

Seat-belts and child restraints

A ROAD SAFETY MANUAL
FOR DECISION-MAKERS
AND PRACTITIONERS



Seat-belts and child restraints: a road safety manual for decision-makers and practitioners

ISBN

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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- 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, many of which already struggle with economic development, may be as much as 1–2% of their gross national product. As motorization increases, preventing road traffic crashes and the injuries they inflict will become an increasing social and economic challenge, particularly in developing countries. If present trends continue, 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 urgently needed. 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 and specific actions that have led to dramatic decreases in road traffic deaths and injuries in industrialized countries active in road safety. The use of seat-belts, helmets and child restraints, the report showed, has saved thousands of lives. The introduction of speed limits, the creation of safer infrastructure, the enforcement of limits on blood alcohol concentration while driving, 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 to encourage good practice in road safety management and the implementation of the interventions identified in the previous paragraph in other countries, in ways that are culturally appropriate. To speed up such efforts, the United Nations General Assembly passed a resolution on 14 April 2004 urging that greater attention and resources 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 (A/58/L.60), passed in October 2005, reaffirmed the United Nations’ 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. In 2008, the United Nations passed a further resolution calling for a ministerial conference on global 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 on seat-belts and child restraints is one of them. Each provides step-by-step guidance to countries wishing to improve road safety organization and to implement the specific road safety interventions outlined in the *World report on road traffic injury prevention*. They propose simple, cost-effective solutions that can save many lives and reduce the shocking burden of road traffic crashes around the world. We encourage all to use these manuals.

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Executive summary

Increasing motorization worldwide has brought increases in crashes and injuries to vehicle occupants, particularly in low- and middle-income countries. One of the most effective measures to protect occupants from injury in the event of a crash is the fitment and use of seat-belts and child restraints. They are proven to save lives and reduce injury severity, and all vehicle occupants should be appropriately restrained when travelling in a motor vehicle. Seat-belts and child restraints are a secondary safety measure; though effective, they do not reduce crash risk, for which other primary safety measures are needed, particularly to protect vulnerable road users.

Worldwide, however, not all vehicles are fitted with seat-belts, and not all occupants use them when they are available. In countries where car use is rising most rapidly, the use of seat-belts and child restraints is low. More needs to be done to convince political leaders, police authorities, individual drivers and passengers that seat-belts provide essential protection from injury and can reduce the consequences of a crash. Comprehensive programmes of legislation, law enforcement, public education and publicity are needed to promote the benefits of seat-belt and child restraint use and to ensure compliance once legislation is in place.

The purpose of this manual is to provide advice and examples that will lead to increased use of seat-belts and child restraints as safety devices at a national level. 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 restraint use. It includes recommendations for developing and implementing technical standards and legislation, advice on how to monitor and evaluate progress, and suggestions regarding other multidisciplinary measures. A particular focus is the design and implementation of a programme to increase seat-belt wearing and child restraint use through legislation, enforcement and public education measures.

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 specifically aimed at those countries with low seat-belt and child restraint use, it is hoped that the information and advice contained within this manual will also help countries with higher rates of use to further improve usage rates, reinforce their campaigns and direct further resources towards promotion of increased use.

Strategies that work in one country may not necessarily transfer effectively to another. The manual attempts to reflect a range of experiences from around the world, but does not offer prescriptive solutions. Rather, it is hoped that the manual can act as a catalyst for local initiatives and actions to improve road safety. It provides a base of information that stakeholders can use to generate their own solutions and develop advocacy tools and legislation to increase the use of seat-belts and child restraints that will work with the audiences they are trying to reach.

The checklist in Box 1 summarizes the steps needed to implement a programme to increase the use of seat-belts and child restraints.

BOX 1: Key steps and programme activities

1. Assess the current situation using:

- casualty data;
- usage levels;
- consumer data;
- market data;
- situational data on legislation, penalties, standards and enforcement, publicity and education practices.

2. Establish a working group including all key stakeholders needed to develop and promote/advocate the action plan.

3. Develop, manage and promote an action plan that:

- is data led;
- is results focused, with objectives and targets;
- includes resource estimates;
- includes monitoring and evaluation for sustained improvement.

4. Design and implement the action plan using a combined multisectoral approach. Priorities should be chosen on the basis of the assessment and resources available. A combined enforcement and publicity campaign is recommended and the range of programme activities includes:

- improving legislation;
- increasing penalties;

- improving seat-belt equipment and fitting standards;
- strengthening inspection of standards and regulations;
- strengthening the enforcement strategy and training police as necessary;
- developing and delivering a targeted publicity campaign linked to and in advance of increased enforcement;
- facilitating other voluntary measures, such as employer education and regulation schemes, school, community and driver training programmes, and insurance incentive/deterrent schemes;
- improving post-crash responses, including first aid, rescue services and emergency medical care systems.

