

Harm Minimisation for Victims of Road Trauma.

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ABSTRACT

In light of the introduction of compulsory seat belt use, random alcohol breath testing and speed reduction strategies, harm minimisation for victims of road trauma may be an appropriate strategy for a further reduction in the road toll. Research publications were sought to identify studies of the number of fatalities that may have been avoided by early intervention, research on legislation regarding “Good Samaritan” protection and a legal requirement to assist injured crash victims, and research either discussing strategies or making recommendations for reducing roadside death by early intervention. This review attempts to highlight the most pertinent issues and draws out the major arguments from the research currently available. Recommendations are put forward to develop and implement a first aid strategy to reduce the number of deaths that may have been avoided had basic life-saving first aid been applied at the crash scene.

1. INTRODUCTION

The State of Queensland has a large land-mass that includes a considerable portion of rural and remote travel. A population of 3,512,356 as at 1999 (Statistics Queensland, 2000) enjoys the use of over 2.2 million vehicles on register and can drive long distances between townships. Because of the distances between rural townships, the response times for the Queensland Ambulance Service (QAS) vary considerably. In the 1998/99 financial year, the QAS responded to 3,662 rural motor vehicle accidents in an average time of 15.6 minutes (extract from the Ambulance Integrated Management Systems database, Hayes, 2000; personal communication). This is quite a short average response time given the vast distances that need to be covered by the service. However, it is the first few minutes immediately following the crash that have been shown to be crucial to those suffering from blocked airways.

Statistics were obtained from Queensland Department of Transport (Nolan, 2000; personal communication) for all urban and rural crashes from 01/01/1995 to 31/12/1998 (4 years). Data was based on the criteria of having to occur on a public road, that a person was injured, or property damage was in excess of \$2,500. There were a total of 64,993 urban crashes, with 692 fatalities and 10,211 hospitalisation injuries as a result. For rural areas, there were 16,081 crashes, with 632 fatalities and 3,844 hospitalisation injuries. Whilst there are considerably more crashes in urban areas, a higher ratio of fatalities and hospitalisations occur when crashes happen in rural areas. For example, 3.9% of the recorded rural crashes resulted in a fatality and 23.9% were hospitalised, whereas only 1.1% of urban crashes resulted in a fatality and 15.7% led to hospitalisation of an injured victim. It is interesting to speculate at how many victims may still be alive, had early life-saving first aid been offered by passing motorists.

There is considerable pain and suffering at the loss of a human life. The Queensland community will also bear a high cost for each fatal and injury crash. Mabbott and Swadling (1998) reviewed accident costing in Australia and arrived at average costs (in 1997-dollar terms) for fatal and hospitalisation injuries for use in accident countermeasure evaluation. The average cost of a fatality was \$823,694, while the cost of a hospitalisation was \$150,951. Thus, it stands to reason that for each fatality that could be reduced to a hospitalisation injury, the Queensland community would realise a saving of approximately \$672,000 and the loss of a loved one.

In the 1998/99 financial year, 46,481 first aid certificates were issued to people in Queensland by the Queensland Ambulance Service (QAS, 2000). This amounts to around 1.32% of the Queensland population and is thought to be just under half of all first aid training provided in Queensland (Parmenter, 2000; personal communication). The Queensland Department of Transport issued 52,038 “A class” licenses in the same financial year (Milledge, 2000; personal communication), a further 1.48% of the Queensland population. Proponents of compulsory first aid training would see this as an opportunity to increase the percentage of the Queensland population holding first aid certificates.

2. REVIEW OF THE LITERATURE

2.1 Reducing the number of fatalities.

Gilroy (1985) conducted a study to determine whether many of the people dying from road traffic accidents before reaching hospital were doing so as a result of remedial lesions. It should be noted that the review preceded the introduction of compulsory seat belt use and the resulting injuries of road trauma may be likely to change. The review showed that when death due to a road traffic accident occurs before arrival at hospital, it is usually as a result of overwhelming injury. The author inferred from these results that roadside assistance should aim primarily to help those already reaching hospital alive to do so in a better condition.

Gilroy discusses 11 cases whereby the victims died from less severe head injuries and states that an improvement may have been achieved with maintenance of clear airways. A similar conclusion was reached by Walpole (1984) when he stated: “*Head injuries are a significant cause of morbidity and mortality and secondary brain damage from hypoxia or inhalation can be prevented*” (p 249).

