

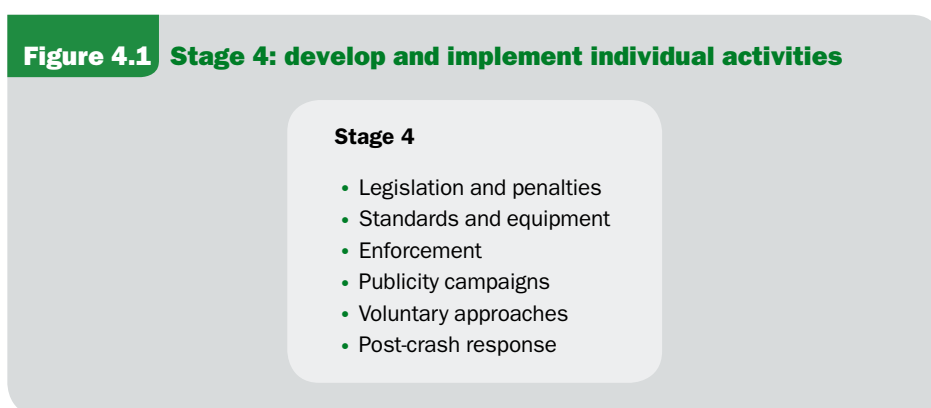
4

**How to develop and
implement interventions**

4.1 Increasing usage: the combined approach	81		
4.2 Legislation and penalties	82		
4.2.1 Developing seat-belt fitting and usage laws	83		
4.2.2 Identifying legal responsibilities	86		
4.2.3 Exemptions	86		
4.2.4 Penalties for non-compliance	87		
4.2.5 Developing and implementing legislation	89		
4.2.6 Phasing implementation	91		
4.2.7 Section summary: checklist for seat-belt legislation	92		
4.3 Seat-belt standards and equipment	93		
4.3.1 Adopting a standard or regulation	94		
4.3.2 Types of standards or regulations and their content	97		
4.3.3 Testing and certification	98		
4.3.4 Vehicle inspection and seat-belt maintenance	99		
4.3.5 Retrospective fitting	100		
4.3.6 In-vehicle reminder systems	102		
4.3.7 Section summary: checklist for developing seat-belt standard or regulation	103		
4.4 Increasing usage: enforcement	104		
4.4.1 Pre-requirements	104		
4.4.2 Enforcement strategy	105		
4.4.3 Enforcement methods	108		
4.4.4 Police training	109		
4.4.5 Processing penalties	109		
4.4.6 Overcoming obstacles to enforcement	110		
		4.4.7 Section summary: increasing seat-belt usage through enforcement	111
		4.5 Increasing usage: voluntary measures	112
		4.6 Increasing usage: publicity campaigns	113
		4.6.1 Objectives of the campaign	115
		4.6.2 Creating campaign messages	116
		4.6.3 Reaching the target audience	118
		4.6.4 Creative concepts	119
		4.6.5 Selecting an agency for the campaign	122
		4.6.6 Working with the media	124
		4.6.7 Campaign stages in relation to seat-belt legislation	124
		4.6.8 Evaluating the campaign	126
		4.7 Increasing usage: other voluntary measures	127
		4.7.1 Employer regulation and incentive schemes	127
		4.7.2 Education and training	129
		4.7.3 Insurance and public incentive schemes	132
		4.8 How to ensure an appropriate post-crash response	133
		4.8.1 Seat-belts and injuries	135
		4.8.2 Seat-belt removal	135
		Summary	138
		References	140

MODULE 3 provided information on stage 3, how to develop the programme and action plan. It included advice on choosing priority actions and a summary of high- and medium-priority interventions together with an indication of their relative effectiveness, ease of implementation and cost (see Table 3.2).

Module 4 moves onto stage 4 (see figure 4.1) and gives guidance on how to develop and implement each key activity of a programme aimed at increasing seat-belt usage.



The module stresses the need for an integrated approach combining measures that work well together. It also provides substantial information on each activity and the structure of this activity, as shown in Table 4.1.

Whilst this module gives advice on interventions in respect of seat-belts, it is also applicable to programmes aimed at increasing the use of child restraints. Where there are issues that are specific to child restraints these are also included, but in general, to avoid repetition, reference is made to seat-belts only.

Table 4.1 A summary of key areas of activity and interventions to be included in a seat-belt programme

Key areas of activity	Guidance provided on:	Section
Legislation and penalties	• Developing fitting and wearing laws • Identifying legal responsibilities • Exemptions • Penalties for non-compliance • Introducing and implementing legislation • Phasing implementation	4.2
Standards and equipment	• Adopting a standard • Types of standard • Testing and certification • Vehicle testing and seat-belt maintenance • Retrospective fitting • In-vehicle reminder systems	4.3
Increasing usage: enforcement	• Pre-requirements • Enforcement strategy • Enforcement methods • Police training • Processing penalties • Obstacles to enforcement	4.4
Increasing usage: voluntary approaches	• Publicity campaigns, including: – Objectives of the campaign – Creating campaign messages – Reaching the target audience – Creative concepts – Selecting an agency for the campaign – Working with the media – Campaign stages in relation to seat-belt legislation – Carrying out and evaluating the campaign • Other voluntary approaches, including – Employer regulation and incentive schemes – Education and training – Insurance and public incentive schemes	4.5, 4.6 4.7
Post-crash response	• Rescue and first aid requirements	4.8

4.1 Increasing usage: the combined approach

Once seat-belts have been installed in a vehicle, the next objective is to ensure that the vehicle occupants use them.

Improving seat-belt and child restraint use calls for a combined approach involving a range of sectors and disciplines (see Figure 4.2). The most powerful intervention is enforcement but to be effective it needs to be implemented after the public have been informed about seat-belts and the law.

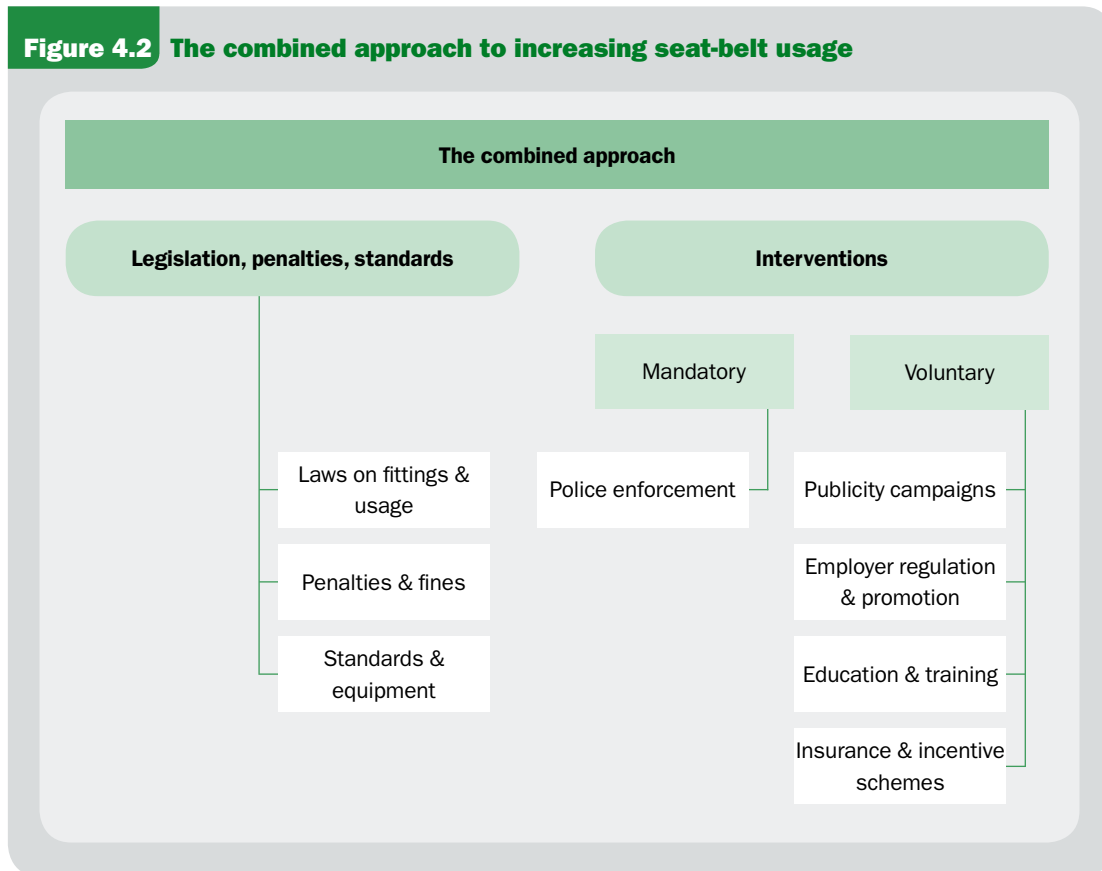
Education, training and publicity should be used to ensure that there is sufficient public and political acceptance of the law and proposed enforcement. It should also be recognized that education and publicity without enforcement will only have a limited effect; for example, publicity used in the United Kingdom between 1970 and 1982 raised seat-belt wearing rates to 40%, but no higher (1). The most effective road safety programmes have been those that achieve a change in behaviour. It is of course also important to increase awareness and improve attitudes, but lives are actually saved when the desired behaviour patterns are adopted (2).

There are also other voluntary measures, such as employer regulation and incentive schemes and insurance and public incentive schemes, that can have an impact. These are not under the direct control of governments but they should be encouraged under a partnership approach to road safety.



Adopting an integrated programme of interventions

Overall an integrated programme of interventions should be adopted, with more emphasis being placed on voluntary methods at the start of multisectoral programmes followed by a progressive reliance on enforcement to reach high levels of compliance.

Figure 4.2 The combined approach to increasing seat-belt usage

4.2 Legislation and penalties

The overall objective of a law is to make seat-belt use universal. This can be achieved by targeted and appropriate legislation on seat-belt fitting and wearing that is consistently enforced and well understood by the public. All three components are needed for success but clearly the first task is to develop and implement appropriate legislation.

The process of developing a law, though, will also help with other activities, such as the practical issues around enforcing the law. In addition, the process should strengthen the public consensus on the need for a seat-belt law.

BOX 4.1: Key seat-belt legislation

In the case of seat-belts, legislation needs to deal with the following three key issues:

- seat-belt fitting by vehicle type and inspection
- seat-belt wearing by vehicle type, passenger location, children
- penalties for non-compliance.

4.2.1 Developing seat-belt fitting and usage laws

In most cases, seat-belt fitting and wearing laws will involve adding a clause to a law already in existence, such as a road traffic or motor vehicle act. Sometimes, though, a completely new piece of legislation will be necessary.

The assessment of the current legislative situation (Module 2) will have identified the gaps and weakness in the system and the priority improvements required. These improvements are likely to include:

- drafting and enacting new legislation;
- expanding the scope of an existing law, for example to include additional vehicle occupant groups such as rear seat occupants;
- more clearly defining the actions required under the existing law and those responsible;
- increasing the penalties for non-compliance;
- increasing enforcement powers.

To help with the assessment process and with the development of legislation some examples from a number of countries of legislation on seat-belt fitting, adult seat-belt use, and child restraint use have been provided in Boxes 4.2 and 4.3. Appendix 3 provides an example seat-belt law.

BOX 4.2: Example extracts of laws on seat-belt fitting**INDIA****Text:**

33a/125: Safety belt collapsible steering column, autodipper and padded dash boards:

(1) One year from the date of commencement of the Central Motor Vehicles (Amendment) Rules, 1993, the manufacturer of every motor vehicle other than motor cycles and three-wheelers of engine capacity not exceeding 500 cc shall equip every such vehicle with a seat-belt for the driver and for the person occupying the front seat.

34/1-A: The manufacturer of every motor vehicle of M-1 category shall equip every motor vehicle with a seat-belt for a person occupying the front facing rear seat:

Provided that the specifications of Safety Belt Assemblies and Safety Belt Anchorages in motor vehicles shall conform to AIS 005–2000 and AIS

015–2000 specifications, respectively, as may be amended from time to time, till such time as corresponding Bureau of Indian Standards specifications are notified;

Provided further that on and after 1st October, 2002, the specification of Safety Belt Assemblies and Safety Belt Anchorages in motor vehicles shall conform to AIS 005–2000 and AIS 015–2000 specifications, respectively.

37/125-A: Safety belt, etc., for construction equipment vehicles:

One year from the date of commencement of the Central Motor Vehicles (Amendment) Rules, 2000, the manufacturer of every construction equipment vehicle other than an agriculture tractor shall equip every such vehicle with a seat-belt for the driver and for the person occupying the front seat, and with a rear view mirror.

Source: Central Motor Vehicles Rules, 1989, as amended by Central Motor Vehicles (First Amendment) Rules, 2003.

KENYA**Text:**

No motor vehicle shall be used or driven on a road unless it is fitted with seat-belts in the following manner:

(1) A seat-belt per seating position in a motor vehicle, and if seating accommodation is provided for more than two persons abreast whether by a continuous

seat known as a “bench seat” or by separate seats, the seat-belts for the persons other than those seated next to the body of the vehicle may consist only of a lap strap position of the seat.

(2) The owner of any motor vehicles used or driven on a road contrary to paragraph (1) shall be guilty of an offence and liable to a fine of one thousand shillings for every seat that is not fitted or, if fitted, is not of the proper standard or specification.

Source: Laws of Kenya: The Traffic Act, Chapter 403, Section 119, Rule 22A (1) – Seat-belts.

BOX 4.3: Example extracts of laws on wearing seat-belts**AUSTRALIA****Text:**

Rule 264: Wearing of seatbelts by drivers

(1) The driver of a motor vehicle that is moving, or is stationary but not parked, must comply with this rule if the driver's seating position is fitted with a seatbelt.

(2) The driver must wear the seatbelt properly adjusted and fastened unless the driver is:

- (a) reversing the vehicle; or
- (b) exempt from wearing a seatbelt under rule 267.

Rule 265: Wearing of seatbelts by passengers 16 years old, or older

(1) A passenger in or on a motor vehicle that is moving, or is stationary but not parked, must comply with this rule if the passenger is 16 years old, or older.

(2) The passenger must occupy a seating position fitted with a seatbelt if:

(a) there is a seating position fitted with a seatbelt that is not already occupied by someone else who is not exempt from wearing a seatbelt; and

(b) the passenger is not exempt from wearing a seatbelt under rule 267.

(3) If the passenger occupies a seating position fitted with a seatbelt, the passenger must wear the seatbelt properly adjusted and fastened unless the passenger is exempt from wearing a seatbelt under rule 267.

(4) If the motor vehicle has 2 or more rows of seats, the passenger must not sit in the front row of seats unless:

(a) the passenger is occupying a seating position fitted with a seatbelt; or

(b) there is not a seating position available for the passenger in another row of seats; or

(c) the passenger is permitted to sit in the front row of seats under another law of this jurisdiction.

Source: Australian Road Rules 1999; Part 16, Rules for persons travelling in or on vehicles.

KENYA**Text:**

(3) No person shall be in a motor vehicle which is in motion on a road and occupy a seat in a vehicle in respect of which a seat-belt is fitted in accordance with this rule without wearing the seat-belt.

(5) It shall be the responsibility of the conductor of a public service vehicle, and where there is no conductor, the driver of that vehicle, to keep the seat-belt in a clean, dry and generally wearable condition.

Source: Laws of Kenya: The Traffic Act, Chapter 403, Section 119, Rule 22A (1) – Seat-belts.

VIET NAM**Text:**

If motor vehicles are equipped with seat-belts, the driver and the occupant of the front seat in the vehicle shall fasten the seat-belts.

Source: Article 9 – General provisions; Chapter II – Rules for road traffic; Road Traffic Safety Law No. 26/2001/QH10, passed by the National Assembly in Session 9, 10th Congress, 22 May to 29 June 2001.