5. Monitor and evaluate the programme. There is a need to:

- begin the process at the start when planning the programme and collect data before implementing the plan;
- develop and test the methodology to meet objectives and measure change in target groups and related situations as frequently as necessary;
- collect the data and control quality carefully;
- disseminate the data widely and use results to improve the programme.



Introduction



Background to the series of manuals

In 2004, for the first time ever, the World Health Organization (WHO) 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, WHO 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 implement to improve their road safety record (Box 2).

BOX 2: 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 stresses that the growing global problem can be averted with improved road safety organization and systemwide, multisectoral implementation of demonstrably effective interventions that 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 motor cycles to wear helmets;
- establishing and enforcing blood alcohol concentration limits;
- setting and enforcing speed limits;
- managing existing physical road infrastructure in a way that increases 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 WHO, 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 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- and middle-income countries, the manuals are applicable to a range of countries and are 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 the belief that in order 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 seat-belt and child restraint manual

Why was the seat-belt and child restraint manual developed?

The seat-belt is the single most effective feature in a vehicle to reduce the severity of injury to the vehicle occupants that results from road traffic crashes. Article 7 of the Vienna Convention on Road Traffic of 1968 states: “The wearing of safety belts is compulsory for drivers and passengers of motor vehicles, occupying seats equipped with such belts, save where exceptions are granted by domestic legislation.”

This manual was developed in order to provide essential information on how to increase seat-belt and child restraint¹ usage rates at a national level. It is aimed primarily at low- and middle-income countries, and outlines the process for increasing wearing rates by examining the need for intervention, effective actions, laws and standards, programme implementation, and the impact of all multidisciplinary measures. It follows on from the *World report on road traffic injury prevention*, which described the evidence that legislating and enforcing mandatory use of seat-belts and child restraints is an effective intervention to reduce injuries and fatalities amongst vehicle occupants. It is one of a series of manuals that provide practical advice in an accessible form to countries on the steps necessary for improving their overall road safety record.

Seat-belts, of course, do not prevent a crash taking place. They do, however, play a crucial role in reducing the severity of injury to vehicle occupants involved in a crash.

Who is the manual for?

The manual is intended to provide relevant information and give guidance to those countries that want to improve the use of seat-belts and child restraints, in particular those that do not, at present, have national legislation covering the fitment and wearing of seat-belts, and those that have poor wearing rates.

The manual targets all key stakeholders. These include:

- policy-makers
- members of the judiciary
- politicians
- police officers
- road safety and public health practitioners
- transport managers
- employers in the public and private sectors
- vehicle and component (including seat-belts and child restraints) manufacturers
- nongovernmental organizations

¹ Seat-belts and child restraints are sometimes collectively referred to as “occupant restraints”.

- insurance industry personnel
- school and college teachers
- researchers on road safety
- instructors in driving and road safety
- motoring and transport associations
- motor vehicle dealers.

Although aimed particularly at low- and middle-income countries with low levels of seat-belt and child restraint use, it is intended to be useful for all countries.

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

What is covered?

Many countries and states have yet to address the possibility of reducing road death and injury through the use of seat-belts and child restraints. Some have only attempted to deal with the problem on a very basic level. For these countries, it is recommended that they systematically work through this manual to ensure a comprehensive approach that will increase vehicle occupant safety. The manual helps users to identify what actions are relevant to their situation, and provides the practical advice needed to implement the necessary steps. As well as focusing on technical issues, the manual also describes the institutional structures that need to be in place for a programme of measures to raise seat-belt and child restraint usage rates to be successful.

The manual covers both seat-belts and child restraints. In order to avoid duplication the main steps are discussed predominately with reference to seat-belts, but where necessary there is specific coverage of issues relevant to child restraint use.

The manual is divided into five modules, structured as follows:

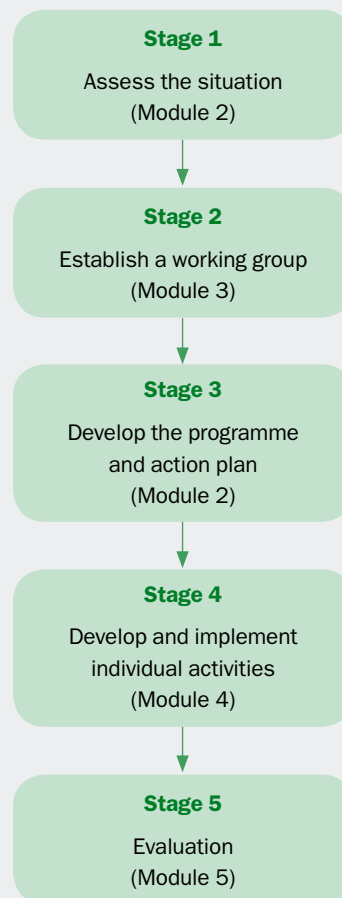
- **Module 1** explains **why interventions to increase seat-belt and child restraint use are needed**. This module summarizes the evidence on effectiveness of seat-belts and child restraints in reducing injury, providing explanations of the benefits of use and how an increase in wearing rates can reduce the number of deaths and injuries taking place.
- **Module 2** provides guidance on **how to assess a country's situation regarding seat-belt and child restraint usage**. The module outlines the data needed for an accurate diagnosis of the problem and for identification of gaps and weaknesses in the mechanisms in place to address it.
- **Module 3** explains the need **to set up a working group** and how to use the assessment information **to prepare an action plan** including objectives, time frames and targets, prioritizing interventions and estimating resources to raise seat-belt and child restraint usage levels.