Hussain and Redmond (1994) conducted a retrospective study of all deaths from accidental injury between January 1987 and December 1990 in North Staffordshire. More than half of the victims received their injuries through a road traffic accident. They obtained a full record of each coronial inquest, details of the accident and events that led to the discovery of the body. The objective of the study was to determine what proportion of fatalities, at the scene of the accident and before reaching hospital, were preventable by early intervention.

In 46 cases the ISS score (and age) indicated that the patient had severe injuries but death was not inevitable and there was probably less than a 50% likelihood of dying. In 16 of these cases, a delay occurred before the victim was found and in 30, the accident was witnessed but no attempt at first aid or resuscitation at the scene was offered. Hussain and Redmond (1994) concluded that at least 60 people who died before reaching hospital had injuries that were survivable. Up to 85% of those people may have died due to airway obstruction. They recommended that first aid training be compulsory in schools, that every driver being tested to drive also be tested on first aid skills and that each car should be equipped with a first aid kit.

RARU, Clark and Assoc. (1985) reviewed literature and found that 13% of the road deaths examined in South Australia were probably survivable, including 7% who asphyxiated. RARU, Clark and Assoc. cite Tonge et al. (1964) and Robertson and Tonge (1968) on their studies which determined that several patients had died before reaching hospital due to asphyxia from inhaled blood or vomit. In summary, the authors state (p 52):

The life saving measures which could be performed with little or no equipment by lay persons with some training or knowledge are: maintenance of the airway in unconscious patients, ie. correct positioning, clearing obstructions in the mouth, etc; mouth-to-mouth resuscitation, and control of external bleeding.

Hossack (1972) studied the patterns of 500 drivers and passengers killed in road accidents and concluded that 7% of the deaths arose due to asphyxia without other major injuries. These cases were thought to be caused by laryngeal spasms, aspirated foreign materials and obstruction by the tongue. Komesaroff (1978) stated that it would be reasonable to assume that many of these lives could be saved by early intervention, including removing foreign materials from the pharynx, pulling the chin back firmly and placing the patient into the lateral position.

Khangure (1998) examined 1151 deaths from Western Australian motor vehicle accidents over a five-year period (1990-1994). The majority of MVA deaths in rural WA occurred out of hospital ie. 90% (514) as compared with 10% (54) in hospital. The pathologists specifically noted that airway obstruction was a contributing cause – if not the cause - of death in 5% of the cases. In conclusion, Khangure stated that the need for crash victims to have a clear and secure airway is not being met and that for 5% of the victims dying outside of hospital, this contributes to their death. Simple first aid has the potential to save these lives.

Christie (1983) reviewed research on pre-hospital deaths caused by MVAs in a discussion of the pertinent issues surrounding compulsory first aid training for drivers. The review discussed reports from the St John Ambulance Association (SJAA), South Australian Centre, and the Royal Australian College of General Practitioners (RACGP), South Australian Faculty. The conclusion was that between 7% and 15% of MVA fatalities could be avoided by immediate first aid from lay persons or otherwise.

In summary, the research papers reviewed have shown a clear case for the reduction in roadside fatalities through the early intervention of laypersons. Table 1 summarises the findings of the reviewed papers and illustrates that one could confidently argue that around 7% of lives could be saved by early intervention. This would appear to be a reasonable starting point upon which to base intervention programs.

Table 1: Summary of reviewed research findings.

Author/s	Year	% Avoidable deaths	Comments
Gilroy	1985	7.6%	
Hussain & Redmond	1994	33.5%	Included deaths due to all emergencies
RARU, Clark & Associates	1985	13%	7% asphyxiated
Hossack	1972	7%	
Khangure	1998	5%	
Christie	1983	7 – 15%	Review of research papers

2.2 Public perception of rendering roadside assistance.

Some research studies have noted that lay persons or medical personnel either will not stop and assist, or stop but do not offer assistance to victims of road trauma. There is an absence of published research relating to why laymen

will not stop and render assistance. Any person/s suggesting intervention programs to reduce roadside deaths would need to thoroughly investigate the local population and their perceptions of road trauma assistance.

Social psychology has several views of helping behaviour, relating to genetics, modelling behaviour, personality, environmental influences, and so on. Perhaps one short paragraph straight from the textbook would best explain why or why not, a witness might offer help to injured victims when a crowd is present. Brehm and Kassin (1993) summarise five steps that are involved in the delivery of help. Each of these steps refers to models (in bold) of social helping behaviour.