4.2.2 Identifying legal responsibilities

Legislation should clearly identify who is responsible for complying with the law:

- For the fitting of seat-belts this is usually the manufacturer and sometimes the vehicle owner (see Box 4.2).
- For children it is strongly recommended that the adult driver is made responsible for the appropriate restraining of all children within the vehicle.
- For public service vehicles it is usually adult passengers who are responsible. The driver or the conductor can also be made responsible for keeping the seat-belt clean, as in the Kenyan example in Box 4.3.

4.2.3 Exemptions

Stakeholders should consider justifications for exemptions to the law and clearly state which vehicle occupants and under what circumstances may be exempt from wearing a seat-belt. This area of legislation is complex and widespread exemptions under the law are not advisable as they could undermine the effectiveness of a seat-belt use programme. Also, enforcement may be more time consuming and more difficult if there are differences in where the law applies, or if there are people who are exempt from the law.

Bearing this caution in mind it may still be desirable to allow certain well-defined exemptions (see Box 4.4), such as:

- **Emergency services.** On emergency response, or for other specialist reasons; this should not be a routine exemption, i.e. for every journey.
- **Types of vehicle.** Stakeholders may wish to consider exemptions for drivers of commercial passenger-carrying vehicles, such as taxis, if this is considered justifiable.
- **Health reasons.** Persons holding a valid certificate signed by a medical practitioner to the effect that it is inadvisable on medical grounds for them to wear a seat-belt, e.g. following major heart surgery. Note that pregnant women should not be exempt from the seat-belt law but they should only wear a three-point lap and diagonal seat-belt, not a lap belt on its own. They should also be given clear advice on the safe way to wear the seat-belt (Figure 4.3).

BOX 4.4: Example extract of law on exemptions**UNITED KINGDOM****Text:**

You must use a seat-belt in cars, vans and other goods vehicles if one is fitted. Adults, and children aged 14 years and over, must use a seat-belt where

fitted, when seated in minibuses, buses and coaches. Exemptions are allowed for the holders of medical exemption certificates and those making deliveries or collections in goods vehicles when travelling less than 50 metres (approx 162 feet).

Source: Laws RTA 1988 sections 14 and 15, MV(WSB)R, MV(WSBCFS)R & MV(WSB)(A)R & (MV)(WSBCFS)(A)R.

Figure 4.3 Three-point lap and diagonal seat-belts essential for pregnant mothers



“Mother and unborn child are both safer in a collision if a lap and diagonal seat-belt is worn correctly.”

Royal Society for the Prevention of Accidents (RoSPA)

When considering exemptions it should not be forgotten that with the exception of a medical condition whereby the use of a seat-belt may further endanger the life of an individual, seat-belts do save lives. Also, when making exemptions, legislation should ensure that there are clear definitions that prevent ambiguities.

4.2.4 Penalties for non-compliance

Clearly the penalty for non-compliance must be perceived as sufficiently serious to deter would-be law-breakers. The penalties should be set in line with penalties for other traffic law violations and they can be linked to a penalty points system that

leads to more serious penalties, such as the cancellation of the driving licence when accumulated points pass predetermined limits. Similarly the law could specify a more serious penalty for repeat offenders. In general it is simpler to specify a fixed fine for non-compliance with wearing laws to make sure that the enforcement and administration procedures are straightforward.



CASE STUDY: **France: enforcement of seat-belt law**

In France, increased enforcement led to the number of fines for non-use of seat-belts rising by 15% from 2002 to 2003, and in July 2003 there was also an increase from one to three penalty points added to a driver's licence for not wearing a seat-belt. As a result of these measures, the use of seat-belts by front

seat occupants went up to 90% in urban areas and to 97% outside urban areas. Wearing rates continued to rise and by 2006 the urban rate was 94%, and outside urban areas 98% of front seat occupants were wearing seat-belts. (3).

Consultation with stakeholders is crucial when developing the law and setting penalties. When implementing and starting enforcement of a new or revised law the legal arrangements could allow for a preparatory period when warning notices are given to offenders instead of fines. These notices would usually inform motorists that there had been a change in the law and that in future a penalty will be imposed for breaking it. Alternatives to fines can also be specified, such as the requirement to attend accredited driver training courses. Box 4.5 shows some examples of seat-belt legislation specifying the penalties applicable to drivers in non-compliance.

BOX 4.5: Example extracts of laws on penalties**KENYA****Text:**

(2) The owner of any motor vehicles used or driven on a road contrary to paragraph (1) shall be guilty of an offence and liable to a fine of one thousand

shillings for every seat that is not fitted or, if fitted, is not of the proper standard or specification.

(4) A person who does not wear a seat-belt as required under paragraph (3) shall be guilty of an offence and liable to a fine of five hundred shillings.

Source: Laws of Kenya: The Traffic Act, Chapter 403, Section 119, Rule 22A (1) – Seat-belts.

VIET NAM**Text:**

Punishment in the forms of warning or monetary fine from VND 10,000 to VND 30,000 shall be applied to the driver and the occupant of the front seat in the vehicle equipped with seat-belts who do not fasten the seat-belts while the vehicle is running.

Source: Article 9 – Fines applicable to drivers of automobiles and vehicles having similar structures which violate road traffic rules; Chapter II – Administrative fines applicable to violations of road traffic rules; Decree No.15/2003/ND-CP issued by the Government prescribing administrative fines applicable to violations of road traffic rules.

4.2.5 Developing and implementing legislation

The requirements for ensuring that the legislation is enacted and that it will be vigorously enforced are:

- strong support from the highest levels of government, sending a clear message to society that seat-belts and traffic safety are vital national issues;
- sufficient public support to ensure that enforcement of the law will be accepted by the majority;
- sufficient commitment from the enforcement and communication agencies to ensure their full participation.

The timescale and phasing of the seat-belt programme will depend on how easy or difficult it is to meet these requirements (see next section).

The following questions should be considered when trying to meet these requirements and appropriate actions taken:

- Which agencies will be most effective and influential in implementing legislation?
- Are the capabilities of the agencies adequately addressed in the legislation?
- Is the proposed legislation worded in an appropriate way, so as to gain support?
- What are the proposed penalties for motorists disobeying the law? Are these penalties appropriate and are they likely to be effective?
- Has there been sufficient consultation with stakeholders, politicians and the public?

The advocacy activities of the working group will be essential in promoting and gaining approval for the legislation. Members of the group who are government officials, policy-makers, or injury prevention specialists will have the greatest influence in convincing others of the need for a law.

Adequate public awareness must be ensured in order to optimize the success of the law and consultation and information programmes must be integrated when the law is being developed. The Costa Rica case study gives an example of promotion of seat-belt wearing before legislation was passed and enforced.



CASE STUDY: **Costa Rica: seat-belt legislation, awareness raising and enforcement**

In 2003–2005 the Government of Costa Rica led a successful programme to reintroduce a seat-belt law. The country's previous seat-belt law had been abolished some years earlier after it was ruled to contravene constitutional freedoms, and the subsequent drop in seat-belt use had been blamed by the government for a rise in road casualties.

To build public support for a new seat-belt law, the government assembled a coalition including the Road Safety Council, the traffic police, the National Insurance Institute and the Costa Rican Automobile Club to promote an awareness campaign about the individual and societal benefits of using a seat-belt. This campaign was intended to both build support for proposed new legislation and prepare the population for future police enforcement. The campaign was entitled “Por Amor Use el Cinturón” (For love use your seat-belt). Publicity materials, including television and radio adverts, billboards and newspaper adverts,



Automobile Club of Costa Rica (both photos)

were complemented by a media relations campaign promoting seat-belt use. The traffic police distributed advice leaflets to drivers encouraging them and their passengers to use their seat-belts.

Legislation was passed in April 2005 and by May, after a two-week grace period to allow for further awareness raising of the new law amongst motorists, the police began enforcement, issuing fines for non-compliance. Surveys conducted before the legislative and publicity campaign and then again after the introduction of the new law showed driver seat-belt use during the period rising from 24% to 82% (4).



CASE STUDY: **Bahamas: need for adequate consultation**

The need to consult before implementation of a seat-belt law is illustrated by the case of the Bahamas, where implementation of the mandatory seat-belt law was suspended for four years after it was passed due to concern about the level of penalties and lack

of exemptions. Amendments have been passed to address these issues and to improve the regulations concerning children in accordance with international recommendations (5).

4.2.6 Phasing implementation

In practice many countries have phased in both fitting and wearing seat-belt legislation. For fitting laws this has happened largely because the initial priority relating to reducing road traffic crash fatalities and injuries was to protect car occupants. These laws were then extended to buses and trucks.

Wearing laws have also often been phased in by type of occupant, with front seat wearing being made mandatory before rear seat wearing and child restraints.

Campaign planners believe that the best approach is to see full vehicle occupant legislation (covering front, rear and child vehicle occupants) introduced in a single phase. This sends a consistent message that seat-belts save lives and injuries whatever the location of the occupant and avoids the possible misperception caused by tiered legislation implying that it is not as necessary to wear a seat-belt in the rear as in the front. However, historically most governments have considered this too much to ask of the driving public immediately and have adopted a phased approach. A typical example of phased legislation is shown in the case study from Australia.



CASE STUDY: **History of seat-belt legislation, Australia**

In 1959, the Senate of the Commonwealth Parliament in Australia established a Select Committee whose primary aim was to investigate the most effective ways of promoting road safety in the country. The Committee (1960) recommended that “the motor trade should install seat-belts of an approved standard in all motor vehicles. Road safety authorities should give publicity to the advantages of wearing seat-belts.”

Australian Standard E35 (Safety Belts) was introduced in 1961 and was very similar to that used in the United Kingdom (BS 3254). A standard with specifications for anchorages (D11) was produced in 1967. To ensure that seat-belts conformed to this, the Standards Association of Australia (SAA) registered a certification mark that would be used

by manufacturers who were approved by the SAA, enabling consumers to identify seat-belts that were manufactured to the national standard.

Starting in 1962, the Australian Road Safety Council produced a monthly journal attempting to generate awareness of seat-belts and their benefits, and reported on work undertaken to try and achieve this. The journal, *Report*, continued for over a decade.

After a recommendation by the Victorian Joint Select Committee for Road Safety (1969), legislation was introduced (1970) making it mandatory for vehicle occupants to wear seat-belts. Soon after, similar legislation was introduced in New South Wales (1971). By 1972, seat-belt wearing legislation applied to the whole of the country.

It is important that an appropriate time frame be developed for enacting the law. The time frame from implementation of the law to full enforcement and penalty for non-compliance can be anything from a couple of months to several years. This will depend on the situation in the country, and must be articulated in the overall action plan.

4.2.7 Section summary: checklist for seat-belt legislation

A checklist for seat-belt legislation might be as follows:

- Aim to develop seat-belt and child restraint laws to make restraint usage universal. Seat-belts and child restraints reduce death and injury severity in road crashes.
- Aim to develop and enact legislation that deals with the three main issues: seat-belt fitting by vehicle type and inspection; seat-belt wearing by vehicle type, passenger location, children; and penalties for non-compliance. Include legislation prohibiting carriage of children in front seats unless placed in approved child restraints, with airbags switched off.
- Use the gaps and weaknesses identified in the situation assessment to guide the development of a seat-belt usage programme and action plan.
- Consult with stakeholders when developing laws and setting penalties.
- Consider phasing in fitting and wearing seat-belt legislation, with front seat wearing being made mandatory before rear seat wearing and child restraint. However, introducing full vehicle occupant legislation is believed to be the best approach as it sends a consistent message and avoids possible misperceptions.

- Requirements for ensuring legislation is enacted and will be enforced include strong political support, sufficient public support, sufficient commitment from the traffic police and advocacy through communications agencies.
- Consider the level of severity of penalties for non-compliance. Penalties must be perceived as sufficiently serious to deter would-be law-breakers and consistent with penalties for other traffic law violations.
- Consider carefully any justifications for exemptions to seat-belt laws. Widespread exemptions are not advisable as they could undermine the effectiveness of a seat-belt programme.

4.3 Seat-belt standards and equipment

This section is for practitioners and campaigners who are responsible for the overall design and implementation of a seat-belt programme. It therefore aims to introduce seat-belt standards from a general point of view. A more detailed and technical examination of seat-belt standards should be undertaken by technical specialists.

The information provided in this section of the manual refers to the manufacturing and fitting of seat-belts. It aims to give guidance and recommendations on the use of legislation and standards to increase the safety of vehicle occupants. The key to achieving success is consultation and partnership with vehicle manufacturers. If countries can ensure that vehicles sold in their country have seat-belts installed as standard, manufactured to the specified regulations set out within legislation, then stakeholders can start to work towards increasing wearing rates.

Stakeholders should note that ease of use and comfort will inevitably affect wearing levels. Therefore, recommendations are based on types that have proved to be effective in providing satisfactory support in a crash and that minimize inconvenience to the vehicle occupant when fastening and wearing.

This section provides information on:

- adopting a standard or regulation (4.3.1)
- types of standards or regulations and their content (4.3.2)
- Testing and certification (4.3.3)
- vehicle inspection and seat-belt maintenance (4.3.4)
- retrospective fitting (4.3.5)
- in-vehicle reminder systems (4.3.6).

4.3.1 Adopting a standard or regulation

One of the objectives of a seat-belt programme might be to raise the quality of the seat-belts being used. This is best achieved by ensuring that all seat-belts meet a recognized safety standard – one that has been demonstrated as being effective in reducing injuries.

Standards mostly include technical requirement specifications and test methods regarding the construction and installation of the different seat-belt types and their components.

A few questions to ask when developing, adopting or revising a seat-belt standard include:

- Does a national standard exist?
- Does the national standard meet international standards?
- Are vehicle standards enforced and are they adhered to by vehicle manufacturers and distributors?
- Are consumers aware of the standard?

If the situation assessment (Module 2) reveals shortcomings in the fitting of seat-belts and their components then a specialist committee should be established as part of the working group (Module 3 and Figure 3.1) to make decisions about adopting or revising standards and strengthening control mechanisms for improving compliance. This committee should include appropriate technical experts from key government agencies, standards specialists and representatives from vehicle and component manufacturers.

Consultation with vehicle manufacturers and distributors is crucial to ensure that a standard is not so stringent as to restrict production and availability.

Ideally stakeholders should harmonize with one specific standard to ensure consistency at a global level. It is recommended that countries base standards on the United Nations Economic Committee for Europe (UNECE) regulations. The appropriate UNECE body to establish uniform prescriptions regarding new motor vehicles and motor vehicle equipment is the World Forum for Harmonization of Vehicle Regulations (WP29). More details on these regulations are provided in section 4.3.2.

NOTE**UNECE regulations**

The UNECE regulations under the 1958 Agreement (6) cover the following:

- (a) wheeled vehicles, equipment or parts concerned;
- (b) technical requirements, which if necessary may include alternatives;
- (c) test methods by which any performance requirements are to be demonstrated;
- (d) conditions for granting type approval and their reciprocal recognition, including any approval markings and conditions for ensuring conformity of production;
- (e) the date(s) on which the regulation enters into force.

Each Contracting Party to the 1958 Agreement (see note on UNECE regulations) can decide if it wants to apply a UNECE regulation (its application is therefore optional). A Contracting Party that decides to mandate a regulation on its territory must do so by transposing the regulation to its national or regional legislation.

Countries can make additions to these standards; this may be necessary to meet local environmental conditions (see note on environmental conditions). In addition, countries can consider harmonizing their standards and regulations in stages. India, for example, has adopted a three-stage process (see case study from India).

NOTE**Standards and environmental conditions**

When adopting standards, stakeholders should assess the effects of their natural environment on the seat-belt components. For instance, prolonged periods of ultraviolet (UV) light from the sun can reduce the lifespan of a seat-belt unless treated. The heat from the sun can also distort some types of materials. Australia has adopted the UNECE regulations, but added to them to ensure suitability within their environment.

