legislation
    - on safe driving like imposition of speed limits, wearing seat belts, helmets, child restraints, random breath testing, graduated licensing;
    - to remove old poorly maintained vehicles;
    - to prevent over loading of vehicles;
    - for requirement of tests for rollover resistance as a component of new care assessment programmes;
    - against the use of Mobile phones while driving;
- Community awareness to change mindset / improve driving standards
- Proper driving conditions
- Marking of danger points

c. Occupational Injuries

- Proper documentation of occupational injuries;
- Proper training for workers handling heavy equipment and/or exposed to dangerous situations;
- Appointing a centralized agency to examine occupational injuries;
- Introducing alternative methods or devices to enhance safety measures for high risk occupations such as carrying of heavy loads or fruit picking from trees.
- Legislation for occupational safety and prevention of workplace accidents like Factories, Mines, Industries, Plantations;
- Necessary enforcement of safety laws to which the countries have adhered to internationally;
- Establishing national safety standards for all machines and tools in the manufacturing sector;
- Ensuring a safe work environment;
- Implementation of safety systems (inspection, safety audits);
- Eliminating child labour and extending protection systems by all methods;
- Refer to international agreements on injury prevention signed between ILO, WHO and respective governments for guidance.

d. Agricultural injuries

- Making all agricultural equipment especially fodder cutters and threshers safer;
- Orientation of semi-skilled and unskilled workers to correct use of equipment;
- Awareness programmes especially amongst unskilled and semi-skilled workers;
- Recognising that Law enforcement and implementation is problematic in this area.

e. Fall of load from height

- Community awareness and legislation about safety measures while unloading / loading vehicles.

f. Fall while carrying load on head

- Community awareness and legislation about safety measures while carrying a load on head.

g. Diving Accidents

- Marking of danger points with explicit panels;
- Community awareness programmes;
- Learning from the Australian experience where education and awareness were found to be the key in prevention.

h. Bull attack

- Community awareness programmes;

3. Primary Care

There should be trained staff for primary care at accident site, transportation and dedicated spinal trauma treating units. Training community volunteers in safe handling techniques through national Red Cross channels can be effective.

4. Secondary Prevention

This could be done through creating trauma care and rehabilitation facilities in cities/towns and in rural areas.

It is important to educate others on correct Transportation methods.

5. Community Awareness programs and campaigns

It is important to gather data before and after campaigns in order to demonstrate impact to society, the government and to the agencies funding such campaigns.

a. **Group approach** – lectures, workshops, demonstration;
b. **Mass approach** – TV, Radio, Newspaper, Poster, Health museums and exhibitions, internet, Movie halls, concerts;
c. **Safety education** – This could begin with school children – " *Catch them young!*"

6. Legislation

Strict driving test, medical fitness to drive, enforcement of speed limit, compulsory wearing of seat belt and crash helmets, road side breath testing for alcohol, regular inspection of vehicles, periodic re-examination of drivers over 55 years of age, and implementation of factory and industrial laws of safety.

7. Enforcement of legislation

This is generally a weak area in the prevention programmes and hence efforts in this field would give good results. A lot of people are not aware of legislation simply because they don't understand it so effort is required to provide information that is accessible to all levels of education.

8. Assigning responsibilities for prevention programmes for spinal injuries

a. Role of government

- Legislation and adherence to international agreements on injury prevention;
- Enforcing legislation;
- Creating necessary infrastructure e.g. footpaths/walkways;
- Including spinal cord injury management and prevention in the curriculum of medical and paramedical professions;
- Community awareness programmes;
- Launching specific programmes for SCI prevention;
- Education needs to be skills based and interactive.

b. Role of NGO's / Organisations and Professional bodies (such as ISCoS, ASCoN) involved in spinal injury management