*The **Distraction** of others and our own self-concerns may impair our ability to notice that someone needs help. Because of **Pluralistic Ignorance**, each member of a crowd of bystanders may infer from the inaction of others that there is no emergency. In the **Diffusion of Responsibility**, people avoid taking responsibility because they assume that others will do so. People are more likely to offer direct aid if they feel competent to provide assistance. Even if people intend to help, they may not do so if they fear that behaving in a helpful fashion will make them look foolish – a case of **Audience Inhibition**. According to the **Arousal: Cost-Reward Model** of helping, people feel shocked and alarmed at the sight of an emergency, and they help in order to reduce this unpleasant arousal. If there are other, less costly ways to reduce arousal, help will not be provided. Overall, victims are more likely to be helped if there is only one person present at the emergency than if there is a crowd (p 342).*

2.2.1 Perception of ineptitude.

One suggestion from research on first aid is that some people either perceive that they cannot cope at an accident scene, or they are not confident they will be able to save lives (even after being trained in first aid). Visual presentations of real crash scenes and injured victims being assisted may help to allay some of the distress when a lay person is confronted with the decision to stop and assist.

2.2.2 Perception of personal harm

No research was identified that discussed a lay person's fears of contracting diseases transmissible by body fluids discharged at the crash scene (eg. HIV, hepatitis C, etc.). To this extent, it remains unknown whether or not this is an issue for likely Good Samaritans.

2.2.3 Litigation concerns

Over the past few decades there has been considerable debate concerning litigation against those who perform actions that worsen injuries or lead to the death of the victim. A considerable amount of time and resources have been directed at legislation aimed at protecting "Good Samaritans" who act in "good faith". The research questions that require answering are:

- Have any medical practitioners, nurses, other emergency personnel, or members of the public, ever been successfully tried in court for the following:
 - Acts of gross misconduct leading to the worsening of injury or causing death?
 - Acts of negligence, omissions or errors (whilst acting in good faith) leading to the worsening of injury or causing death?
- Where "Good Samaritan" legislation is in place, has it ever been used in defence of any person/s being tried for points 1 and 2 above?
- Has common law been cited in defence of any person/s being tried for points 1 and 2 above?

Gray and Sharpe (1972) discuss research from 1965, pointing out that there seemed to be no cases appearing in the law reports concerning litigation against Good Samaritans. They argue that this may suggest the "utter irrelevancy" of the statutes, or their efficacy in discouraging crash victims from proceedings against Samaritans. They further cite the almost complete absence of any cases under the common law principles.

McVey (1984) states that in USA, the prospects of a negligence action succeeding against a doctor who "does his best in the circumstances" is remote. He mentioned that some US states have implemented "Good Samaritan" legislation to protect such doctors, although he feels that such legislation should not be necessary.

A recent Western Australian study searched for litigation cases worldwide and found that only one case advanced far enough to be taken to the high court in the US (Ford, 2000 personal communication). The case was subsequently dismissed.

Speaking of the litigation issue in Queensland, Bettes (1998) wrote in defence of litigation concerns, stating:

Whilst no duty exists, should a rescuer elect to assist, a duty of care is established at the point of intervention. The standard of care expected of the rescuer is that of an ordinary competent rescuer, exercising his or her respective first aid skills – no more. It would appear that factors such as the potential danger to the rescuer, and the need for speed under which the rescuer must act, will be considered as relevant to determining the standard of care expected. Finally, the plaintiff in any such action, would need to establish that his or her injuries were caused, or exacerbated by the less than desirable actions of the rescuer (p 7).

2.3 Good Samaritan legislation.

Good Samaritan legislation in the US started in 1959, when California passed the “Good Samaritan” statute that read:

No person licensed under this chapter, who in good faith renders emergency care at the scene of the emergency, shall be liable for any civil damages as a result of acts or omissions by such person in rendering the emergency care (California Business and Professional Code, s.2144; cited in Gray & Sharpe, 1972).

According to Gray and Sharpe (1972), some 40 statutory codes have been implemented in US states as a result, with a wide variation in terminology and paucity of interpretation. Whilst some of the statutes are said to protect doctors only, others protect other medical professionals and some protect all members of the public. Gray and Sharpe highlight the absurdity of the statutes that do not protect the non-trained professional, whilst offering immunity to those so trained in the administration of life-saving aid.