Table 4.2 Contents of UNECE Regulations 14, 16 and 44

Contents of regulations	Reg. 14	Reg. 16	Reg. 44
	Anchorage	Installation	Child restraints
<i>Application for approval:</i>			
The technical details required within an application by the manufacturer, also highlighting measures to control conformity	4	4	4
<i>Approval:</i>			
Labels stating approval, granted by a specified authority	4	4	4
<i>Markings:</i>			
Indicates the obligation on the manufacturer to provide details about the product		4	4
<i>Specifications:</i>			
Specified requirements of the product	4	4	4
<i>Testing:</i>			
Highlights the type of tests required to be undertaken for individual components and products, specifying the minimum and maximum results of conformity	4	4	4
<i>Inspection after testing:</i>			
Evaluation and documentation of testing results	4	4	4
<i>Modifications:</i>			
Manufacturers obligation to inform the approval authority and document any modifications to a product that have been approved	4	4	4
<i>Installation:</i>			
Outlining the requirements of installation dependent on the seat type		4	
<i>Conformity of production:</i>			
Identifies the obligation on the manufacturer to implement control measures to ensure conformity	4	4	4
<i>Penalties for non-conformity:</i>			
Outlines the penalties enforced for non-compliance	4	4	4
<i>Operating instructions:</i>			
Standard instructions to be provided by the manufacturer to the product user	4	4	4
<i>Production discontinued:</i>			
The obligations on the manufacturer to inform the approval authority that a product has ceased to be manufactured	4	4	4
<i>Transitional provisions:</i>			
Periods of notice given to manufacturers to comply with amendments to regulations	4	4	4



CASE STUDY: **Harmonization of standards with UNECE regulations, India**

India has established a harmonization process for four-wheeled (or three-wheeled if the weight exceeds 1 tonne) passenger vehicles. Regulations AIS 016 (seat-belts) and AIS 015 (anchorage) have been designed to harmonize with UNECE regulations. As

such, India has introduced legislation to ensure that vehicles sold within the country meet the requirements of these standards using a three-tiered (phased) approach with targets set for 2003, 2005 and completion in 2010.

4.3.2 Types of standards or regulations and their content

UNECE has developed and regularly updates three key regulations under the 1958 Agreement: 14, 16 and 44 (see Table 4.2), on the design and installation of seat-belts, their anchorages and child restraints for its Member States (7–9).

There are currently 58 countries from various regions of the world that have acceded to the 1958 Agreement, including countries in Asia and Africa, for example Malaysia, the Republic of Korea, Thailand and Tunisia.

For more extensive information on the regulations see the UNECE web site: <http://www.unece.org/trans/main/wp29/wp29regs.html>.

Some examples of standards for seat-belt components are shown in Table 4.3.

Table 4.3 **Seat-belt components and example quality standards**

Component	Example UNECE standards
<i>Buckles</i>	Easy to engage and disengage and be designed to minimize injury to the user
Section 6.2.2 of UNECE Regulation 16	Single-handed operation is possible for front seat occupants
	Release buttons are red (easy to locate)
	Maximum and minimum forces for operation of the release button
<i>Adjustment system and pretensioners</i>	Seat-belts must not be slack when worn to be effective
Section 6.2.6 of UNECE Regulation 16	Retracting seat-belts with automatic locking systems are much more comfortable for users
	Load limiters allow controlled release of the webbing to minimize forces on the user
<i>Anchorage</i>	The standard prescribes the appropriate structural position of the anchorage points and the type of bolts used for fastening
Annexe 3 of UNECE Regulation 14	Lap straps must be positioned to prevent wearers from slipping under the belt and shoulder anchorage should be above shoulder height to avoid compressing the spine in a crash

4.3.3 Testing and certification

The testing and certification process is employed to enforce the seat-belt regulations. It is recommended that countries introduce a type approval system for testing and certifying seat-belts and that an independent centre with well-trained inspectors is established to carry out the tests.

This approach requires manufacturers to submit a sample product to the designated approval department for independent testing and authorization using the tests specified in the regulations.

Typical tests required for seat-belt certification are shown in box 4.6.

BOX 4.6: Performance tests for seat-belts

Dynamic test

The test is performed on seat-belt assemblies to verify the minimum displacement of the manikin and that no part of the assembly, affecting the restraint of the occupant, would break, release or unlock (paragraph 6.4.1. of UNECE Regulation 16).

Dynamic strength test

The dynamic strength test uses a test dummy on a sled, restrained by the seat-belt under test attached to standard anchorages or those prescribed for use (paragraph 7.7 of UNECE Regulation 16).

The dynamic test may be performed after multiple operations of the mechanisms (e.g. buckles, adjusters, retractors) to provide a control on the durability of the system (paragraph 7.5 of UNECE Regulation 16).

Abrasion test

The seat-belt webbing should be subject to an abrasion test and, if thought appropriate, a sun-light degradation test (paragraph 6.4.2.1 of UNECE Regulation 16).

Durability tests

Other mechanical parts of the seat-belt should be subject to durability testing, appropriate for the conditions under which they are expected to operate. This could include, for example, high or low temperatures or a sandy environment or high humidity environment, as these factors are known to affect seat-belt performance (section 7 of UNECE Regulation 16).

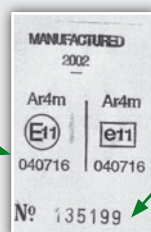
If testing identifies non-compliance, the product tested would not be type approved, or if the test is performed to verify the conformity of production, the product should be removed from production and sale until such time as it has been modified to comply with the requirements outlined by the regulations. This would subsequently result in a recall of that product if sales have been made (refer to section 10 of UNECE Regulations 14 and 16, and section 12 of UNECE Regulation 44).

Seat-belts that are approved under the regulations must have a label attached with an international approval mark showing year of manufacture, approval number for the seat-belt type and manufacturer and the manufacturer's serial number.



Example approval label

Approval number for
this belt type and
manufacturer



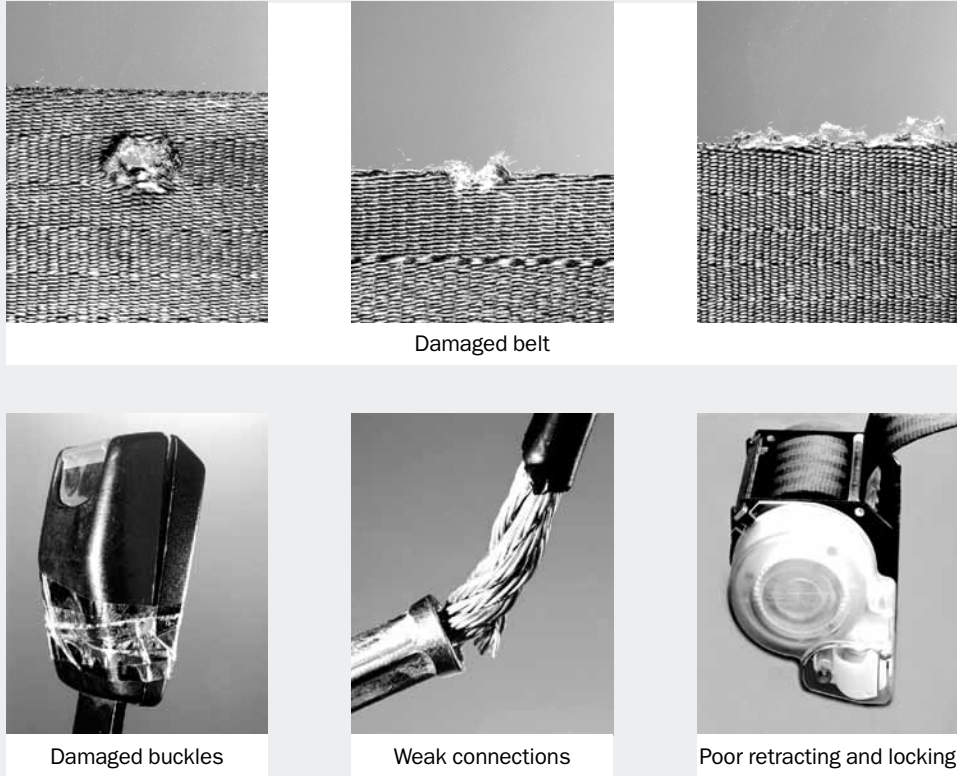
Manufacturer's serial
number of batch control

Source: Securon Ltd.

4.3.4 Vehicle inspection and seat-belt maintenance

It is important that the condition of seat-belts is checked regularly and that they are maintained in good working order. Countries that have mandatory vehicle inspection systems for vehicles in use should include checks of the seat-belts, retractors and anchorage points for corrosion, damage and excessive wear and tear that may reduce the capability of the whole system. To ensure effective checking it is important that the vehicle testing manual includes the testing procedures for seat-belts and that the inspectors are trained to carry out these procedures. An example inspection procedure from the United Kingdom is shown in Appendix 4.

In addition vehicle owners should be informed of the need to check and maintain the seat-belts. Seat-belts that have been deployed in serious crashes or that have been damaged should be replaced. Even minor damage to seat-belt webbing or components can significantly reduce their effectiveness. For example, a small 2–3 millimetre (mm) cut in the webbing can reduce the effectiveness of the seat-belt by up to 40% in a static test (Figure 4.4).

Figure 4.4 Possible seat-belt damage

Source: Securon Ltd.

4.3.5 Retrospective fitting

In countries in which a significant proportion of the vehicle fleet are not fitted with seat-belts, or only have front seat-belts fitted as standard, due to their date of manufacture, it may be necessary to consider a requirement for retrospective fitting of seat-belts (i.e. fitting of seat-belts after the point of manufacture and sale). Seat-belts will not be effective unless they are installed in accordance with an appropriate standard (see box 4.7). When choosing the type of seat-belt, the level of protection must be considered against the practicality of fitting and the cost of the conversion.

BOX 4.7: Standards for retrospective fitting of seat-belts

Where effective and controlled retrospective fitting can be achieved, the following recommendations have been made in the Australian and New Zealand standard AS/NZS 2596 (10):

- The belt should be anchored to a substantial part of the metal body or frame of the vehicle.
- Anchors for lap belts and lap sections of other assemblies should be at least 380 mm apart, where practicable.
- The shoulder anchor point of lap and diagonal belts should be located at or about shoulder height so that, for all sizes of wearer, the torso strap passes across the chest like a sash and over the shoulder to the anchor. The height of this point in relation to shoulder height depends partly upon the distance between shoulder and anchor. For tall wearers, the torso strap may of necessity slope downwards from shoulder to anchor; 15 degrees is recommended as the maximum angle below the horizontal. Torso straps of harness belts should similarly be anchored at or about shoulder height.
- Each anchor point in the vehicle should be capable of withstanding a force of at least 12.5 kilonewtons (kN) without fracture. Unless the vehicle has inbuilt anchorages, the use of reinforcing plates or other devices is essential to prevent the belt anchors pulling out of the vehicle body or frame. Those provided with the assembly should be used.
- Where anchor fittings from two adjacent assemblies are to be connected to the same anchor point in the vehicle, the anchor should be capable of carrying the combined force of the two assemblies, i.e. 25 kN.
- Vehicle seat structures are usually inadequate for carrying seat-belt loadings and should not be used as anchors unless the vehicle manufacturer has provided inbuilt seat-belt anchors in the seat.

**CASE STUDY: Malaysia: retrofitting of rear seat-belts**

Rear seat-belts will be made compulsory in Malaysia for all car occupants starting on 1 January 2009. However, vehicles produced before 1 January 1995 will be exempted, as many were not equipped with rear seat-belts or anchorage points. Vehicles produced after this date that do not have anchorage

points will also be exempt. Among this older group of private vehicles (produced post-1995), about 10% are being retrofitted with seat-belts free of charge through a smart partnership involving the Road Safety Department and car manufacturers. Vehicle owners have been given three years to retrofit the seat-belts.

The minimum legal requirement for seat-belts in coaches should be to fit a two-point lap belt. A three-point lap and diagonal seat-belt does offer greater protection but it may not be feasible to retrofit these types of seat-belts on older coaches. A two-point lap belt will assist in restraining the occupants within their seats and significantly reduce the likelihood of death or injury.



CASE STUDY: **Cost-benefits of retrofitting seat-belts in buses, United Kingdom**

To illustrate the benefits of seat-belt compliance, in 1994 the United Kingdom's Department for Transport conducted an analysis of the financial savings made through mandatory retrofitting and 90% usage of seat-belts in coaches, minibuses and

vans. Installation costs were compared to casualty costs. This highlighted a casualty saving of US\$ 5 250 000 in coach crashes alone (giving a net benefit of US\$ 1 725 000, taking into account installation costs) (11).

4.3.6 In-vehicle reminder systems

Several devices have been developed in recent years to remind vehicle occupants to buckle up. Typically they comprise a flashing light on the dashboard and a loud warning tone, which can increase in intensity with higher speeds. Initially they operated only for the driver's seat but new systems can be applied to any seat.

In 2006 more than half the new cars sold in Europe were fitted with reminder systems to warn drivers that they have not buckled up their seat-belt. Safety experts suggest that the reminders will work with drivers and passengers who forget but they recognize that they are unlikely to affect hard-core non-wearers. Japan made reminder systems mandatory for the driver's seat in 2005. All countries should consider similar legislation and should not add additional taxes for these items or for seat-belts, for example by classifying them as luxury items.



CASE STUDY: **In-car seat-belt reminders increase wearing levels, Sweden**

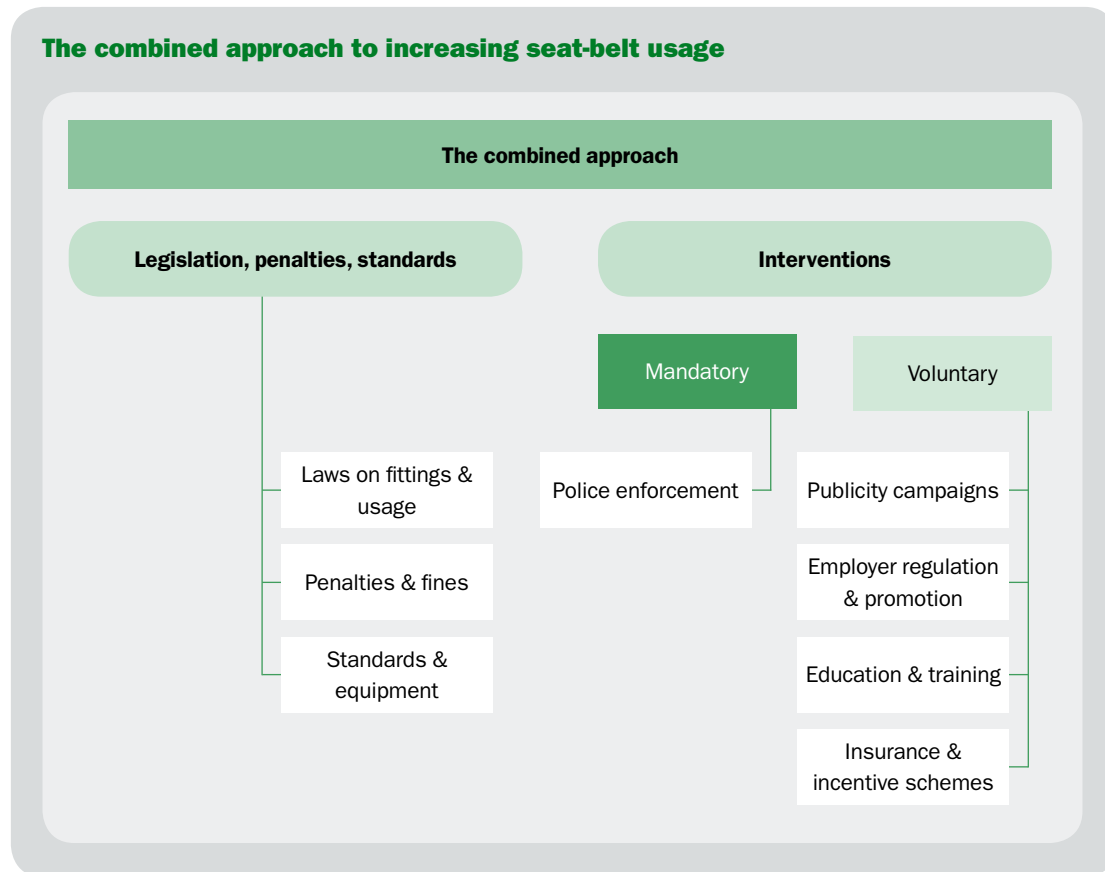
A Swedish study indicated that reminders giving audible and visual signals increased wearing levels from 77% to 88%, according to ambulance personnel reports from crash scenes. Wearing levels seemed to be virtually unchanged for systems that gave only visual signals (12).

