

# Helmet

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A road safety manual for  
decision-makers and  
practitioners



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## Preface

Road traffic injuries are a major public health problem and a leading cause of death and injury around the world. Each year nearly 1.2 million people die and millions more are injured or disabled as a result of road crashes, mostly in low-income and middle-income countries. As well as creating enormous social costs for individuals, families and communities, road traffic injuries place a heavy burden on health services and economies. The cost to countries, possibly already struggling with other development concerns, may well be 1%–2% of their gross national product. As motorization increases, road traffic crashes are becoming a fast-growing problem, particularly in developing countries. If present trends continue unchecked, road traffic injuries will increase dramatically in most parts of the world over the next two decades, with the greatest impact falling on the most vulnerable citizens.

Appropriate and targeted action is needed most urgently. The *World report on road traffic injury prevention*, launched jointly in 2004 by the World Health Organization and the World Bank, identified improvements in road safety management together with specific actions that have led to dramatic decreases in road traffic deaths and injuries in industrialized countries that have been active in road safety. The use of seat-belts, helmets and child restraints, the report showed, have saved thousands of lives. The introduction of speed limits, the creation of safer infrastructure, the enforcement of blood alcohol content limits and improvements in vehicle safety, are all interventions that have been tested and repeatedly shown to be effective.

The international community must now take the lead encouraging good practice in road safety management and the take up of these interventions in other countries, in ways appropriate to their particular settings. To speed up such efforts, the United Nations General Assembly passed a resolution on 14 April 2004 urging greater attention and resources to be directed towards the global road safety crisis. Resolution 58/289 on “Improving global road safety” stressed the importance of international collaboration in the field of road safety. A further resolution (A58/L.60), passed in October 2005, reaffirmed the United Nation’s commitment to this issue, encouraging Member States to implement the recommendations of the *World report on road traffic injury prevention*, and commending collaborative road safety initiatives so far undertaken towards implementing resolution 58/289. In particular, it encouraged Member States to focus on addressing key risk factors, and to establish lead agencies for road safety.

To contribute to the implementation of these resolutions, the World Health Organization, the Global Road Safety Partnership, the FIA Foundation for the Automobile and Society, and the World Bank, have collaborated to produce a series of manuals aimed at policy-makers and practitioners. This manual is one of them. Each provides

step-by-step guidance to countries wishing to improve road safety organisation and to implement the specific road safety interventions outlined in the *World report on road traffic injury prevention*. They propose simple, effective and cost-effective solutions that can save many lives and reduce the shocking burden of road traffic crashes around the world. We would encourage all to use these manuals.

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## Executive summary

Along with a global increase in motorization, particularly in low-income and middle-income countries, the use of motorized two-wheelers and bicycles is growing rapidly in many places. As a result, there are increasing fatalities and injuries among users of two-wheelers, with head injuries being a major concern. Motorcycle and bicycle helmets are effective both in preventing head injuries and in reducing the severity of injuries sustained by riders and passengers of two-wheelers.

Unfortunately, in many countries the use of helmets is low. The *World Report on Road Traffic Injury Prevention* described how wearing helmets would save many lives. Consequently, the Report recommended that countries set and enforce helmet laws for drivers and passengers of both motorized two-wheelers and bicycles.

The purpose of this manual is to provide advice on how to increase the use of helmets within a country. The manual is aimed at policy-makers and road safety practitioners and draws on experience from countries that have succeeded in achieving and sustaining high levels of helmet use. It provides the necessary evidence that will be needed to start a helmet use programme, and takes the user through the steps needed to assess the helmet situation in a country. It then explains the steps needed to design and implement a helmet use programme, including: setting up a working group; developing an action plan; introducing and enforcing mandatory helmet laws; creating appropriate standards for helmet production; effectively marketing helmets to the public; educating children and young people on helmet use; and consideration of the capacity for an appropriate medical response to be provided following a crash. Finally, the last section in the manual guides the user on planning and implementing an evaluation of the programme, such that results are fed back into programme design. For each of these activities, the document outlines in a practical way the various steps that need to be taken.