In 1973, a “Good Samaritan” legislation was passed in Queensland and subsequently repealed in 1995 to become section 16 of the Law Reform Act (Bettes, 2000; personal communication). Similar to the US versions of the legislation, it protects registered nurses and medical practitioners, leaving those less trained in life-saving procedures without the same level of protection against litigation. Bettes states that the Good Samaritan legislation has never been referred to in any cases and believes there is no need for the legislation as Samaritans are protected from litigation by common law. Good Samaritan legislation does not appear to exist in any other Australian states.

RARU and Clark and Assoc. (1985) have mentioned that the act of passing legislation could be a catalyst for increasing awareness of the need for first aid. However, research in the US revealed that medical practitioners were more likely to stop and render assistance in a state that did not have the statute, than when in a state that did (Gray & Sharpe, 1972). It can be argued that the mere fact that such legislation is in place reminds practitioners of the potential to have litigation brought against them. Otherwise, they may act normally and render assistance without even considering that the effort they bestow may be used against them in a court.

2.4 Legal requirement to assist

It is the author’s experience in Western Australia, that in most cases it is unusual for the first vehicle arriving at the crash scene, to not stop and render assistance. Most drivers tend to have a fascination for investigating the scene of an accident and a willingness to assist those in need of help. This is not likely to be different in Queensland or in any other Australian States or Territories, however, this is merely the opinion of the author and Australian research has not been conducted on this very important issue.

Gray and Sharpe (1972) cite a legal requirement to assist injured people, in existence in Portugal and the Netherlands over 100 years prior to publication of their paper. This legal requirement has spread to most European countries and it is a crime to not assist injured at the scene of an accident. However, there were no research papers identified that quantified the benefits of this form of compulsory assistance.

Brodsky and Hakkert (1984) mention that a person passing the scene of an accident in Israel is required to stop and not continue until they have done everything possible to assist the injured. This includes patient transfer to the hospital if either they think it warrants such treatment or if the patient requests it. The requirement to stop and assist is a regulation of the Ministry of Transport and is a custom in Israel. It is unknown how prevalent the public movement of injured victims is. Neither the Government, nor other professional groups have put forward guidelines on the safe movement of the injured victims, or whether public or ambulance evacuation should be used. Brodsky and Hakkert surveyed 124 students and professional people in Haifa. The survey included questions on controlling bleeding, restoring breathing and transferring unconscious victims with head injuries. Results showed that over 50% incorrectly answered questions on basic life saving first aid. This may then present the following problems:

- Samaritans untrained in first aid may offer assistance that could possibly do more harm than good;
- The Samaritan legally compelled to assist may do so without compassion for the victim or a real willingness to help sustain life, and
- As it is a legal requirement to assist, a crowd may soon form and the chances of life-saving first aid may be lowered.

The authors concluded that due to the lack of basic life saving skills and the requirement to assist until victims cannot be helped any further, training should be initiated in the public school system. A set of guidelines for recognising risk in patient movements is also needed.

2.5 Compulsory first aid with new drivers licenses

A number of countries have legislated to make first aid training compulsory for driver licensing (RARU, Clark & Assoc., 1985), however, evidence to support such implementation is either lacking, or is 'soft evidence'. The soft evidence suggests in the former West Germany, experience shows that the number of road crash victims dead on arrival at hospitals decreased (Christie, 1983).

There are several proponents of compulsory first aid legislation and several opponents of the initiative. Christie 1983 (p 13) summarises the most coherent arguments for introduction of a compulsory first aid for licensed drivers as:

1. *Persons attracted to voluntary programmes are predominantly mature, responsible drivers and not the young (particularly male) drivers who would be (in the opinion of the ARCS) most in need of such training given the high risk of accidents in that age group;*
2. *Most voluntary programmes do not attract sufficient numbers of trainees to ensure positive effects within the community;*
3. *Injured motor accident victims have a right to expect that first aid assistance, however basic, will arrive in the next vehicle;*

and those opposed to the introduction of the legislation as:

1. *Motivation, attitude, retention and application are reduced among non-voluntary trainees, in comparison to volunteers (Miller & Agnew, 1973; Brophy, 1981), raising questions about the cost-effectiveness of such training and the potential harm to the injured if such trainees do attempt to render emergency first aid some time after initial training;*
2. *The motivation to stop and render assistance at an accident is reduced as drivers feel that, as everyone is trained, someone else will stop, even if they don't; and*
3. *Public resistance to the scheme could be considerable and may act to neutralise the intent of compulsory first aid training programmes.*

It would appear that most of the arguments seem valid, at least on the surface, and only the results of evaluation studies of such legislation (or of other intervention strategies), would confirm or undermine their validity. It would be hoped that such research would be sufficient to move legislators to "either side of the fence". Clearly, other avenues should be explored before policy makers are asked to add more compulsion into the regulatory framework that governs our road safety.