4.3.7 Section summary: checklist for developing seat-belt standard or regulation

A checklist for developing a seat-belt standard or regulation might be as follows:

- Examine current seat-belt manufacturing and fitment standards and guidance.
- Determine whether an existing standard needs revision or a new standard has to be developed.
- Determine current levels of vehicles fitted with seat-belts.
- Determine current levels of vehicles with anchorage points only.
- Calculate the cost of retrospective installation for vehicles with anchorages only and establish realistic consumer costs.
- Lobby government and increase support to establish a working party to address the need for the introduction of technical standards for the manufacturing and fitting of seat-belts and child restraints.
- Establish a working party (which should include manufacturers and consumer groups) to identify the ability of the country or state to conduct regular vehicle inspections, outlining improvements to be made.
- Develop and agree an action programme with targets and realistic timescales.
- Develop and agree standards or regulations based on UNECE Regulations 14, 16 and 44.
- Lobby for legislation to be introduced that incorporates the appropriate changes and ensure that the standard is included in national legislation.
- Establish a procedure for testing and certification of seat-belts by a regulatory agency and for enforcement of the new standard or regulation.
- Agree a timescale for manufacturers and retailers to conform to new standards.
- Produce and disseminate information on the new standard to manufacturers, retailers and the public.
- If vehicle inspection is mandatory, establish a procedure for inspecting seat-belts and implement guidance and training for inspectors.
- Produce seat-belt inspection guidance for vehicle owners.
- Encourage private and public sector organizations to play an active role in promoting and controlling the use of seat-belts that meet international standards.
- Monitor and evaluate the effectiveness of the standards and regulations programme.

4.4 Increasing usage: enforcement



The most effective tool for increasing compliance is enforcement, especially when it is supported by voluntary measures, in particular targeted publicity and education campaigns. This section deals with enforcement.

4.4.1 Pre-requirements

Three essential requirements prior to starting the enforcement campaign are:

- **Lead by example.** Government and other agencies, particularly the transportation, health and police departments, should take the lead and make seat-belt use compulsory for their own staff under their contracts of employment, and they should be seen to wear them at all times.
- **Inform the public about enhanced enforcement.** Motorists should be informed in plenty of time about new laws, changes in enforcement and the penalties for non-compliance through appropriate media.
- **Raise public and political awareness and support** to a sufficient level to ensure that the enforcement campaign will be acceptable.

4.4.2 Enforcement strategy

Strategic traffic law enforcement can and does make a difference if it follows good practice. For effective implementation of seat-belt laws:

- enforcement must provide a meaningful and deterrent threat to non-seat-belt wearing motor vehicle users;
- the perceived risk of apprehension and prosecution must be high.

The **objective** of a proactive seat-belt law enforcement intervention is to ensure that seat-belts are worn by all vehicle occupants on all roads at all times.

The **outcome** sought is an increase in seat-belt wearing, which will lead to a reduction in injuries, road trauma and deaths.

Apprehending offenders is a by-product of the intervention, not the main objective itself. As the intervention proves to be successful, apprehensions should decline and allow police to change the priorities of their strategy.

Enforcement should be “intelligence led”, which requires:

- Understanding which occupants are most at risk and the groups who are not using seat-belts through data collection and analysis. Police crash reports must include information about seat-belt usage at the time of the crash.
- Understanding community perceptions and political commitment regarding seat-belt wearing. Public pressure on politicians can lead to greater support for more intense enforcement of seat-belt laws. Political will is critical in ensuring a consistent and rigorous enforcement process.



George Institute

Moving from the introduction of a new law to its full enforcement can be a lengthy process depending on the position of the politicians and the public regarding the law. Compliance with the law should be built up in planned stages to ensure sufficient political and public support.

Enforcing a seat-belt law creates an extra burden on the police. It is useful in advance to examine the capacity of the police force, to explore how to integrate seat-belt enforcement into current policing activities, and to determine whether resources are available for possible additional recruits. In any case, traffic police will need training in the new law and how best to enforce it.

How well the police can cope will help decide whether to introduce a blanket enforcement of the law or to take a phased approach. Phased enforcement should target those areas where seat-belt wearing rates are known to be low and where casualty rates among vehicle occupants are high.

Police action after apprehending violators can also be phased. Typically when enforcement commences police can start by issuing warnings and explaining the new law and then after a time agreed in the legislation they can issue the appropriate fines. Increasing the severity of the fines can also help increase wearing levels but this will usually be implemented through the legislation process (see section 4.2.4).

However, it must be noted that phasing in legislation, and allowing certain exemptions from laws, are steps that themselves introduce a set of concerns with regards to enforcement. Enforcement may be more time consuming and more difficult if there are differences in where the law applies, or if there are people who are exempt from the law.

Senior police officers must take a lead in the initial planning and implementation of intervention strategies. A “champion” in the police field will ensure ownership within the enforcement community and assist in ensuring the sustainability of a national or statewide campaign on seat-belt wearing. Police commanders must appreciate the cost of enforcement compared with the cost of rescue operations, medical treatment and rehabilitation of the injured.

Training in effective strategic law enforcement may also be helpful in obtaining and maintaining the commitment of police officers to enforce the seat-belt laws.



CASE STUDY: **Seat-belt campaign strategy, United States**

The first formal enforcement campaign (primary law) in the United States was conducted in Elmira, New York, in the 1980s. The approach used in this county was later used as a model for other campaigns across the country. Williams et al. (2000) (13) highlighted the success of this campaign, with front seat wearing rates increasing from 49% to 80%. However, the enforcement programme was not maintained, and wearing rates fell to 69%.

In 1997, the National Highway Traffic Safety Administration (NHTSA) initiated the Buckle Up America public health and safety campaign designed to increase seat-belt use nationwide. The campaign, now called Click It or Ticket, was built around a four-point strategy that is still the foundation of NHTSA campaigns (14). The rate of seat-belt use increased from 61% in 1996 to 82% in 2005.

Point 1: Enact strong legislation

It is imperative to adopt primary enforcement seat-belt use laws and to close the gaps in child passenger safety laws in all states. Police officers should be able to write a citation whenever a seat-belt violation is observed, whether or not the driver has committed any other traffic infraction. Child passenger safety laws should cover all children up to age 16 years in every seating position.

Point 2: Build public-private partnerships at the local, state and federal levels

The goal of increasing seat-belt use is too big for any one group or agency to accomplish alone. But

working together, the nation can achieve higher use through stronger laws, visible enforcement and public education and information. Partnerships or coalitions can set the tone in a community, workplace or organization, and the media can help spread the message that the proper use of seat-belts and child safety seats are imperative for maintaining the health and well-being of families and other community members.

Point 3: Conduct active, high-visibility enforcement

Experience has shown that, after seat-belt use laws are passed, seat-belt use increases quickly. But without active and sustained high-visibility enforcement, it soon drops again. Seat-belt laws must be visibly enforced the way other traffic laws are (red light running, speeding, etc.). In addition to increasing seat-belt use and reducing crash injuries, high-visibility enforcement results in a measurable reduction in crime (one third of criminal apprehensions occur as part of traffic stops).

Point 4: Expand effective public education

It is critical to educate the public about the benefits of seat-belt and child safety seat use. Public education may include a broad range of activities such as enforcement campaigns, promotional events and community-based initiatives. These activities are most effective when they are well planned and coordinated and use a simple message that is repeated many times in different ways.

4.4.3 Enforcement methods

Strategic law enforcement integrates four fundamental principles of policing in a multidimensional intervention (Table 4.4).

Table 4.4 Four fundamental principles of law enforcement

Principle	Elaboration of principle
Increased visibility of enforcement	This includes highly visible, publicly observable and strategically located checkpoints and roadblocks These must be varied in location, intensity and time of day or night. There should be many police officers in each working team Visibility includes signage about the enforcement activity, safety vests for police and adequate lighting at night
Repetition of enforcement campaigns	This indicates to motorists that the risks of being caught are high – anywhere, any time
Strict and consistent enforcement	After an initial public warning period, police enforcement should be strict, non-discriminatory, fair and consistent – not just short term, on highways or where police enforcement can be anticipated If there is no enforcement, there will be limited or no compliance
Well-publicized enforcement	To achieve maximum effectiveness, compliance-driven enforcement must be combined with coordinated education and publicity campaigns involving the engagement of government, local government, the mass media and other agencies Publicity campaigns should be conducted before, during and after policing activities with reinforced safety messages Safety brochures on correct seat-belt use may be handed out with a warning as an alternative to issuing a fine Education and instruction can include reminders of the benefits of seat-belt wearing and the constant promotion of safety messages

As well as adopting these principles, the enforcement agencies, together with their collaborating partners, should agree **minimum annual targets** for levels of compliance based on benchmark surveys of seat-belt wearing. The enforcement strategy should be results focused and resource allocation should be driven by progress towards meeting the target.

Success of law enforcement efforts is indicated by the level of compliance observable in the driving community and not by the number of infringements or warnings given. Compliance is measured by the percentage increase in seat-belt wearing rates. Other performance measures are the number of checkpoint operations, target operations, educational lectures and individual and media warnings. The police should also publicize the benefits of their programme to encourage a strong community consensus for using seat-belts.

Apprehension of violators of the seat-belt laws will largely be done through checkpoints and roadblocks, mobile highway patrols and police stationed at locations where vehicles stop, such as service stations, tollgates and traffic signals.

Enforcement operations should be well planned, with all traffic officers being appropriately trained and briefed. Safety should be paramount, with due consideration given to the safety of the interception officers and the driving public, the safe use of equipment and the selection of checkpoint sites.

4.4.4 Police training

Police officers must be trained in effective strategies and tactics to achieve maximum success. These include:

- knowledge of the law;
- understanding how seat-belt wearing reduces the risks of injuries (even in low-speed crashes);
- police officers on and off duty must obey the law and must set an example;
- understanding how to set up safe and effective roadblocks and checkpoints for maximum on-road public exposure and enforcement. This will include signage or large banners indicating to all the driving population what enforcement is being undertaken, e.g. “Seat-belt checkpoint” or “Seat-belts save lives”;
- how to target areas with high rates of non-compliance;
- how to provide effective advice and education to motorists;
- understanding the impact of crashes on financial and human resources, both as regards the community and as regards the resource savings to police and emergency rescue services when an effective law enforcement programme is undertaken.

4.4.5 Processing penalties

Choosing penalties is dealt with as part of the legislation process in section 4.2. As well as considering phasing in more severe penalties, it is important that penalties are processed quickly and equitably regardless of the status of those who have broken the law. Fines can be collected quickly and efficiently without a court process through a ticket system or by on-the-spot fines, as follows:

- Written tickets can be issued on the spot, requiring the offending driver to pay a fine to a given department or bank by a specified date or submit to another penalty such as a driver training course. To operate this method effectively, a computerized database should be set up to record all offences. Fixed penalties can use a combination of fines and demerit points.
- On-the-spot fines are levied in some countries whereby motorists caught driving without wearing seat-belts have to pay a fine directly to the police officer. The money is then passed on to the transportation authority.

The former method is preferred as the opportunity for corruption is somewhat reduced and also it provides scope for including seat-belt violations in a penalty points system. It also enables alternative penalties to be issued, such as attendance at a driver training course.

4.4.6 Overcoming obstacles to enforcement

Enforcement authorities will often have limited resources and checking seat-belt violations will compete with other policing priorities. Agreeing a national and local seat-belt wearing target is therefore crucial in obtaining commitment and the necessary resources.

Political support is fundamental to sustained outcomes. Scarce police resources must be used effectively and efficiently to maximize the value of law enforcement operations.

Table 4.5 shows some barriers that can arise when trying to implement a seat-belt law, together with their remedial actions.

Table 4.5 Overcoming barriers or obstacles to effective implementation of the law

Barriers	Remedial actions
Limited police resources	• Strategic planning for intensive high-profile, high-visibility enforcement activity – resource deployment and coordination • Combining education and enforcement • Strong media campaigns • Community support campaigns • Allocation of additional traffic officers
Competing police priorities	• Government and senior police officers understanding the real economic and human costs of road trauma compared with the relatively lower costs of enforcement • Appreciating the cost savings that can be achieved by strategic traffic enforcement
Complacency in enforcement	• Enhanced training of police officers, supervisors and police management, with emphasis on the risks to drivers, their passengers and the community
Police officer sympathy in favour of the driver: • Seat-belts stated to be uncomfortable, inconvenient or unnecessary • Cost of fines	• Education of police officers about the associated risks of not wearing seat-belts • Community education
Inadequate or ineffective policing capability or strategies and the perception that enforcement is too difficult with such extensive non-compliance	• Development of an integrated law enforcement strategy • Identification and publication of minor successes • Modelling on “good practice” examples of success • Targeted seat-belt law enforcement
Corruption, including: • Police officers collecting fines and not passing them on to government authorities • Illegal and unethical receipt of monies as payment to overlook an offence (bribery)	• Anticorruption measures • An appreciation that corruption undermines any road safety intervention • Enhanced education and training of officers • Salary reviews of traffic officers after appropriate training • Promotion of a code of ethics/behaviour

4.4.7 Section summary: increasing seat-belt usage through enforcement

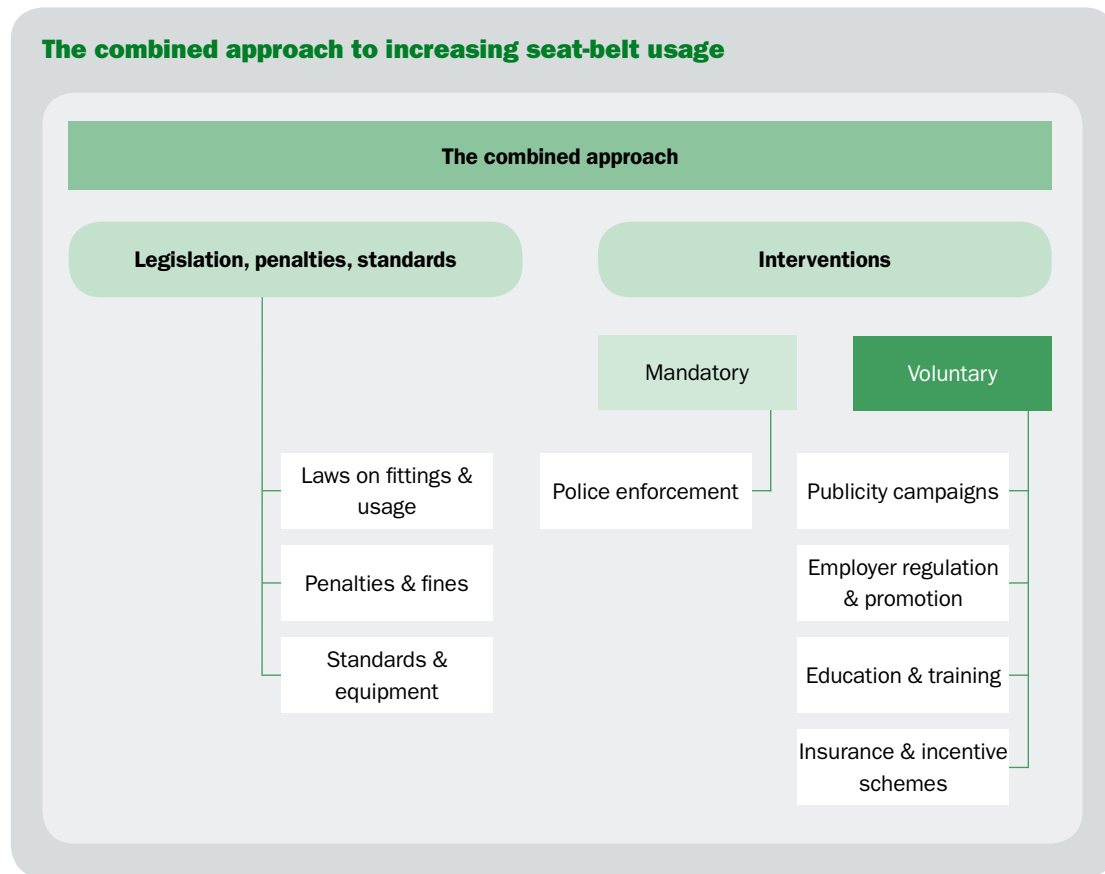
Consistent enforcement of seat-belt laws by the traffic police is one of the most effective methods of raising and maintaining high levels of wearing rates among vehicle occupants.