- **Module 4** is about **designing and implementing a seat-belt programme**. It recommends an approach combining legislation, penalties and standards with a range of interventions, including enforcement, education and publicity. It also gives guidance on appropriate rescue and medical responses for casualties of crashes.
- **Module 5** explains how to **evaluate a seat-belt programme**. It highlights the importance of building monitoring and evaluation into the project plan as an integral part of the campaign and identifies the data required.

How should the manual be used?

The manual is not intended to be prescriptive, but rather adaptable to a particular country's current needs. The manual enables users to adopt a five-stage process (see Figure 1) for designing and implementing an effective seat-belt and child restraint

Figure 1 General stages of a seat-belt and child restraint programme: from assessment to evaluation



programme. Action plans (Stage 3) can be matched to countries' individual situations through the assessment process (Stage 1) and can be continuously adjusted and improved by monitoring and evaluation (Stage 5). The first part of Module 3 provides the crucial information on how to develop an action plan and select the appropriate interventions. The second part of Module 3 explains how to plan and implement each of these interventions effectively.

Readers are encouraged to read the entire manual; however, once interventions have been selected (see priority measures in Table 3.2 and checklist in Table 4.10), readers can study the appropriate sections on interventions in more detail to find out about recommended good practice and see some examples from other countries.

What are the limitations of this manual?

This manual is not meant to be comprehensive. It draws upon the experience of its contributors to identify practical and effective steps that can be taken to save lives and reduce the injuries of vehicle occupants by increasing seat-belt and child restraint usage, and thus partly reflects the views of those involved in its production. There may well be successful interventions that are not reported here. Similarly, the case studies – used to illustrate processes, good practice and practical constraints – are not exhaustive but merely illustrate ideas presented in the main text.

The successes of all seat-belt and child restraint programmes are subject to the culture and environment of a country. Although the advice provided within this manual represents good practice, stakeholders should be aware that a programme that achieves success in one country may not be suitable for implementation in another country. Therefore an assessment should be made before implementation of any programme in order to determine its appropriateness for the target audience.

How was the manual developed?

This manual has been produced after a full review of the FIA Foundation *Seat-belt campaign toolkit*, published in May 2004 (1). It is based on a standard template that was developed jointly by the four partner organizations (WHO, the World Bank, the FIA Foundation for the Automobile and Society, and the Global Road Safety Partnership), and reviewed externally. The template was not intended to be rigid, but to provide a loose structure that, 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 provided guidance on its content. A small editorial committee for each manual then coordinated its technical content.

As part of the original research, a review of relevant literature was undertaken in order to gain as much knowledge as possible from any previous studies by international practitioners. Studies found and reviewed dated from 1969 to 2007.

Evaluations were also made of existing technical specifications, standards and regulations concerning the manufacture and installation of seat-belts.

Additional information was gathered through discussions with epidemiology, education, publicity and manufacturing experts. Clubs affiliated to the FIA Foundation also provided information relating to campaigns undertaken in their respective countries, and questionnaires were sent to the relevant government departments in 106 countries, covering legislation, penalties, campaigns, technical specifications and standards, and wearing rates. Information was also obtained from WHO highlighting those countries that had or had not implemented seat-belt wearing legislation.

Further literature, in hard copy and electronic formats, was sought. This was again compared with that used in the original toolkit to identify any examples of good practice for differing scenarios and environments. Partners were consulted in order to obtain case studies that were as diverse as possible, geographically and in terms of income level.

Technical experts were consulted in order to provide additional information that would reinforce the detail of the manual and allow decision-makers to make an informed choice about how to implement, manage and monitor campaigns relating to manufacturers, users and the industry as a whole. Information was obtained from medical, technical, manufacturing, policing, education and publicity experts.

The draft manual was then put through a process of peer review.

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, downloadable free from the web sites of each of the four partner organizations.

How to get more copies

Further copies of the manual can be ordered by writing to:

FIA Foundation
60 Trafalgar Square
London WC2N 5DS
United Kingdom

Or by e-mailing: mail@fiafoundation.org

Reference

1. *Seat belt campaign toolkit*. London, FIA Foundation, May 2004 (<http://www.fiafoundation.org/news/archive/2004/Pages/Seatbeltcampaigntoolkit.aspx>, accessed 20 October 2008).