2.6 Compulsory first aid in the school curriculum

Many authors support the requirement to teach first aid within the school curriculum (eg. Komesaroff, 1978, Malycha, 1984, Christie, 1983, Lewis, 1983). Trinca (1978) places the need for first aid training into perspective in his statement:

Road trauma is a universal disease and is a community health problem in all motorised countries. Its control and defeat does involve a wide spectrum of workers who are neither doctors or surgeons and who have an equally important role to play.... Total care of road crash victims becomes the responsibility of society itself. We must educate people and the politicians to accept this attitude and when this happens a better appreciation of the importance of prevention of road crashes will occur (p 10).

Christie (1983) cites Brophy (1981, not referenced) as being an opponent of compulsory first aid training for drivers. He proposes that the skills and knowledge will be more easily assimilated and accepted, and that the positive responsible attitudes resulting from such instruction will be developed from an early age if taught in school. This attitude will be highly developed by the time the recipient obtains their motor vehicle license and should persist into adulthood.

There do not appear to be any opponents to compulsory first aid training in the school curriculum and many authors tend to share the view that such training will be beneficial in directing the new driver to have a more safety conscious attitude. However, there has always been pressure on the school curricula, with many competing priorities. This may explain why first aid training has not become compulsory in schools.

2.7 Compulsory first aid kits in cars

People skilled in first aid will generally be able to cope with emergency situations even if a first aid kit is unavailable, however, the level of assistance would be improved with first aid equipment Andreasson (1979). In opposition, it is asserted that a suitable first aid kit would be of little use without someone who can put the contents to efficient use (Christie, 1983). Therefore, the first aid kit issue is principally bound up with first aid training for drivers.

Many countries such as Austria, Belgium, the former Czechoslovakia, the former East and west Germany, Switzerland and former Yugoslavia, have made the carrying of first aid kits in cars compulsory (Andreasson, 1979., RARU & Clark & Assoc., 1985). However, no evidence of the effectiveness of this regulation was found within the literature reviewed and it is unclear whether these requirements have persisted through the political changes in some of these countries.

2.8 Short courses in basic life-saving first aid

As noted above, it could be argued that around 7% of roadside fatalities could be avoided (or rather, reduced to hospitalisation injuries) if members of the public had the basic skills to save lives. The research examined in this report has shown that merely by being able to help victims maintain a clear airway or control major blood loss, victims have a considerably better chance of surviving until emergency services arrive at the scene. These basic skills should take only a short time to teach and retention of the skills should be high (Worth, 1988). This may even help to reduce the need for refresher courses that are required for senior first aid certified persons. Most proponents for basic life saving first aid courses have suggested that the person assisting the crash victim need not have the theoretical underpinning of these skills. They need to be able to quickly assess the emergency of the situation and to be able to apply their life saving skills with a minimum of stress.

To improve survival from rural highway trauma, the National Highway Transport Safety Authority (NHTSA) decided to focus its efforts on the care that crash victims receive from bystanders before the arrival of Emergency Medical Services. They developed the *National Standard Curriculum for Bystander Care* (NHTSA, 1992), an innovative approach to giving victims of rural highway trauma a better chance of survival. While the impetus for the project was related to the idea of first aid instruction, the Bystander Care Expert Committee explicitly rejected traditional first aid instructions because it:

- *Fails to reach enough people, due to its classroom-based format;*
- *Fails to produce consistent effective action among those who are trained;*
- *Ignores many of the decisions, issues, and concerns that confront a lay person in an emergency;*
- *Is based on diagnosis of the medical problem, an unnecessary step that can delay appropriate care; and*
- *Includes too many non-essential skills.*

Instead, the approaches recommended by the Bystander Care Committee are based on these principles:

- *Nearly everyone can (and should) learn basic life-saving skills;*
- *Teaching lay persons to overcome fear and uncertainty is at least as important as teaching them specific life-saving skills;*
- *Lay persons do not need to know why victims exhibit certain symptoms in order to provide appropriate care; and*
- *Lay persons should not be expected to perform non-essential actions that are not critical for saving lives. (p ii).*

There is an obvious need for agreement on what constitutes basic life saving first aid at the scene of an MVA. This would require the formation of a working group constituting relevant stakeholders in the areas of first aid and medical practice.