The primary objective of enforcement is to ensure that seat-belts are worn by all vehicle occupants on all roads at all times. The primary outcome of enforcement efforts is an increase in wearing rates, leading to a reduction in the number and severity of road crash injuries.

A checklist of enforcement activities might be as follows:

- Before starting an enforcement campaign government and other agencies should take the lead and make seat-belt use compulsory for their own staff; the public should be informed about enhanced enforcement of the seat-belt law, any changes to the law, and penalties for non-compliance.
- Strengthen law enforcement efforts by developing a strategic, intelligence-led approach, including increased visibility of enforcement; repetition of enforcement campaigns; strict and consistent enforcement; and well-publicized enforcement.
- Examine the capacity of the police force to increase enforcement efforts and explore how to integrate seat-belt enforcement into other enforcement activities.
- Consider phasing in police action after apprehending violators, such as starting by issuing warnings and explaining the new law before issuing fines.
- Consider nominating a “champion” in the police field to ensure ownership within the enforcement community and assist in ensuring the sustainability of seat-belt enforcement efforts.
- Ensure that penalties are processed quickly and equitably regardless of the status of those who have broken the law.
- Agree a minimum annual target for level of compliance based on benchmark surveys of seat-belt wearing.
- Agree a national and local seat-belt wearing target as a basis for obtaining commitment and the necessary resources.

4.5 Increasing usage: voluntary measures



Voluntary measures, including publicity campaigns, education and training, employer regulation and promotion schemes and insurance and incentive schemes, are critical in raising awareness and understanding of the benefits of using a seat-belt in support of legislation and enforcement efforts, encouraging voluntary use, and ultimately bringing about a sustainable long-term increase in seat-belt wearing rates.

4.6 Increasing usage: publicity campaigns

The publicity campaign is usually the most visible part of an initiative to raise seat-belt wearing rates and is often mistaken for the whole initiative itself. A typical publicity campaign could incorporate the components outlined in Table 4.6.

Table 4.6 Publicity campaign components

Campaign component	Reason for considering
Television advertising	Large target audience reach. Communicate short key message. Visual and aural communication. Not good for detailed messages.
Radio advertising	Large target audience reach. Short message. Message while driving through car radio. Aural communication.
Press advertising	Large target audience reach. Short message. Use as link to media public relations stories. Limited by literacy levels of audience. Can be basis of word-of-mouth communication.
Outdoor advertising, e.g. road signs, taxis, police vehicles, buses	Short message targeting the audience while using the road. Can reach a range of road users. Can reinforce and extend television and press images.
A project launch event	Broad public awareness, government exposure, free media exposure. Opportunity for two-way communication at media briefing. Can form the basis of word-of-mouth communication.
A series of public relations activities	More detailed explanations of initiative. In-depth analysis. Public credibility. Exposure for campaign figureheads. Can be linked to public events and community meetings. Provides opportunity for local participation and to “localize” campaign messages.
Media interviews, presentations and articles	Detailed explanations of initiative. Public credibility. Exposure for campaign figureheads. Opportunity for two-way communication.
A kit of activities to be undertaken in regional or local areas	Support for regional contributions, support for regional media and public relations activities. Opportunity to localize the issues. Potential to profile local figureheads. Basis of information for public or village meetings.
Activities designed and funded to operate in local communities	Provide information to support continuing local media coverage. Can establish local ownership of issues and support action at local levels.
Sponsorship of sporting and cultural events	Good for campaign positioning and branding. Can access high-profile and highly credible personnel. Link with specific road safety issue can be tenuous unless properly thought out.
Publicity for the enforcement activities undertaken	Enhance deterrent effect to generate short-term behaviour change. Powerful influence on immediate behaviour provided enforcement level is sufficient to be acknowledged by the public.
Interview key figures: police, celebrities and religious leaders	Exposure for campaign figureheads. Campaign credibility. Opportunity for two-way communication.
Community or school-based promotional events	Enhance public/target group interest. Opportunity for positive behaviour reinforcement. Link to school curriculum teaching on road safety for children. Opportunity for parents’ road behaviour to be influenced through their children. May be a weak influence if community culture does not support assertive children’s behaviour.



Road safety publicity refers to the whole amalgamation of activities designed to inform, advise, encourage and persuade the target audience to undertake a particular behaviour. On its own, publicity is of limited effectiveness, but it is an essential part of a coordinated programme in support of legislation.

A campaign that is undertaken only once – even if it includes dedicated enforcement – will not have a long-term sustainable impact on increasing seat-belt wearing; regular enforcement accompanied by a repetition of the key messages is needed.

Publicity campaigns are important and can be effective even if legislation requiring seat-belt use is not yet in place, through highlighting the humanitarian and economic benefits associated with the use of seat-belts. It is through the use of such campaigns that increased voluntary use is facilitated. A review of wearing rates in 15 countries showed that the average level of voluntary usage prior to the introduction of legislation was 25% of the population.

It is vital to the success of seat-belt legislation that the benefits are understood. By increasing awareness stakeholders are reducing any potential resistance that may occur to the introduction of legislation at a later date.

Conducting a publicity campaign will require expertise in marketing or advertising, development of specific campaign objectives, articulation of the campaign messages,

identification of the target audience, specifying a time frame for implementation and a methodology for evaluating the initiative.

4.6.1 Objectives of the campaign

A seat-belt campaign aims to persuade vehicle occupants to wear a seat-belt, and to modify their behaviour through acceptance of the proven socioeconomic and humanitarian benefits.

The most important aspect of any campaign is to have a clear idea of what the campaign is meant to achieve. The objectives may be stated in quantifiable terms. For instance, the public might be told that “by December 2008 it will be required by law that all car drivers and passengers wear a seat-belt”.

For a campaign to be successful, it is important to employ social marketing tools. Social marketing is an effort to impact the culture of a community in order to persuade it to accept, modify or abandon ideas, attitudes, practices and behaviour (15). For a campaign to follow the principles of social marketing:

- it must focus on a single-minded proposition;
- its execution must be distinctive;
- its target audience must be clearly defined.

Various objectives are possible, depending on the existing legislation and rate of seat-belt use. They include:

- to increase public awareness that seat-belts can prevent serious injury and death;
- to increase awareness that every driver and passenger is safer with a seat-belt;
- to encourage people to purchase cars with seat-belts fitted and to use them;
- to convey the message that use of a seat-belt is now mandatory;
- to inform people that seat-belt use is now being enforced, and to explain the penalties;
- to promote enforcement of the seat-belt laws by the police.

Each of these objectives should be quantifiable. It is therefore necessary first to ascertain:

- the current level of awareness of the safety value of seat-belts, their availability and cost, and the legal requirements for seat-belts (see section 4.6.2 on market research);
- the current level of seat-belt use, by both drivers and passengers, by seating position, in urban and rural areas;
- the current level of enforcement (see case study from Argentina).



CASE STUDY: “Let’s fight for life” seat-belt campaign, Argentina

Luchemos por la Vida (Let’s fight for life) was founded in 1990 with the aim of promoting seat-belt use in Argentina. Before starting the seat-belt campaign, a systematic observation of seat-belt use among drivers and front seat occupants in Buenos Aires was undertaken, and regular surveys have been carried out every year since. Observations were taken at different sites in the city, at both day and night times, on holidays and working days, and for different types of vehicles. At least 4000 vehicles were surveyed each time. Only 0.2% of car occupants were observed to be wearing a seat-belt in November 1990.

In March 1992, after a first and very simple campaign on radio and television, percentages went up to 3.1% for drivers and 2.2% for front seat passengers.

In July 1992 seat-belt use became a legal requirement in both front and rear seats and usage rose to 32% without any enforcement. The impact of the legislation was short lived due to the complete absence of enforcement. By July 1995 only 13% of drivers and 11% of front seat passengers were wearing seat-belts. A new law and campaign raised rates again to 32% for drivers and 30% for front seat passengers in April 1996, but again without enforcement rates declined to well below 20%.

Luchemos por la Vida launched a new campaign, “Let’s save 1100 lives by using the seat-belt”, in May 1999. The campaign used intense television and radio coverage based on the objections, myths and

false beliefs of the majority of the population regarding the use of seat-belts, and provided information on the consequences of not being buckled up in the case of an accident. There was also a campaign prompting people to write letters to the president, the governors and the city mayors stressing their responsibility for 1100 deaths each year due to lack of control of seat-belt use. Advertising at the roadside and at tollbooths on highways was used, and the campaign was helped by a high-profile accident in which a former president nearly died after being ejected from his car. The wearing rate for drivers rose to 27% in November 1999, but as before it gradually declined again to 22% in June 2004.

As a result of campaigns and lobbying of the authorities, enforcement was initiated in Buenos Aires in October 2004 with advertisements and strong police action. The effect was measured by Luchemos por la Vida and at the end of the first week rates were 86% for drivers and 83% for front seat passengers. A survey of drivers showed that 98% considered seat-belts to be useful in case of an accident, and 81% agreed with seat-belt enforcement.

Although the enforcement effort has not been sustained, wearing rates in March 2005 were still over 75%. Luchemos por la Vida attribute this to the awareness-raising campaigns that, over a long period of time, have led to the change that was initiated by the enforcement campaign becoming permanent and habitual (16).

4.6.2 Creating campaign messages

Before developing the communication messages for a seat-belt use campaign, the factors restricting seat-belt use need to be identified, through both local knowledge and market research. The key target audience also needs to be determined, for example front seat or rear seat vehicle occupants, or those employing child restraints (see section 2.2.2 on assessing seat-belt and child restraint wearing rates).

Market research is used to determine the target audience’s knowledge of legislation as well as the opinions, beliefs, fears and motivations of high-risk groups that are known to be involved in drink-drive crashes. A first step in this process is to identify the target audience involved and then collect information from them that is relevant for the campaign.

Diagnostic testing

The first step in developing campaign messages is to assemble a small group of individuals representing the main target group. The goal of discussions is to:

- identify and understand why these individuals do not use seat-belts;
- understand the incentives that might be used to change the attitude and behaviour of the target group.

Develop campaign messages and materials

On the basis of the information received from the diagnostic testing carried out with the target audience, a range of messages and campaign materials can be developed to encourage a change in thinking and behaviour in relation to seat-belt use. Preparation of these products is commonly undertaken by advertising agencies contracted by the road safety authorities.

The draft campaign messages and materials should then be tested with small groups of individuals representing the target audience by an independent market research agency contracted for this purpose. The agency that created the materials must not be allowed to market-test their own materials, as they are unlikely to be self-critical. The purpose of testing the materials is to determine the most effective message and method for communicating to the target audience, and changing their perception and behaviour in relation to seat-belt use.

The campaign message should:

- be simple, consistent and memorable;
- be appropriate to the conditions of the particular country, including its social and cultural standards;
- not cause offence to any group;
- be relevant to the target audience chosen, and not necessarily aim to apply to the whole population.

It is useful to make the message itself the “brand” for the campaign. The product being sold is “Wear a seat-belt”, not the government agency responsible for the campaign. Tailored and targeted messages often work best in road safety (2).



The central human and emotional message of the campaign (Por Amor use el Cinturón – 'For love use your seat-belt') was based around the concept of love and responsibility, with a campaign icon featuring a traffic sign with a heart secured by a seat belt.

Automobile Club of Costa Rica

4.6.3 Reaching the target audience

The target audience must interpret campaign messages as relevant to them.

Depending upon the budget, objectives and target audiences for the campaign, a range of media will usually be employed to convey its messages. Some media are more appropriate than others for a particular target group; for example, newspapers may be better for middle-aged people, cinema films for younger people and radio for those in rural areas. A competent advertising agency will be able to advise on the best way to reach different target audiences.

The campaign should adapt its approach for changing audiences, while keeping the main message consistent. The campaign, for instance, may initially operate in urban areas, or among younger people. Different approaches would then be needed to convey the same message to rural or older audiences.



CASE STUDY: **Seat-belt campaign targeting young people who are rear seat passengers, Poland**

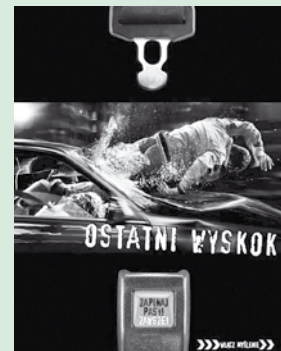
The first national seat-belt campaign in Poland started in the middle of September 2005. On the basis of research results showing that seat-belt wearing rates were lowest amongst young people sitting in rear seats the target group chosen was young people (18–24 years of age) and the message was addressed mainly to those sitting in the rear seat. Research showed that the main reasons why people did not buckle up were:

- they thought they could control the traffic situation and they believed that they were in control of the risk;
- they lacked the habit of wearing seat-belts.

The campaign objectives were to increase the wearing of seat-belts and to make wearing seat-belts a social norm by:

- building awareness that road crashes are a real and unpredictable hazard and that non-use of a seat-belt can cause death and serious injury;
- refuting false beliefs and myths related to seat-belts;
- creating the habit of wearing a seat-belt in the rear.

Evaluation results showed that 93% of the targeted audience, i.e. young people 18–24 years of age, was reached. The declared utilization rate of seat-belts in the back seat increased from 34% to 66%, while the observational study showed an overall growth in seat-belt use from 38% to 50% in the back, and from 74% to 84% in the front. A 10% decrease in fatalities was recorded in the campaign time, which is traditionally the period with the highest crash fatality rate in the country (17).



4.6.4 Creative concepts

Creativity within a publicity campaign is all too often overlooked. A review of publicity campaigns worldwide has highlighted a number of common creative elements that can potentially form the basis of future campaigns (Table 4.7).

Table 4.7 Common themes for improved creativity in road safety publicity campaigns

Common themes	Desired outcome
Shock tactics such as visuals of crash dummies; real-life representations (see note on shock tactics)	Emotional response to stimulus
Law enforcement	Moral decision. Fear factor: the desire not to be banned from driving, wanting to retain independence and status
Inconvenience (e.g. on-the-spot fines)	Lifestyle decision, not wanting a reduction in income
Awareness, education, ability to relate to oneself	Educational decision based on level of knowledge
Peer endorsement	Creating social awareness and acceptability through the use of high-profile figures such as sports stars or television personalities
Memory/recall	Subconscious, almost automatic decision
Frequency of message/call to action	Instant decision/compliance

Creativity applies not only to the concept but also to planning and choice of media, which will vary according to national setting and budget available. Market research should aim to indicate the types of media through which specific demographic groups can be reached, for example early morning radio for drivers on their way to work, with reminders through advertising boards at petrol stations and car parks.