- Send a representative to all major related conferences; liaise with organizers of these conferences and with various other related Societies to have a session on spinal injury prevention and management.
- Promote Regional Spinal Cord Societies to come out with their journals / newsletters / bulletins, organise conferences / symposiums and to be proactive for other educational and training activities pertaining to SCI.
- Use the documentation set available at the International Labor Organisation and World Health Organisation on injury prevention to enhance the prevention message among professionals working with SCI.
- Popularize Fellowships in various aspects of SCI Management.
- Liaise with concerned authorities for inclusion of SCI Management within the curriculum of MBBS degree and that of other concerned para medical professions
- Community awareness about SCI, its prevention and management. The help of national and international Media could be taken in this regard.
- Sensitize government officials and medical / paramedical professionals about the impact of SCI Management and prevention on the quality of lives of the spinal injured and the economy of the Nation.
- The policy makers in Central and Regional Governments could be sensitized to have a National Spinal Cord Injuries Programme.
- Demonstrate with simple methodology how prevention messages can be formulated locally and at grass roots level. This should be based on the local situation.

c. Role of professionals

- Sensitizing patients and attendants regarding the importance of prevention programmes.
- Facilitate data collection by using SCI Data core set and the data collection tool developed in Vietnam.
- Contributing towards community awareness.

- Sensitizing policy makers / NGO's / organisations involved in spinal injury management.
- Designing alternative safety devices to be used for high risk occupations such as carrying heavy loads or fruit picking from trees.

d. Role of media

- Role of media can't be emphasized enough – it has a very big and important role
- Media can be used to influence the masses. Media campaigns are useful for raising disability awareness but don't necessarily impact on attitudes in behaviour. However, Canada cites a successful media campaign focusing on safe driving which was developed and co-sponsored by radio and TV as part of their public service obligations.
- Sensitize policy makers, opinion leaders, NGO's, organisations and professionals involved in spinal injury management.

e. Role of population

- Being amenable to change in attitudes and mind sets.
- Life skills development challenging peer pressure.

Recommended references:
For further reading and information please note the following references:

1. Recommendation concerning safety and health in construction. International Labour Organisation (ILO). Email: webinfo@ilo.org

2. International Hazard Datasheets on Occupation (ILO). Website: www.ilo.org

3. In-Focus Programme on Safe Work, International Labour Office, Geneva. Email: safework@ilo.org

4. The International Collaborative Effort (ICE) on Injury Statistics. http://www.cdc.gov/nchs/injury.htm

5. Wyndaele, M; Wyndaele, JJ: Incidence, prevalence and epidemiology of spinal cord injury: what learns a worldwide literature survey. Spinal Cord (2006) 44, 523-529 .

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7. Hang, H.M.; Bach, T.T.; Byass, P. Unintentional injuries over a 1-year period in a rural Vietnamese community: describing an iceberg. Public Health(2005) 119, 466-473

8. European Agency for safety and health at work. Facts. http://osha.europa.eu/en/campaigns/ew2006/

9. International Hazard Datasheets on Occupation. International Labor Organization , 2005

10. Data collection on circumstances of SCI accidents at HRPD – SCU, Handicap International, 2007. Email: sitecoordinator@hcm.vnn.vn

11. Schopper, D.; Lormand, J.D.; Waxweiler, R. Developing policies to prevent injuries and violence : guidelines for policy-makers and planners . World Health Organization, Geneva 2006

12. Global Road Safety Partnership and Asian Development Bank manual on Building safe roads and implementing road safety programmes.

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ASCoN – Asian Spinal Cord Network

ASCoN

ASCoN consists of a group of organisations in the Asia region that have come together to share and learn from each other in all aspects of spinal cord injury management, from initial treatment of the patient to re-integration of the person.

Background

ASCoN was initiated in 2001 following a meeting of regional experts during the International Conference on Spinal Cord Lesion Management hosted by the Centre for the Rehabilitation of the Paralysed (CRP), Bangladesh. Through the Network it was hoped that

- organisations working in the field of spinal cord injury management could address similar problems experienced;
- there would be increased opportunities to learn from each other;
- good examples of spinal cord injury management could be replicated across the region.

ASCoN become an affiliated society of the International Spinal Cord Society (ISCoS) in 2004.

Objectives

To strengthen spinal injury services and human resource development for organisations and people working in spinal injury management in the Asia region.

To share information, ideas and knowledge of best practices in spinal cord injury management among members.