In developing the material for this manual, the writers have drawn on case studies from around the world to illustrate examples of “good practice”. Although the manual is aimed at countries with low use of helmets, the modular structure of the manual means it can be used in countries with very different levels of helmet use. The focus of the manual is on motorcycle helmets, although examples that pertain to bicycle helmet use are also addressed.





# Introduction



# Introduction

## Background to the series of manuals

In 2004 the World Health Organization dedicated World Health Day to the topic of road safety. Events marking the day were held in over 130 countries – to raise awareness about road traffic injuries, stimulate new road safety programmes and improve existing initiatives. On the same day, the World Health Organization and the World Bank jointly launched the *World report on road traffic injury prevention*, highlighting the increasing epidemic of road traffic injuries. The report discusses in detail the fundamental concepts of road traffic injury prevention, the impact of road traffic injuries, the main causes and risk factors for road traffic crashes, and proven and effective intervention strategies. It concludes with six important recommendations that countries can take to improve their road safety record.

### Recommendations of the *World report on road traffic injury prevention*

1. Identify a lead agency in government to guide the national road traffic safety effort.
2. Assess the problem, policies, institutional settings and capacity relating to road traffic injury.
3. Prepare a national road safety strategy and plan of action.
4. Allocate financial and human resources to address the problem.
5. Implement specific actions to prevent road traffic crashes, minimize injuries and their consequences and evaluate the impact of these actions.
6. Support the development of national capacity and international cooperation.

The report emphasises that the growing global problem can be averted with improved road safety organization and system-wide, multi-sectoral implementation of demonstrably effective interventions which are culturally appropriate and tested locally. In its fifth recommendation, the report makes it clear that there are several “good practice” – interventions already tried and tested – that can be implemented at low cost in most countries. These include strategies and measures that address some of the major risk factors for road traffic injuries, such as:

- setting laws requiring seat-belts and child restraints for all occupants of motor vehicles;
- requiring riders of motorcycles to wear helmets;
- establishing and enforcing blood alcohol concentration limits;
- setting and enforcing speed limits;
- managing existing physical road infrastructure in a way as to increase safety;
- improving vehicle safety.

A week after World Health Day, on 14 April 2004, the United Nations General Assembly adopted a resolution calling for greater attention and resources to be directed towards road safety efforts. The resolution recognized that the United Nations system should support efforts to tackle the global road safety crisis. At the same time, it commended WHO and the World Bank for their initiative in launching the *World report on road traffic injury prevention*. It also invited the World Health Organization, working in close cooperation with the United Nations Regional Commissions, to act as coordinator on road safety issues within the United Nations system.

Following the mandate conferred on it by the United Nations General Assembly, since the end of 2004 WHO has helped develop a network of United Nations and other international road safety organizations – now referred to as the “United Nations Road Safety Collaboration”. The members of this group have agreed on common goals for their collective efforts, and are initially focusing attention on the six recommendations of the *World report on road traffic injury prevention*.

A direct outcome of this collaboration has been the setting up of an informal consortium consisting of WHO, the World Bank, the FIA Foundation for the Automobile and Society and the Global Road Safety Partnership. This consortium is working to produce a series of “good practice” manuals covering the key issues identified in the *World report on road traffic injury prevention*. The project arose out of the numerous requests to WHO and the World Bank from road safety practitioners around the world asking for guidance in implementing the report’s recommendations.

The manuals are aimed at governments, nongovernmental organizations and “road safety practitioners” in the broadest sense. Written in an accessible manner, they provide practical steps on how to implement each recommendation in a way identified with good practice, while also making clear the roles and responsibilities of all those involved. The manuals are based on a common template that was used in a similar document on increasing seat-belt use, developed by the FIA Foundation in 2004. Although primarily intended for low-income and middle-income countries, the manuals are applicable to a range of countries and adaptable to different levels of road safety performance. Each manual includes case studies highlighting examples from both developed and developing countries.