Shock tactics

The use of shock tactics has been widely utilized in road safety publicity campaigns, based on the belief that high-impact images will make drivers relate emotionally to their responsibilities on the road. However, what is most likely to ensure the effectiveness of any road safety campaign is clear understanding and credibility of the message for the specified target audience.

Simply using shock tactics to deliver a message can accustom the target audience to the shock, and therefore each subsequent advertisement has to highlight more shocking images to have the same effect.

Cost can be a major factor in considering which media to use. Research has suggested that low-cost publicity can be just as effective as high-cost campaigns, provided that the target audience understands the message (18). More widespread dissemination of road safety messages can however be achieved through a large budget, although government and corporate assistance can reduce advertising costs significantly.

NOTE
Role model initiatives

Using selected role models can influence people to wear seat-belts before legislation is introduced. The particular role models chosen will depend on the group being targeted in the campaign. The target group could be young people, who usually make up a significant proportion of drivers and passengers involved in crashes. In this case, the role models publicly seen wearing seat-belts might be well-known singers, film or television stars or sports stars. For a different target group, the role models could be prominent professionals, doctors or successful business people. Young parents might be targeted with examples of celebrities whose children are using recommended child restraints.


CASE STUDY: Jordanian awareness-raising campaign

A Jordanian awareness-raising campaign chose to blanket the whole country through television, radio, newspapers, mosques and churches. This was particularly effective, increasing wearing rates by 47%. Television advertising can prove costly; however, in Jordan both television and some radio stations are government owned and airtime was not included in

the costs of the campaign. Three one-hour televised meetings were held, discussing the benefits of seat-belts, plus 50 30-second adverts. The most popular radio station was chosen to deliver road safety messages through programmes of general interest. These lasted longer than those on television (20).



CASE STUDY: **Seat-belt campaign, Sakhalin Island, Russia**

The Sakhalin Island seat-belt campaign is supported by the Sakhalin State Inspectorate for Traffic Safety (GIBDD) and Sakhalin Road Safety Partnership. The campaign is undertaken annually and monitoring of seat-belt wearing rates is undertaken regularly through observational studies and through data collected by the traffic police during driver checks and at the crash scene. Components of the project include education and awareness raising, enforcement and effectiveness assessment.



2005 seat-belt campaign

Before starting the development of this campaign, a detailed public opinion survey was undertaken on Sakhalin Island to identify the reasons that local residents chose not to wear a seat-belt. This was recognized as being of key importance in designing a campaign that would be effective in addressing incorrect assumptions and inaccurate beliefs, allowing the project team to tailor the initial campaign ideas and messages accordingly. Before the campaign launch, all campaign materials were thoroughly tested in a number of externally managed focus groups. This ensured that the materials and messages that had been developed would be effective in reaching their target audiences (and where they were not, the project team was able to make changes).

The campaign was implemented in two phases. First, an awareness campaign was launched with high-profile media coverage of key messages emphasizing why seat-belts should be worn and correcting false assumptions about seat-belts held by members of the public. Second, and most critically, an enforcement campaign was launched to reinforce the fact that the use of seat-belts was the law, and failure to use a seat-belt would be punishable by a fine. The project team identified that, although it was Russian law that seat-belts should be worn, seat-belt enforcement was not regarded as a high priority

of the GIBDD due to lack of enforcement officers. The head of the local GIBDD agreed to ensure that enforcement of seat-belt usage on Sakhalin Island would be intensified during the enforcement phase of the campaign.

Research conducted before and after the 2005 campaign showed an increase in wearing rates in urban areas (Yuzhno-Sakhalinsk) from 3.8% to 13.9% and on rural roads from 26.8% to 51.8%.

2006 seat-belt campaign

In an effort to bolster wearing rates a second campaign was launched in mid-2006. The project team evaluated lessons learned from the first campaign and chose to focus more effort on:

- ensuring consistent enforcement throughout the entire campaign period;
- creating stable positive opinions of the advantages of buckling up;
- reaching more people by using a larger range of mass media;
- implementing the campaign during the summer period, when crash rates are usually highest in the Sakhalin Oblast.

The geography of the 2006 campaign was expanded by conducting campaign launches in smaller communities. Video materials and radio clips were updated to reflect the summer season and higher level of enforcement. The campaign started with active communications in local media and lasted from May until the middle of November. Additional research was undertaken during and after the campaign to measure the effectiveness of the project and to study the opinion of the population with respect to the approach taken in conducting the campaign.

The public opinion survey showed that 86.7% of the population had seen campaign materials, and that the most effective means of communicating were television, radio and billboards.

The following measures proved particularly critical in developing and implementing two successful campaigns:

- winning high-level political support for the campaign;

Continues...

Continued from previous page

- engaging with local stakeholders representing diverse sectors;
- well-promoted and properly launched enforcement of traffic laws;
- professional development of campaign materials using focus groups;
- pre- and post-campaign data collection on wearing rates based on international good practice;
- pre-launch educational events for media and local traffic police to raise the awareness of these key stakeholders about the risks involved in not wearing a seat-belt;
- high-profile media coverage using local true stories;
- debrief of key stakeholders after the campaign.



Research conducted before and after the 2006 campaign showed an increase in wearing rates in urban areas (Yuzhno-Sakhalinsk) from 14.3% to 22.7% and on rural roads from 56.1% to 77.9% (19). Observational studies in 2007 showed wearing rates had increased to 64.8% prior to the 2007 campaign and jumped to 76.6% after the 2007 campaign.

4.6.5 Selecting an agency for the campaign

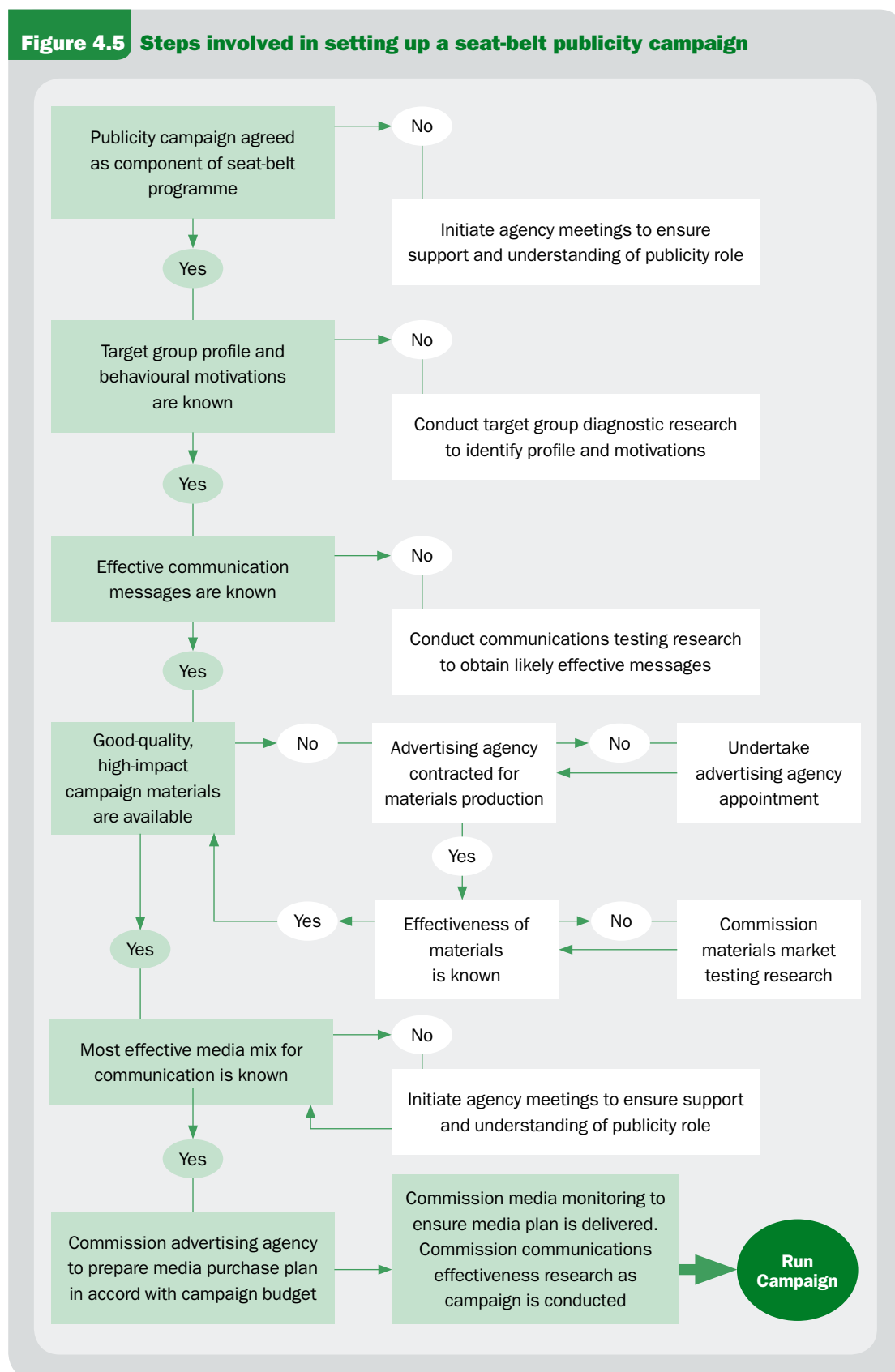
A successful publicity campaign may be carried out by qualified personnel within a government department, but usually needs the expertise of a professional marketing or advertising agency. Overall control of the campaign should, however, stay with the government agency responsible. The campaign may also require the services of a public relations agency and a research agency, unless the government agency can provide these services itself.

The first step in selecting an advertising agency is to issue a tendering document outlining the overall aims and objectives of the campaign, the time schedule and the budget. The purpose of this tendering document is to assess the ability of responding agencies to do the work. From their initial applications, a shortlist of agencies should be drawn up, based on:

- the agencies' previous experience with social marketing campaigns;
- their creative ability;
- their physical location;
- their media purchasing ability;
- their size.

The short-listed agencies are then asked to tender for the work by providing creative ideas, plans for media work and budgets.

The steps involved in setting up a seat-belt publicity campaign are illustrated in Figure 4.5.

Figure 4.5 Steps involved in setting up a seat-belt publicity campaign

4.6.6 Working with the media

The media – including the printed media, the broadcast media and the Internet – serve various functions in any public education campaign. They will be interested in and will cover the campaign itself – its objectives, contents and progress. They may support it, but they may equally be critical, to the extent even of running a counter-campaign. It is therefore important that the media are informed about a forthcoming campaign and that the reasons for the campaign are set out clearly and strongly.

An ongoing part of the campaign should be to keep the media regularly informed about its progress and how it is meeting its targets. This can be done either by the government agency or by an external public relations agency.

4.6.7 Campaign stages in relation to seat-belt legislation

The stages of a seat-belt publicity campaign in respect to related activities such as changes in the law and police enforcement should be carefully considered. Coordination among the initiatives is critical. The stages should include some or all of those indicated in Table 4.8, depending on the current situation of seat-belt legislation and enforcement.

Table 4.8 Campaign stages in relation to seat-belt legislation

Legislative situation	Publicity activity and objectives
No seat-belt legislation in place	Public education to encourage voluntary seat-belt use by: • explaining why wearing seat-belts is beneficial; • informing potential wearers about their availability and cost; • giving information on when seat-belt use will become compulsory.
New legislation adopted but not yet in effect	An advisory stage as the date for new regulations approaches to: • ensure the date set for the introduction of the new legislation is one that is easily remembered; • reinforce the importance of wearing seat-belts; • explain the penalties for failing to comply with the new regulations.
Legislation goes into effect	A marketing stage – probably the single most important stage – that should: • explain why wearing seat-belts is beneficial; • give further details on the consequences of not wearing seat-belts, both from the point of view of possible injury and of the risk of penalty fines; • reinforce the message for those who wear seat-belts only irregularly. <i>Note:</i> During this stage, it may be best to enforce the regulations with warnings only at first, though the campaign will become most effective when the regulations are fully enforced.
Legislation firmly in effect	Periodic but regular maintenance to: • reinforce the message for those who wear seat-belts; • remind those who have become lax in wearing seat-belts; • continue to explain the consequences of not wearing seat-belts. <i>Note:</i> Periodic marketing will reinforce a message, and is more cost effective than continuous marketing.



CASE STUDY: **Seat-belt wearing legislation and campaigns, United Kingdom**

Manufacturing legislation making it mandatory for cars built in Europe to have seat-belts fitted in the front was implemented in 1965. Despite the new legislation, wearing rates were low and in the early 1970s a series of commercials were filmed using a well-known celebrity highlighting the dangers of being thrown through a car windscreen. This advertising campaign lasted for over a decade, increasing awareness of the benefits of seat-belt use and preparing the ground for legislation in 1983 making it compulsory to wear seat-belts in the front seat.

Following legislation, front seat-belt wearing rates rose to over 90%, a level that has been consistently maintained. In 1989 it became compulsory for all children under the age of 14 years to wear seat-belts in the rear of a car, and compulsory rear seat-belt use was extended in 1991 to include all passengers. These were primary laws and have been constantly enforced.

Enforcement, education and publicity formed the basis of future campaigns to increase wearing rates, particularly amongst rear seat passengers and teenagers. Television and radio commercials were used to show the risk to unbelted passengers, targeting all adults and parents.

In 1998 only 43% of adults were wearing seat-belts in the rear and a new campaign was developed. Research showed that many front seat passengers

were killed each year by unbelted rear seat passengers colliding with them. A campaign idea based on conveying the message about being responsible for injuring someone else, and the degree of uncontrollable movement if unbelted at the time of a crash, was found to be a powerful message. As a result the “Julie” campaign, which showed a teenage boy being thrown forward and killing his mother, was developed. The campaign was highly successful, increasing agreement that unbelted rear seat passengers could “kill or seriously injure the driver” from 46% to 62%. Importantly, rear seat-belt wearing increased from 48% to 59% after the campaign. The advertisement continued to be shown until 2002, and by April 2006 the adult seat-belt wearing rate in the rear was 69%.

The latest television advertisement – “**Backward**” – shows what happens to three young men in a car crash when they are not belted in, then the sequence is rerun with them wearing seat-belts. The aim of the seat-belt campaign is to tell drivers and passengers of the importance of wearing a seat-belt both in the front and the back of a vehicle. This is based on the insight that the real crash happens inside the car (impact with the screen, dashboard and other passengers). The strategy also seeks to target short trips at low speeds in urban areas, as it is often on these types of journeys that drivers do not belt up (21).



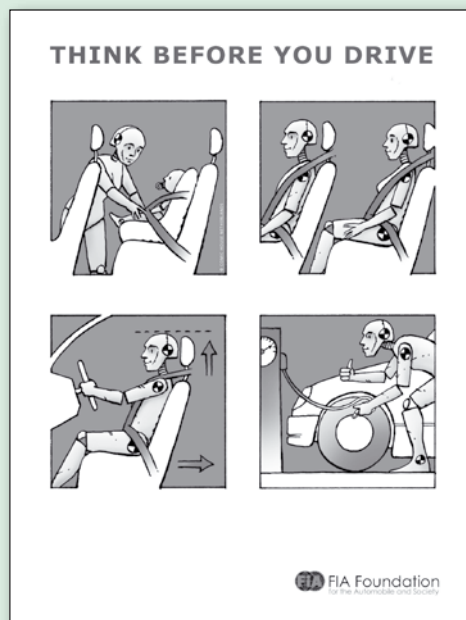
CASE STUDY: **Think Before You Drive** campaign, Peru

The Touring and Automobile Club of Peru launched the Think Before You Drive campaign on 29 September 2006. Campaign staff in dummy outfits took to the streets with the traffic police to remind motorists that the new seat-belt legislation was coming into force as of 1 October 2006.