Activities

Co-ordination and Networking

Members represent 74 organisations throughout 18 countries in the Asia region including:

Afghanistan, Bangladesh, Bhutan, Cambodia, China, East Timor, India, Indonesia, Japan, Korea, Laos, Myanmar, Malaysia, Nepal, Pakistan, Sri Lanka, Thailand and Vietnam.

An Executive Committee acts as the decision making body of ASCoN. An annual general meeting takes place during the ASCoN Conference and provides the opportunity

for members to plan activities and to meet at least once a year on a face to face basis. The Executive Committee is represented by:

Mr Eric Weerts, (ASCoN Chairperson 2007) Handicap International Vietnam
Dr Fazlul Hoque, Square Hospital, Dhaka, Bangladesh
Dr Apichana Kovindha, Chiang Mai University, Thailand
Dr Capt Dilip Sinha, Hope Hospital,
Dr H S Chhabra, Indian Spinal Injuries Centre, India
Prof Than Toe, Society for Rehabilitation Medicine, Myanmar
Ms Esha Thapa, Spinal Injury Rehabilitation Centre, Nepal
Mr Cyril Siriwardane, Spinal Injuries Association, Sri Lanka
Dr Nazirah Hasnan, University Malaya Medical Centre, Malaysia
Mrs Maggie Muldoon (ASCoN Secretary), Livability Ireland

Livability Ireland supports the Executive Committee in the overall co-ordination of ASCoN and is committed to its ongoing capacity development.

Newsletter

A newsletter is produced and distributed to members on a regular basis. Members contribute articles which are edited and included in the Newsletter. The Newsletter is a useful means of sharing information on developments in spinal injury management and innovative approaches adopted by various member organisations.

Exchange Visits

Exchange visits among member organisations are used to provide exposure to different models of spinal injury service delivery for staff and students from spinal injury centres across Asia. This activity is proving to be an effective, practical and efficient way of supporting the development of services and the human resources involved in this area of work, where cultures are similar and resources limited.

Short Training Courses

In-country and regional training opportunities are available for staff from ASCoN member organisations through short training courses which are organised and conducted by ASCoN members. The short training courses relate to specific elements of comprehensive spinal cord injury management. Examples of current training courses include training of trainers in spinal injury management, active rehabilitation, surgical management and nursing management.

Annual Conference

Each year the annual ASCoN regional conference is hosted by an ASCoN member organisation. The conference covers all aspects of spinal cord injury management, treatment, rehabilitation and community integration. It also provides and opportunity for people in the Asia region to come together and network with others regionally and

internationally, to share ideas and discuss or debate dilemmas and the latest developments and innovations in spinal injury management. The conferences hosted to date include:

2001 at the Centre for the Rehabilitation of the Paralysed (CRP), Bangladesh;
2002 at the Indian Spinal Injuries Centre (ISIC), India;
2003 at the Dept. of Rehabilitation Medicine, Chiang Mai University, Thailand;
2004 at the Spinal Injury Rehabilitation Centre (SIRC), Nepal
2005 at the Hospital for Rehabilitation of Professional Diseases (HRPD), Spinal Unit, Ho Chi Minh city, Vietnam
2007 at the Centre for the Rehabilitation of the Paralysed (CRP), Bangladesh.
2008 at the Bach Mai Hospital and National Rehabilitation Centre, Hanoi, Vietnam

Future conferences are planned for Nepal (2009) and the 49th Annual Scientific Meeting of ISCoS will be held in India (2010) in collaboration with ASCoN

ASCoN Guiding Principles for Management of Spinal Cord Injuries

The ASCoN Guiding Principles for Management of Spinal Cord Injuries were first published in 2006. These guiding principles summarise all aspects of spinal injury management including prevention, extrication from site, first aid, transportation, acute management, evaluation, surgical management, comprehensive rehabilitation (physical, psychosocial, sexual and vocational), management and prevention of complications, home modification, reintegration into community and follow up.

The guiding principles are useful for all professionals involved in spinal cord injury management, and particularly for professionals who are new to the field and for centres which have just been established or are in the process of being established. They can also assist policy makers in designing rehabilitation services and sensitize them for implementing public awareness programmes and legislation for prevention.