The *World report on road traffic injury prevention* advocates a systems approach to road safety – one that addresses the road, the vehicle and the user. Its starting point is that

to effectively tackle road traffic injuries, responsibility needs to be shared between governments, industry, nongovernmental organizations and international agencies. Furthermore, to be effective, road safety must have commitment and input from all the relevant sectors, including those of transport, health, education and law enforcement. These manuals reflect the views of the report; they too advocate a systems approach and – following the principle that road safety should be pursued across many disciplines – they are targeted at practitioners from a range of sectors.

## **Background to the helmet manual**

### **Why was the helmet manual developed?**

Many countries around the world are facing the problem of a rapidly rising number of people injured or killed while riding two-wheelers – motorcycles and bicycles. A large proportion of the deaths and severe injuries result from injuries to the head. Helmets are effective in reducing the likelihood of head injuries, as well as their severity. Increasing helmet use in a country is thus an important way of improving road safety.

This manual seeks to provide practical advice to road safety practitioners on how to achieve a much higher proportion of users of two-wheeled vehicles wearing helmets. It follows on from the *World report on road traffic injury prevention*, which described evidence that setting and enforcing mandatory helmet use was an effective intervention for reducing injuries and fatalities among two-wheeler users. As already mentioned, the manual is one of a series of documents providing, in an accessible form, practical advice to countries on the steps necessary for improving their overall road safety record.

### **Who is the manual for?**

The manual is for use in countries that want to improve the rates of helmets use among users of two-wheelers, nationally or at a local level. It is targeted at governments, nongovernmental organizations and road safety practitioners. The list of possible users will vary according to the country and its current situation with regard to helmet use, but will certainly include:

- policy-makers and decision-makers;
- members of the judiciary;
- politicians;
- police officers;
- road safety and public health professionals;
- transport managers;
- manufacturers of motorcycles and bicycles;
- helmet manufacturers
- employers in the public and private sectors;

- nongovernmental organizations;
- insurance industry personnel;
- school and college teachers;
- researchers on road safety;
- instructors in driving and road safety.

The manual provides practical steps mainly on increasing helmet use among motorcycle users, though it also highlights case studies which illustrate issues around bicycle helmet use. Although aimed particularly at low-income and middle-income countries with low levels of helmet use, it is intended to be useful for all countries.

### **What does this manual cover and how should it be used?**

Increasing the rate of helmet use requires a number of steps. Exactly how many steps are needed will depend on how much is already in place in a particular country in the way of helmet programmes. This manual helps users identify which steps are relevant to their situation, and then provides the practical advice needed to implement the steps. As well as focusing strongly on technical measures, the manual also describes the institutional structures that need to be in place for a helmet programme to be successful.

As explained in Module 1 of this manual, the burden of deaths and injuries among users of two-wheelers is predominantly in low-income and middle-income countries. For this reason, the manual draws considerably on experience from such countries, with the intention that the content will be most relevant to other countries with a similarly high burden of injuries among two-wheeler users. Nonetheless, the structure of the manual is such that it can be applied to a wide range of countries in terms of their economies and levels of helmet use.

#### *What is covered?*

The manual focuses primarily on *motorcycle helmets*, since from a global perspective it is motorcycle users who suffer the majority of injuries and fatalities among two-wheeler users. However, it also addresses *bicycle helmets*. In order, though, to minimize the duplication that would result from addressing each issue first for motorcycle helmets and then for bicycle helmets, the main steps are discussed predominantly with reference to motorcycle helmets.

There are some controversial issues related to both motorcycle and bicycle helmet use and the manual addresses these. Tackling such issues will certainly increase the success of policies aimed at cutting the rate of injuries among motorcyclists and cyclists.

The technical content of this manual is divided into four modules, structured as follows.

- *Module 1* explains **why interventions are needed to increase helmet use**. It describes how helmets protect wearers and how effective they are in reducing head injuries.
- *Module 2* guides the user through the process of **assessing a country's situation on helmet use**. It outlines the data needed for a good diagnosis, and how these data can be used to set realistic targets and priorities for a programme.
- *Module 3* is about **designing and implementing a helmet programme**, including how to develop an action plan, including setting objectives, and deciding on activities needed to meet these objectives, estimating resources and setting a timeframe. The module includes sections on developing legislation and standards on helmet use, improving compliance, and establishing appropriate marketing and publicity strategies. Educational interventions are also discussed, as well as the need to consider the capacity to respond appropriately when motorcycle crashes do occur.
- *Module 4* is about **evaluation of a helmet programme**. This includes identifying the aims of the evaluation, considering different types of evaluation and choosing the most appropriate methods, and choosing the performance indicators to be used. The module also discusses the need to disseminate the evaluation results and use them to improve the programme.