This new legislation, which extended compulsory seat-belt wearing to the back seats, was the result of the Automobile Club's Por Amor seat-belt campaign, emulating the successful Por Amor Use el Cinturón campaign in Costa Rica in 2003–2005 (see case study, section 4.2.5).

A press conference was held with the many partners of the campaign, including the Head of Traffic Police and the Health Minister, and both gave the good example of buckling up on the club's seat-belt slide. The club demonstrated that in Peru, 3600 people die and 600 000 people are injured in road accidents each year. This leads to a great deal of suffering and at times financial distress among those who are left behind, but the country also suffers: the financial loss due to the accident toll is estimated at up to US\$ 1 billion per year. The club assisted the traffic police during their road checks on seat-belt use. On the first day of police enforcement 234 tickets were issued, 70% to motorists who for some reason had taken out the seat-belts that their cars were normally equipped with. Of the fines, 30% went to taxi drivers, who were also given a ticket if their passengers were not wearing a seat-belt. Most people waited

until the last minute to have seat-belts installed, which resulted in long queues at sales points and the doubling of prices within two weeks. As a result the Transport Ministry decided to delay phasing in installation of seat-belts in the back for some types of transport, such as intercity buses, until November (10).



4.6.8 Evaluating the campaign

Monitoring and evaluation is an integral element of all road safety campaigns. It is through the implementation of monitoring and evaluation techniques that stakeholders are able to determine the success or failure of a campaign, and therefore design future campaigns accordingly.

The primary outcome of a seat-belt campaign is seat-belts worn by all drivers and passengers. This outcome is best measured by regular, independently conducted, observational surveys, before, during and after the campaign. Ideally, surveys should take place at six-monthly intervals during the campaign, and annually once the campaign has reached its maintenance stage. The cost of surveys should be built into

the overall cost of the programme. Module 2 described methods for carrying out observational surveys.

The survey should be sufficiently large to identify significant differences between different age groups, men and women, drivers and front seat and rear seat passengers, cities and smaller towns, urban roads and highways, and different regions of the country. As differences are found in surveys, it may be necessary to adjust the campaign focus more towards those groups with lower seat-belt wearing rates.

Other less direct outcomes may also be measurable. These include knowledge and attitudes about seat-belt wearing, police ticketing rates and – where crash statistics are available – deaths and injuries among drivers and passengers of motor vehicles. Knowledge and attitudes are often slower to change but can be measured by regular, possibly annual, surveys conducted by interview. As with the observational surveys, these interview surveys should be able to detect differences between population groups. It is sometimes possible to use regular omnibus surveys by adding a number of questions relating to attitudes to seat-belt wearing and to other road safety measures. This can be very useful in providing wider information with which attitudes to safety can be correlated. Police and casualty data can also be useful, but they are subject to numerous external influences and may not accurately reflect the effect of the campaign.

4.7 Increasing usage: other voluntary measures

This section includes consideration of employer regulation and incentive schemes; education and training; and insurance and public incentive schemes.

4.7.1 Employer regulation and incentive schemes

Employers have a significant role to play in increasing seat-belt usage, especially in those countries where legislation and enforcement have not yet been widely implemented. Companies and government organizations can help save lives and injuries of both their employees and contractors by:

- fitting good quality seat-belts to company and contractor vehicles;
- making seat-belt wearing a company regulation both for work-related journeys and for staff commuting trips;
- including seat-belt fitting requirements and wearing rules in contracts with road transporters;
- carrying out regular checking of seat-belt usage by staff and contractors;
- providing incentives for compliance and penalties for non-compliance;

- informing and training staff and contractors on good driving practices, including seat-belt use;
- adopting comprehensive road safety management systems with road safety targets for which all staff, especially senior management, are held responsible.

For example, during a number of awareness-raising campaigns in Australia during the 1960s, some private sector organizations voluntarily equipped their fleet vehicles with seat-belts. This helped raise wearing levels from almost zero to 25%, despite the fact that installation of seat-belts in road vehicles was not common practice at that time (22). A similar initiative in India led by a leading multinational lubricant manufacturer (see case study) has benefited not only its own truck operations but also other companies who can now buy the safer cab and seat design.



CASE STUDY: **Private sector initiative, India**

A leading multinational lubricant manufacturer in India adopted an integrated safety management system to reduce road risks and achieve its goal of eliminating fatalities and serious road crashes. The organization typically had more than 500 vehicles on the road at any one time and these were largely driven by third-party contractors.

Over four years ago most of the trucks had wooden cabins and bench seats, which provided poor safety features and little occupant protection. These cabins were usually constructed by traditional coach builders and not by the original vehicle manufacturer.

To improve vehicle safety, the organization worked with vehicle manufacturers to develop a safe cabin as original equipment. This included improvements in all-round visibility, adjustable fitted seat-belts and adjustable seats for the driver and the driver's assistant.

In three years the organization has voluntarily introduced the new seats and fitted seat-belts in over 2000 trucks, and encourages transport contractors to purchase trucks with these cabin specifications as original equipment.



To raise seat-belt wearing levels, the organization has made seat-belt wearing mandatory as part of the contract agreements. Spot checks are carried out by the organization and penalties are issued for non-compliance. Regulation and compliance monitoring have been supported by a major engagement programme with transporters and drivers to ensure that they understand the reasoning behind seat-belt rules and how seat-belts help save lives. The organization also recognizes and rewards transporters and drivers for practising safe driving.

4.7.2 Education and training

Community education programmes on seat-belts are critical in raising awareness and understanding of the benefits of using a seat-belt, encouraging voluntary use and ultimately bringing about a sustainable long-term increase in seat-belt wearing rates.



Light Board from CECFAd Co Ltd

As with publicity campaigns, the educational process should never be viewed as short term. Constant reinforcement of the message and targeting of an ever-evolving audience are required in order to continually improve the trend in seat-belt wearing.

Education and public information programmes to encourage seat-belt use can:

- stimulate and reinforce behavioural change;
- increase public support;
- influence social norms, making seat-belt use more socially acceptable;
- create a supportive environment for the passage of laws and policies that increase seat-belt use.

There are a number of approaches that can be used to inform vehicle owners and occupants on the need to wear seat-belts, in addition to large national publicity campaigns. Some of the key options are shown in Table 4.9.

Table 4.9 Key education and training approaches

Actor	Approaches
Health personnel and officials	Provide literature and advice, for instance to new parents on the need to use child restraints, or to patients who have been involved in traffic crashes, or through health promotion presentations or exhibitions.
Manufacturers	Provide guidance on the use of safety features within a vehicle, e.g. information within the vehicle manual informing the vehicle owner how to identify damage or faults to a seat-belt that indicate that replacement is required. Commercial marketing by vehicle manufacturers and retailers, particularly for child restraints, can play an important role in increasing voluntary seat-belt use.
Road safety personnel	Have the expertise to increase the knowledge of the whole community, using a wide range of methods. They should also consider providing resources and holding special events educating vehicle occupants about how to identify faults and maintain seat-belts.
Parents, guardians, teachers via the school curriculum, and the media	Getting messages across about the benefits of seat-belt wearing early in life is obviously desirable. This can be particularly beneficial as informed children can use their knowledge to influence their parents' behaviour. Once children have increased their knowledge and adopted good safe practice, they may well criticize parents or guardians when they exhibit poor safety behaviour themselves on the road (e.g. not fastening their seat-belts before driving off). While research on the effectiveness of road safety education in changing behaviour has been inconclusive, what has become clear is that educational approaches that concentrate only on teaching facts are unlikely to be successful. There has to be a comprehensive package containing several approaches. Lesson plans provided for teachers are a way of encouraging schools to educate their pupils on the benefits of seat-belt wearing. Appendix 6 shows an example of a lesson plan for use in secondary schools. Stakeholders should also ensure that adequate information is provided to parents on the dangers of using an inappropriate restraint for children.
Driver training schools	Include information on seat-belt use in their curriculum. Instruction should include information on laws pertaining to seat-belts and child restraints, penalties for non-use and the social and economic benefits of properly using seat-belts and child restraints.

A number of case studies are presented below to show examples of educational approaches in different countries with information about their impact, if available.



CASE STUDY: **Education and discount schemes for infant restraints, Greece**

A study of a maternity hospital-based infant restraint loan scheme in Greece found that 82% of parents who were provided with an infant restraint for six months for a small fee had purchased the next-level restraint by the time they returned the loaned one

(23). However, another study in Greece showed that the target group did not always take up the scheme, particularly in disadvantaged areas where the need was greatest (24).



CASE STUDY: **Educational leaflet, India**

The information leaflet shown below, distributed in India, concentrates on educating vehicle occupants of the importance of wearing a seat-belt. While many leaflets highlight the law regarding wearing, it is just as important to explain why one should wear a seat-belt. Here, the vehicle occupant is informed of the substantial forces involved in a 50 km/h crash due to severe deceleration of the vehicle. It explains how a seat-belt can minimize the injury sustained by a vehicle occupant if they are wearing a seat-belt.

It also uses pictures (top right) to demonstrate how to fit a seat-belt. Vehicle occupants should push the lap part of the seat-belt down onto their hips so

that it does not ride onto the abdomen. They should then pull the diagonal section up to minimize slack. "The diagonal section must stretch from the anchor point over the centre of the occupant's shoulder avoiding contact with the neck."

If you are involved in an accident at 30mph your body weight increases by approximately 25 to 30 times. Therefore, if you weigh 140lbs/10stones, in a 30mph accident you will weigh between 3500lbs/250st. and 4200lbs/300st. - the weight of an ELEPHANT!!



As a result of the very fast de-acceleration of the vehicle, the energy transfers from the car to the occupants. This means that the initial speed of each occupant is that which the vehicle was travelling on impact. In this case all occupants would travel forward at an initial speed of 30mph.



This force/weight travelling at this speed would need a serious device to reduce and minimise serious injury and/or potential death. Luckily we have one. It is called the SEAT BELT! Seat belts can reduce the severity of injury by four fifths compared to the severity of injury if you are not wearing your seat belt in an identical accident.

Your seat belt is designed to stretch, it is ELASTIC. This allows it to restrain your body over a short distance and time. This is necessary because if it stopped you instantly, it could cause serious injury. For example, throw an egg into the air and catch it without smashing it. To avoid breaking it we cushion the egg by lowering our hands, slowly reducing its speed over a few inches. If your hands stayed firm stopping the egg instantly you would now be clearing up the mess. If your seat belt stopped you instantly, you could have a similar problem to the egg.

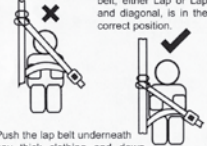


If involved in an accident (even a minor accident), all seat belts used should be replaced. WHY? After cushioning the force from car occupants in an accident, the seat belt could have stretched too much. It then becomes plastic. This means that instead of cushioning your body next time you have an accident, it will act more like a band of steel. The result is similar to being stopped instantly as described above. Also the webbing has been weakened and may snap when you need it most.



Do not replace with second hand seat belts that you do not know the full history of. The consequences could be catastrophic.

Ensure that your seat belt, either Lap or Lap and diagonal, is in the correct position.



Push the lap belt underneath any thick clothing and down onto the hips so that it does not come across the abdomen. Pull tight to eliminate slack.

The diagonal must stretch from the anchorage point over the centre of the occupants shoulder avoiding contact with the neck. Height adjusters can be used to avoid such contact especially with young people.



All seat belts are subject to MOT testing. They will fail if:

- They are frayed from wear and tear
- There is a cut or nick causing fibres to separate
- There is damage to the buckle
- There is a weak connection to the vehicle
- There is a hole in the webbing regardless of size



CASE STUDY: **Educational approaches to increase knowledge of the benefits of seat-belt wearing**

The pictures below show devices that have been used to educate vehicle occupants on the benefits of wearing a seat-belt by allowing participants to experience a simulated minor crash (5 km/h). Pictured below is the “seat-belt convincer”, used by the Japan Automobile Federation. This has helped to raise seat-belt use from 62% to 84% in Japan during the last decade (Japan Automobile Federation).



Pictured above is a seat-belt sled, a device that can be used to convince vehicle occupants of the need to wear a seat-belt before the introduction of legislation. It is an ideal publicity tool for the involvement of celebrities and politicians (FIA Foundation).



CASE STUDY: **Increasing seat-belt and restraint use by children, United Kingdom**

In Manchester, United Kingdom, a campaign where police targeted schools to promote wearing of seat-belts and child restraints resulted in a rise of 20% in use of seat-belts. A campaign in Ireland in primary schools raised seat-belt awareness by a scheme that encouraged children in the first and second years of school to take the “seat-belt sheriff pledge”, by which they promise to tell all car occupants to buckle up

before driving. The campaign also included a road safety competition.

Alongside formal education in schools, peer education is also often effective. One study, using children as educators of their peers, found that persuasive arguments given by older children can significantly influence the behaviour of younger children (25).

4.7.3 Insurance and public incentive schemes

The motor insurance industry has the opportunity to play a key role in increasing road safety within a country. For example, motor insurance companies can encourage the wearing of seat-belts by making it clear in the wording of their policies that crash compensation can be reduced significantly if it is established that a vehicle occupant was not wearing a seat-belt at the time of a crash. This can be applied to private and company policies. Insurance companies can also promote seat-belt wearing by

supporting advertising and publicity campaigns. The effectiveness of seat-belt clauses will be limited by how well the insurance system is working, the extent of standard cover and compensation provided for victims of crashes, and how well insurance clients are informed about the clause.

NOTE**Reduced compensation due to non-use of seat-belts**

In the United Kingdom, the level of personal injury claims has reduced since the recognition by the courts of “contributory negligence” by the injured party’s failure to wear a seat-belt. In *Froom vs. Butcher* (1975) it was shown that the claimant’s injuries would have been reduced by 25% had they been wearing a seat-belt, and as such their compensation was reduced by 15%. *Hitchens vs. Berkshire CC* (2000) set a precedent by reducing the claimant’s compensation by 50% after it was found that they were not wearing a seat-belt.

4.8 How to ensure an appropriate post-crash response

While the primary aim of a seat-belt programme will be to increase seat-belt use, it is also important for those planning the programme to consider the response provided in the event of a crash (whether or not a seat-belt is worn by the vehicle user). A quick and appropriate rescue and medical response to the victim of a crash may prevent a fatality, or reduce the severity of the injury suffered. Thus, those designing a programme may want to consider both the appropriate rescue and first-aid response that is likely to be given at the scene of the crash and the preparedness of the formal medical services that will deal with victims of motor vehicle crashes.

Being involved in a crash can result in life-threatening injuries, including severe wounds to the head, chest and limbs that might also lead to unconsciousness and heavy blood loss. Following a crash, skilled rescue from the vehicle and provision of first aid and immediate acute care can make the difference between the crash victim’s survival or death, and can help reduce the consequences of injuries (see Box 4.8). Immediate on-the-scene assistance is of major importance, especially if the emergency services are absent or delayed, and can be encouraged in various ways.

Laws and regulations should be introduced promoting good-quality first aid, including the following:

- a law removing the threat of litigation against those giving first aid. Many countries provide legal immunity from charges of negligence against a bystander attempting, in good faith, to help a victim (“good Samaritan law”);

- the mandatory inclusion of first-aid knowledge, skills and a simple understanding of scene safety in the requirements for obtaining a driving licence or certificate;
- a requirement for vehicles to carry a first-aid kit;
- an incentive for manufacturers or sales people of vehicles to also provide a first-aid kit, or to support the participation of the buyer in a first-aid training course.

BOX 4.8: Ensuring that the emergency medical services are prepared

Setting up an emergency medical services (EMS) system may not be feasible for many countries, but alternative pre-hospital care arrangements can be developed.

The primary prevention of any disease or injury is an overriding priority. Many lives can also be saved following an injury through proper trauma care. This is especially the case in developing countries, where there are high fatality rates from potentially non-life-threatening injuries.