ASCoN plans to work on more detailed guidelines for each aspect of the guiding principles. The Prevention Guidelines, first published in 2008, is the 2nd publication and ASCoN welcomes constructive criticism for the further refinement and improvement of both the Guiding Principles and the Prevention Guidelines.

Research and Information

There are many innovations and examples of models of good practice in the many different aspects of comprehensive spinal cord injury management across the Asia region. There is much to learn and to share and ASCoN can provide a platform to facilitate country specific or regional multi-centred research studies.

ASCoN will also be used as a vehicle to collect and disseminate materials related to all aspects of comprehensive spinal cord injury management, awareness and prevention and in doing so will increase access to relevant and appropriate information in all of the countries represented in the Network. This will support the ongoing development of services and the persons responsible for delivering such services.

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Appendix
Sample Data Collection Tool
Question set on causes of spinal cord lesion for patients with SCI

1. **Patient identification : (bed number – file number)**
2. **Date of data collection:**
3. **Date of birth :**
4. **Date of injury :**
5. **Date of acute admission :**
6. **Gender :**
7. **Associated injury :**
8. **Spinal surgery :**
9. **ASIA score :**
10. **Current occupation:**

11. When your accident occurred, what was your occupation – income status?

Paid employment	☐	Unemployed – self employed	☐
Volunteer / charity	☐	Houekeeping and maintenance	☐
Retired	☐	Student	☐

12. When your accident occurred what activity were you doing?

Sports/leisure	☐	workplace activity	☐
Transport	☐	national defense	☐
Other	☐	Please Specify:	

13. Before the moment your accident occurred did the following states of mind apply to you (mark as needed) **:**

Confused	☐	Depressed	☐
Distracted	☐	Overwhelmed	☐
Tired	☐	Overjoyed	☐
Stressed	☐		

14. What was the cause of your injury in your opinion? (mark maximum 3 items if relevant)

Delayed transport to hospital	☐	Bad road	☐
Bad equipment	☐	Default transport vehicle	☐
High speed	☐	carelessness of other person	☐
Lack of visibility	☐	Slippery / unstable ground	☐

15 . Immediately before your accident, did you use alcohol or medication?

Alcohol : Yes ☐ No ☐

Medication : Yes ☐ No ☐

16. If your accident is transport related, what was your situation? (choose one)

Passenger ☐ Driver ☐ Pedestrian ☐

What was the vehicle use? (choose one)

Truck ☐ Car ☐ Motorcycle ☐

Tricycle ☐ Bicycle ☐ Animal ride ☐

Other ☐ Please Specify:

17 . If your accident was working place related, what action caused your injury ? (mark maximum 3 if relevant)

Fall from height ☐ Slippery ground ☐

Unstable ground ☐ Crushed by object ☐

Hit by object ☐ Pierced by object ☐

Co-worker action ☐

18 . If your accident happened at your home or in your community, which of the following activities were you doing ? (mark maximum 3 if relevant)

Repairing house/roof ☐ Climbing on height ☐

Playing with friends ☐ Doing normal housework ☐

Helping my neighbors/friends ☐

19. Can You describe in one sentence how your accident occurred ?

……

20 . (To be done by data collector)

Injury etiology (only one) according priority deducted from the questionnaire answers:

Sports ☐ Assault ☐

Transport ☐ Fall ☐

Other traumatic cause ☐

Circumstances description/ subjective cause - factors - useful for prevention information (can be more then one)

Paid employment	☐	Self employment	☐
Transport :			
Motorcycle	☐	Four-wheel	☐
Bicycle	☐	Pedestrian	☐
High speed	☐	Alcohol intoxication	☐
State of mind	☐	Leisure	☐
Home keeping	☐	House maintenance	☐

Remarks :
Items 1 to 10 and item 20 should be filled in by data collector
Items 11 – 19 can be filled in by patient with help from relative of data – collector
To complete items 2 until 9 , use instructions from International SCI core data set

Questionnaire on data collection for prevention of SCI accidents. Spinal Cord Injury program, Vietnam, June 2006. Handicap International Vietnam project.