Case studies, in the form of boxed text, are included throughout the manual. These examples have been chosen to illustrate processes and outcomes, with experiences from a wide range of countries, reflecting regional, cultural and socioeconomic diversity. Less detailed “notes” are also included as boxed text to illustrate briefer points of interest.

#### *How should the manual be used?*

The manual is not intended to be prescriptive, but rather adaptable to particular needs.

The technical modules contains flowcharts and checklists to help readers determine where their country stands with regard to helmet use, and to take those steps offering the greatest potential for improvement. The modular structure of the manual is intended to help this process of using only the relevant parts of the document.

Although it would help everyone to read the whole document, it is envisaged that particular sections will meet the needs of different countries. Nonetheless, all users will probably benefit from reading Module 2, enabling them to assess their situation and to pick particular actions to undertake. The choices made at this point will decide which of the remaining sections are useful. For example, a country where use of two-wheelers is high but lacking a helmet law and helmet standard might usefully work through all the technical sections. On the other hand, a country with an existing helmet law and helmet standard, an effective public awareness campaign around helmet use, but without monitoring or evaluation procedures, may choose primarily to use Module 4, while reading the other modules only for reference.

We encourage users to adapt the manual to local conditions: this means it may need to be translated and that sections of it may need to be altered to suit the local environment. We would also appreciate feedback on users' experiences in this process.

#### *What are the manual's limitations?*

This manual is not meant to be comprehensive. It draws upon the experience of its contributors from around the world to identify practical and effective steps that can be taken on helmet use, and thus reflects the views of those involved in its production. There may well be successful interventions followed by other countries that are not addressed here. Similarly, the case studies – used to illustrate processes, good practice and practical constraints – are not exhaustive but merely illustrate points made in the main text.

While the manual focuses on helmet use among motorcyclists, it also addresses cyclists. However, where the steps involved in a process are the same for both motorcycle and bicycle helmet use, they are presented only for motorcycle helmet use, to avoid repetition.

The manual is not an academic document. The references contained are only to material used in its development, and there is no attempt at an exhaustive literature review.

#### **How was the manual developed?**

The manual was based on a standard template that was developed jointly by the four partner organizations (the World Health Organization, the World Bank, the FIA Foundation for the Automobile and Society, and the Global Road Safety Partnership), and reviewed externally. The template was not meant to be rigid, but to provide a loose structure which, where possible, would unify the manuals in their form and approach.

An advisory committee of experts from the different partner organizations oversaw the process of developing each manual, and to provide guidance on its content. A small editorial committee for each manual then coordinated its technical content.

An outline of this manual on helmet use was produced by WHO as the project leader, and sent to the advisory and editorial committees for comment. Technical modules of the document were contracted out to organizations or individuals with particular expertise in an area. These people further developed the outline of their modules, reviewed the relevant literature and wrote the technical content, ensuring it reflected the latest scientific views on good practice.

The technical modules were reviewed independently by road safety practitioners, researchers and other experts from around the world. The document was then sent for technical editing.

### *Dissemination of the manual*

The manual is being translated into a number of languages, and countries are encouraged to translate the document into local languages. The manual will be disseminated widely through the distribution network used for the *World report on road traffic injury prevention*. The four partner organizations involved in the manual will plan training workshops to accompany in-country launches of the manual.

The manual will also be available in PDF format to be downloaded free from the web sites of all four partner organizations (see page 145).

This helmet manual is downloadable from  
[www.who.int/violence\\_injury\\_prevention/publications/road\\_traffic/en/index.html](http://www.who.int/violence_injury_prevention/publications/road_traffic/en/index.html)

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