3 CONCLUSION

There are a number of logical reasons to justify the introduction of compulsory first aid training for new drivers license holders, compulsory carriage of first aid kits in vehicles, compulsory first aid training in the school curriculum and perhaps the enactment of Good Samaritan legislation throughout Australia and its territories. However, there are also reasonable arguments against the enactment of legislation that has an element of compulsion in it. Further, the lack of research evidence to support any of the above-mentioned changes to legislation, appears to retard any movement forward in MVA first aid issues. Though any of the above recommendations may appear (to some) to be a 'quick fix' for the situation, a considerable amount of work is still required to identify all of the issues that currently lead to around 7% of the road fatalities dying when they may have been saved by early intervention.

4 RECOMMENDATIONS

First and foremost, there is a need to identify the number of lives that could possibly be saved by laypersons arriving at the scene of an MVA in Queensland. An accident cost could then be applied to the number of deaths that may be reduced to hospitalisation injuries. This cost would then be used to influence Government and other stakeholders by stressing that there may be a large cost saving to the Queensland community if implementation of intervention strategies were successful. For example, based on the statistics used earlier of the crashes occurring in the four-year period (1995 – 1998 inclusive), and the 1,324 fatalities that resulted, we can estimate the following:

- That the probable percentage of lives that could be saved (based on the literature reviewed) is 7%, or approximately 93 victims;
- This figure multiplied by the cost reduction identified earlier (\$672,000 for each fatal reduced to hospitalisation injury) would result in a saving of \$62,496,000 over the four year period.

The 62.5 million dollar saving would be more than enough for the implementation of an intervention strategy.

An investigation should be carried out as to the reasons why people will not obtain first aid certificates. This will help to identify whether it is the current training style, duration of the course, cost of the course, or any other issues. These issues can then be addressed before implementation of any training strategy.

Discussions should be held on what is the lowest level of training required for basic life-saving first aid, placing emphasis on being able to train the first aid in a short time-frame. This could be assessed by conducting focus groups or workshops with emergency personnel, coroners and other medical professionals. The information could be utilised to determine how long it may take to train people on the short course and how much it would cost to do so.

An investigation should be conducted to identify the most common users of rural roads to target for immediate implementation of first aid courses/awareness. These are the people most likely to be able to stop and assist in the early moments after the crash, during the most critical time for the severely injured victim.

Information should be disseminated on the medicolegal consequences of Good Samaritan intervention. This will need to start with all trainers and finish with those attending the training course.

Discussions should be held with emergency personnel and medical practitioners on what should be included in a basic life saving first aid kit. The kit could be included into the cost of the training (perhaps subsidised by government) and made available to all those who obtain the certificate in basic life-saving first aid.

4.1 Research requirements

As has been previously mentioned, the practical implementation of strategies to reduce the number of people dying at the scene of motor vehicle accidents has been stifled by issues such as Good Samaritan legislation, compulsory first aid training and compulsory first aid kits in cars. Efforts should be made to promulgate the research required to answer the questions of policy makers and strategists, rather than continue the discussions without the relevant information. The following research strategy would allow the State of Queensland to be leaders in the continuing struggle to reduce deaths on the road:

- Identify the reasons why people in rural Queensland might not stop to assist at the scene of an MVA;
- Identify the reasons why people do not attempt to gain first aid certification;
- Through focus groups and workshops, discuss what would need to be included in a short, basic life-saving first aid course;
- Through focus groups and workshops, discuss what would need to be included in a basic life-saving first aid kit;
- Identify the type of road users most likely to be the first to arrive at the scene of a rural MVA. This group would be targeted first;
- Investigate the most appropriate methods to disseminate information related to Good Samaritan legislation;
- Determine the best possible forms of training basic life-saving first aid techniques (ie. web sites, media programs, QAS and other training providers, etc), and

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