Trauma care, in both pre-hospital and hospital settings, requires speedy and appropriate action by trained personnel, with proper supplies and equipment. Improving trauma systems has been shown to lower the mortality rate in all treated trauma patients by between 15% and 20% and to cut the number of preventable deaths by over 50%.

Several recent publications provide technical details on how to improve trauma care. Two published by WHO are strongly recommended: *Guidelines for essential trauma care* (26) and *Pre-hospital trauma care systems* (27).

Pre-hospital care

The pre-hospital stage is an important one to target in efforts to cut the number of road traffic deaths. The care given will depend on the services that exist.

Situations where no formal EMS exists

A “formal” system of EMS is usually one with ambulances and trained personnel who work in an agency with some supervision and with a network of communications. Where no formal EMS exists, governments should make alternative arrangements to provide pre-hospital care. Ways can be found to build on existing informal systems and harness community resources, such as training members of the public in basic first aid, scene safety and simple rescue techniques. Setting up formal EMS systems in urban areas and along major interurban roadways should also be explored. Cost should be a consideration, given the high cost of these systems.

Strengthening existing intervention systems: EMS systems and rescue

Many EMS systems could be strengthened in a number of ways, for example by establishing a regulatory agency to promote minimum standards for the delivery of prompt, high-quality and equitable pre-hospital care; by streamlining communication between sites where calls are received (such as alarm centres) and the sites of ambulance dispatch, as well as between different ambulance services; and by keeping good records on people cared for by the EMS, so as to monitor and improve the quality of care.

Essential trauma care

Improvements in trauma care need not necessarily involve high-cost, high-technology equipment. Much can be accomplished in an affordable and sustainable way through better planning and organization.

The essential trauma care services and the resources required for them can be promoted in several ways, including through needs assessments of trauma care requirements; training in trauma care, provided in appropriate educational settings; quality improvement programmes that consider the entire trauma facility setting; and the inspection of trauma facilities (27).

Rehabilitation

Many of those who survive injury face disabilities that limit their physical functions. Many of these consequences are avoidable and can be reduced by improving rehabilitation services. Rehabilitation services are an essential element of trauma care, and can be improved by conducting more in-depth needs assessments for injury-related rehabilitation, by strengthening the capabilities of national rehabilitation programmes, and by integrating the recommendations of World Health Assembly Resolution WHA58.23 and the recommendations on rehabilitation in the *Guidelines for essential trauma care* (26) into a country's health policy.

4.8.1 Seat-belts and injuries

Seat-belts and child restraints may produce injuries. Although a seat-belt holds the body in place on the seat, it cannot prevent the head from being thrown around during a collision. Emergency personnel should be aware that a belted occupant could have sustained a neck injury and manage them accordingly.

The place where the seat-belt makes contact with the body during a collision may also result in minor injuries such as bruising (“the seat-belt sign”) or more serious problems such as broken ribs. However, it is highly probable that the injuries that the belted occupant would have sustained had they been unbelted would have been much more severe.

Children who are restrained in the rear of a vehicle with two-point lap belts can, under certain circumstances, sustain abdominal or lumbar spine injuries during a collisions – the so called “seat-belt syndrome”. Although most new vehicles are now equipped with three-point lap and diagonal seat-belts in all seating positions to prevent this problem, it is important that emergency personnel recognize incidents where occupants have used lap belts (mechanisms of injury).

4.8.2 Seat-belt removal

Following a collision it is important to remove the seat-belt from around a casualty as soon as possible. By doing so, rescuers will help to protect the casualty from receiving secondary injuries and to prepare the casualty for removal. Prompt removal of the seat-belt will help:

- eliminate restrictions to breathing or circulation;
- protect victims from further injury due to accidental activation of seat-belt pretensioners;
- allow safe movement of the casualty during cutting or spreading operations in the vicinity of seat-belt anchor points.

In addition, by removing the seat-belt, emergency personnel are reducing constraints placed on the casualty, which in turn enables them to remove casualties quickly if their condition deteriorates.

There are however times when the seat-belt must not be removed until the casualty is supported. These include where the casualty is suspended by the seat-belt in incidents where the vehicle has come to rest on its roof or its side (see related notes).

NOTE**Vehicle on its side**

At incidents where the casualty is on the side of the vehicle that is nearest to the ground suspension by seat-belts is less likely to occur, and therefore in these circumstances seat-belts can be removed or cut. Where the casualty is on the upper side of the vehicle and suspended by the seat-belt then specific actions must be considered. Once the vehicle has been stabilized and it is safe to do so casualty carers should enter the vehicle to treat and support the casualty. The easiest method to effect a safe rescue from this type of incident is to fold down the vehicles roof. It is essential when carrying out this operation that the upper seat-belt anchor points are taken into consideration, and that they are not affected by cutting or spreading operations.

NOTE**Vehicle on its roof**

Where a casualty is suspended by the seat-belt in an overturned vehicle, the consideration here is to create as much space within the vehicle by opening or removing doors and winding front seatbacks up. By doing so a greater amount of space will be created inside the vehicle to allow as many carers and rescuers as possible around the casualty to allow support and then a controlled lower following release or cutting of the seat-belt.

BOX 4.9: Seat-belt removal

As soon as possible arrangements should be made to release or remove the seat-belt.

The easiest method is to unclip the seat-belt from the anchor point. Persons assisting with this must ensure that the casualty is not being supported by the seat-belt. They must also ensure that they do not put themselves at risk by placing themselves within the deployment path of any airbags that are present.

Once the seat-belt has been unclipped, totally remove it from the casualty and place it out of the way to prevent trip/snagging hazards.



Where there is a need to cut the seat belt, again ensure that the casualty is not being supported by the seat belt.

The easiest method is to cut the belt in two places, in the centre of the diagonal and on the lap belt portion. By doing so this will prevent unnecessary pulling and tugging of the belt against the casualty as it is removed.

First support the casualty by hand and cut the diagonal portion of the belt as shown. It is best to use a safety seat-belt cutter where possible.



Once the diagonal is cut, the lap portion of the seat-belt should now be cut, again using a safety seat-belt cutter.

Once both cuts are complete totally remove remaining belt portions from the casualty and place out of the way to prevent trip/snagging hazards.

Note: On all occasions where seat-belts have been removed this information must be passed to both medical personnel, to assist with identifying mechanisms of injury, and police personnel, to confirm adherence to local laws.

Summary

This module provides an overview of the steps necessary to design an effective programme aimed at increasing seat-belt use, in turn decreasing serious injuries and fatalities amongst drivers and passengers. As stressed throughout the module, an effective programme depends on a combined approach using legislation, standards, education and enforcement.

Appropriate legislation is an important step to increasing seat-belt use. An initial assessment of the current legislative situation will help decide whether a new law is needed or if a revision to an existing law would be sufficient. It is important to identify how, when and where the new law will be implemented. Legislation should be promoted by the highest levels of government to ensure that it has the support of enforcement agencies and a proper legitimacy among the public.

Standards for seat-belts should be developed to ensure access to quality safety equipment. Standards – of design and materials used – should be set so as to give vehicle occupants a high level of protection in the event of a crash.

The fact remains that any standard adopted to increase the safety of vehicle occupants is better than none. However, in order to provide consistency and a coordinated approach to raising the standard of seat-belts, it is recommended that countries adopt the uniform technical prescriptions outlined by the World Forum for Harmonization of Vehicle Regulations.

A system should also be implemented that ensures regular independent testing, assessing wear and damage of seat-belts and their components using pass and fail criteria. Guidance should be provided to both vehicle owners and vehicle inspectors on assessing wear and damage of seat-belts.

To aid the process of encouraging vehicle occupants to wear seat-belts, organizations should be convinced of the need to play a proactive role in the installation of seat-belts in fleet vehicles. This will result in an improvement in road safety overall whilst achieving health and safety objectives.

Both voluntary and mandatory measures can be used to increase compliance with a seat-belt law. Indeed, continuous and fair enforcement of the law is essential for raising rates to a significant level. This calls for a strong commitment from both the government and the enforcement agency. Existing enforcement agencies should be evaluated to see if their capacities need to be increased. A plan for penalizing motorists who break the law on seat-belt use should be devised. Penalties can take the form of warnings, fines or the suspension of licences.

Together with legislation and enforcement, a well-designed marketing and publicity campaign is essential for the success of a seat-belt use programme. To meet these objectives, a good marketing or advertising agency may need to be taken on to

create an effective communication campaign. Communication should be aimed at motorists not using seat-belts, as well as at a secondary audience with the potential to influence non-users. The messages should be simple, consistent and memorable, and appropriate to the social and cultural standards of a particular country.

There is an important role for public education, school education and peer education among young people. Educational programmes, combined with other activities, can help shift behavioural norms towards making seat-belt use more acceptable.

When designing a seat-belt use programme, practitioners should consider the post-crash response to crash injuries. This involves addressing the appropriateness of first-aid services, and examining the capacity for provision of pre-hospital care, essential trauma care and rehabilitation services to assist crash victims.

Table 4.10 summarizes the main steps in the process of implementing a seat-belt programme.

Table 4.10 Checklist for designing and implementing a seat-belt programme

Step	Components
Implementing overall seat-belt wearing programme	• Assessment of seat-belt use • Identification of problem • Selection of objectives • Selection of corresponding activities
Developing legislation, creating a penalty system, and developing or improving standards	• Consideration of institutional or cultural constraints • Selection of objectives • Drafting of legislation • Creating a penalty system • Approval of legislation • Implementation of legislation
Developing an enforcement strategy	• Assessment of capacity to enforce • Increasing policy capacity if necessary • Training police in enforcement
Increasing the voluntary use of seat-belts by the public	• Develop and implement a publicity campaign: – Set the objectives, targets and performance indicators for the campaign – Select an agency for the campaign – Create campaign messages and select the creative concept that will reach the target audience – Consider how to best incorporate and work with the media – Map out campaign stages in relation to seat-belt legislation and strengthened enforcement by the police – Carry out and evaluate the campaign • Consider developing and encouraging other voluntary approaches, including: – Engaging employers in increasing seat-belt usage among staff and contractors through employee regulation and incentive schemes – Implementing public education and training programmes to reach diverse segments of the public, such as children and new drivers – Engaging the insurance sector in proactive schemes to encourage seat-belt usage
Ensuring appropriate response at and after scene of the crash	• Encourage appropriate first aid to victims of crashes through legal framework and delivery of first-aid education programmes • Consider the pre-hospital care, essential trauma care and rehabilitation services that are required and existing capacity to respond to these needs • Train and equip rescuers to ensure the prompt and safe removal of victims unable to remove their seat-belts

References

1. Broughton J. *Restraint use by car occupants, 1982–1989*. Research Report 289. Crowthorne, United Kingdom, TRL Ltd, 1990.
2. Lonero L, Clinton K, Sleet DA. Behavior change interventions in road safety. In: Gielen AC, Sleet DA, DiClemente R, eds. *Injury and violence prevention: behavior change theories, methods and applications*. San Francisco, California, Jossey-Bass, 2006:213–233.
3. *Promoting seat belt use*. ETSC Fact Sheet number 12, April 2006 (http://www.etsc.be/documents/Fact_Sheet_Seat_Belt_Use_2006.pdf, accessed 14 November 2008). Updated data provided by l'Observatoire national interministériel de sécurité routière, 2008.
4. *Seat belt campaign toolkit*. London, FIA Foundation, May 2004 (<http://www.fiafoundation.org/news/archive/2004/Pages/Seatbeltcampaigntoolkit.aspx>, accessed 20 October 2008).
5. Pinder M. Changes made to seat belt law. *Bahama Journal*, 15 March 2007.
6. *Agreement concerning the adoption of uniform technical prescriptions for wheeled vehicles, equipment and parts which can be fitted and/or be used on wheeled vehicles and the conditions for reciprocal recognition of approvals granted on the basis of these prescriptions*. Revision 2. Geneva, United Nations Economic Commission for Europe, Inland Transport Committee, 1995 (<http://www.unece.org/trans/main/wp29/wp29regs.html>, accessed 14 November 2008).
7. *UNECE Regulation 14, Revision 2: safety-belt anchorages*. Geneva, United Nations, 1970 (www.unece.org/trans/main/wp29/wp29regs1-20.html, accessed 4 November 2008).
8. *UNECE Regulation 16, Revision 4: safety-belts and restraint systems*. Geneva, United Nations, 1970 (www.unece.org/trans/main/wp29/wp29regs1-20.html, accessed 4 November 2008).
9. *UNECE Regulation 44, Revision 1: restraining devices for child occupants of power driven vehicles (child restraint system)*. Geneva, United Nations, 1981 (www.unece.org/trans/main/wp29/wp29regs41-60.html, accessed 4 November 2008).
10. *Recommendations for anchoring of seat belt assemblies*. Appendix ZD of AS/NZS 2596:2003.
11. *Compliance cost assessment: seat belts in coaches and minibuses*. London, United Kingdom, Department for Transport, 1994.
12. Bylund P-O, Björnstig U. *Use of seat-belts in cars with different seat-belt reminder systems: a study of injured car drivers*. AAAM 45th Annual Conference, 24–26 September 2001.
13. Williams AF et al. Buckle up now! An enforcement program to achieve high belt use. *Journal of Safety Research*. 2000, 31(4).
14. *Primary enforcement saves lives: the case for upgrading secondary safety belt laws*. National Highway Traffic Safety Administration, 2006 (<http://www.nhtsa.dot.gov/people/injury/enforce/PrimaryEnforcement/index.htm>, accessed 14 November 2008).
15. Van Rooyen P. *Principles of social marketing: the Saatchi worldwide experience*. Marketing Traffic Safety: VIth World Congress of the International Road Safety Organization, 3–6 October 1994, Cape Town, South Africa.
16. Silveira AJ. *Seat-belt use in Buenos Aires, Argentina: a 14-year-old struggle*. Luchemos por la Vida. Paper presented at the International Conference on Traffic Safety on Four Continents, Warsaw, October 2005.
17. *Polish seat belt campaign*. Krajowa Rada Bezpieczeństwa Rucha Drogowego, 2006.
18. Donovan RJ, Jalleh G, Henley N. *Effective road safety advertising*. Nedlands, Australia, Road Accident Prevention Research Unit, 1996.

19. *Seat belt campaign*. Global Road Safety Partnership and Sakhalin Energy Investment Company Ltd, 2007 (<http://www.grsproadsafety.org/?pageid=321&projectid=61#61>, accessed 4 November 2008).
20. Tarawneh MS, Al-Balbissi AH, Tarawneh TM. The effectiveness on seat belt use in Jordan of a public education campaign. *Journal of Traffic Medicine*, 2001, 29(3-4):30-36.
21. Department for Transport, London, United Kingdom (www.dft.gov.uk, accessed 4 November 2008).
22. Milne PW. *Fitting and wearing of seat belts in Australia: the history of a successful countermeasure*. Canberra, Australia, Australian Government Publishing Service, 1985.
23. Kedikoglou S et al. A maternity hospital-based infant car-restraint loan scheme: public health and economic evaluation of an intervention for the reduction of road traffic injuries. *Scandinavian Journal of Public Health*, 2005, 33(1):42-49.
24. Dedoukou X et al. Evaluation of an infant car restraints loan scheme in Athens, Greece. In: *Conference proceedings. What works in child injury prevention: bridging the gap between research and practice*. Sintra, Portugal, 10-12 October, 2002.
25. Morrongiello B, Bradley MDM. Sibling power: influence of older siblings' persuasive appeals on younger siblings' judgements about risk taking behaviours. *Injury Prevention*, 1997, 3:23-28.
26. Mock CN et al. *Guidelines for essential trauma care*. Geneva, World Health Organization, 2002.
27. Sasser S et al. *Pre-hospital trauma care systems*. Geneva, World Health Organization, 2005.

