



Queensland University of Technology
Brisbane Australia

This is the author's version of a work that was submitted/accepted for publication in the following source:

Yuan, Anna & [Fleiter, Judy](#) (2013) Road safety knowledge exchange and capacity building between China and Australia. In *Road Safety on Four Continents 16th International Conference*, 15-17 May 2013, Grand Gongda Jianguo Hotel, Beijing.

This file was downloaded from: <http://eprints.qut.edu.au/66835/>

© Copyright 2013 [please consult the author]

Notice: *Changes introduced as a result of publishing processes such as copy-editing and formatting may not be reflected in this document. For a definitive version of this work, please refer to the published source:*

ROAD SAFETY KNOWLEDGE EXCHANGE AND CAPACITY BUILDING BETWEEN CHINA AND AUSTRALIA

Ann Yuan, Country Manager for China
Global Road Safety Partnership (GRSP), Regional Delegation for East Asia
International Federation of Red Cross and Red Crescent Societies
4-6-1 Jianguomenwai Diplomatic Compound, Beijing 100600, P.R. China
Tel: (8610) 6532-7162 ext. 34 Fax: (8610) 6532-7166
e-mail: ann.yuan@ifrc.org

Judy Fleiter, PhD
Centre for Accident Research & Road Safety – Queensland (CARRS-Q)
K Block, Kelvin Grove Campus, Queensland University of Technology
130 Victoria Park Rd, Kelvin Grove, QLD 4059 Australia
Tel: +61 7 3138 4905 Fax: +61 7 3138 0001
e-mail: j.fleiter@qut.edu.au

ABSTRACT

Road traffic injuries are one of the major public health burdens worldwide. The United Nations Decade of Action for Road Safety (2011-2020) implores all nations to work to reduce this burden. This decade represents a unique and historic period of time in the field of road safety. Information exchange and co-operation between nations is an important step in achieving the goal. The burden of road crashes, fatalities and injuries is not equally distributed. We know that low and middle-income countries experience the majority of the road trauma burden. Therefore it is imperative that these countries learn from the successes of others that have developed and implemented road safety laws, public education campaigns and countermeasures over many years and have achieved significant road trauma reductions as a result. China is one of the countries experiencing a large road trauma burden. Vulnerable road users such as pedestrians and cyclists make up a large proportion of fatalities and injuries in China. Speeding, impaired/drug driving, distracted driving, vehicle overloading, inadequate road infrastructure, limited use of safety restraints and helmets, and limited road safety training have all been identified as contributing to the problem. Some important steps have been taken to strengthen China's approach, including increased penalties for drunk driving in May 2011 and increased attention to school bus safety in 2011/12. However, there is still a large amount of work needed to improve the current road safety position in China. This paper provides details of a program to assist with road safety knowledge exchange between China and Australia that was funded by the Australian Government which was undertaken in the latter part of 2012. The four month program provided the opportunity for the first author to work closely with key agencies in Australia that are responsible for policy development and implementation of a broad range of road safety initiatives. In doing so, an in-depth understanding was gained about key road safety strategies in Australia and processes for developing and implementing them. Insights were also gained into the mechanisms used for road safety policy development, implementation and evaluation in several Australian jurisdictions. Road traffic law and enforcement issues were explored with the relevant jurisdictional transport and police agencies to provide a greater understanding of how Chinese laws and practices could be enhanced. Working with agencies responsible for public education and awareness campaigns about road safety in Australia also provided relevant information about how to promote road safety at the broader community level in China. Finally, the program provided opportunities to work closely with several world-renowned

Australian research centres and key expert researchers to enhance opportunities for ongoing road safety research in China. The overall program provided the opportunity for the first author to develop knowledge in key areas of road safety strategy development, implementation and management which are directly relevant to the current situation in China. This paper describes some main observations and findings from participation in the program.

1. BACKGROUND

In November 2011, the first author (Ann Yuan) received a 2012 Endeavour Executive Award which is funded by the Australia Government Department of Education, Employment and Workplace Relationship (DEEWR). This Award provided the opportunity for her to undertake a 4-month professional development program in Australia between August and November, 2012. The program was hosted by the Centre for Accident Research and Road Safety-Queensland (CARRS-Q) which is the working unit of the co-author (Dr Judy Fleiter).

The program was designed to link the Award recipient with relevant Australian road safety agencies which included policy makers, researchers and practitioners in order to gain a better understanding of the overall road safety situation in Australia and a variety of road safety institutional systems in a number of Australian jurisdictions. The program was also designed to enhance the research skills of the Award recipient and to improve opportunities for understanding of road safety issues faced by both countries. China is currently experiencing rapid motorization, coupled with a large road trauma burden. Vulnerable road users such as pedestrians and cyclists make up a large proportion of fatalities and injuries in China. Speeding, impaired/drug driving, distracted driving, vehicle overloading, inadequate road infrastructure, limited use of safety restraints and helmets, and limited road safety training have all been identified as contributing to the problem. Some important steps have been taken to strengthen China's approach, including increased penalties for drunk driving in May 2011 and increased attention to school bus safety in 2011/12. However, there is still a large amount of work needed to improve the current road safety position in China.

2. PROGRAM OBJECTIVES

The proposed objectives of the program were to:

- Better understand the overall situation including historical information on road safety in several Australian jurisdictions; namely Victoria, New South Wales and Queensland;
- Better understand the processes involved in developing and implementing road safety strategies in Australia;
- Better understand the mechanisms used for road safety policy development, implementation and evaluation in several Australian jurisdictions; namely Victoria, New South Wales and Queensland;
- Establish contacts with the key road safety stakeholders (policy makers, researchers and practitioners) in Australia;
- Improve road safety research skills.

3. MAIN PROGRAM ACTIVITIES

A series of placements and meetings with a broad range of agencies and research centres in Brisbane, Melbourne and Sydney were part of the scheduled program of activities.

Attendance at 3 road safety conferences and participation in training workshops and courses were also included in the program.

A. Conference Attendance

1. The Australasian College of Road Safety (ACRS) Conference

The Australasian College of Road Safety (ACRS) is a voluntary membership organization established in the late 1980s in Australia. It aims to build a collaborative environment for professionals from all areas of road safety to promote communication and networking, advocate for road safety, and to share information, knowledge and professionalism. The current membership includes experts from a wide range of road safety disciplines including policy makers, academics, community organizations, researchers, federal, state and local government agencies, private companies and members of the public.

The ACRS conference is held on the annual basis in Australia. The 2012 Conference was held during August 9-10 in Sydney entitled “*A Safe System: Expanding the reach!*”. The objective is to take road safety to the next level of knowledge and implementation and to assist in the translation of research into action in keeping with the concept of the Safe System and the United Nations Decade of Action for Road Safety (2011-2020). Over 200 delegates participated in the conference.

2. 2012 World Safety Conference

Safety 2012 was the 11th World Conference on Injury Prevention and Safety Promotion held between 1-4 October in Wellington, New Zealand. The conference is held biennially under the auspices of the World Health Organization. It brought together the world's leading injury prevention and safety researchers, practitioners and advocates, to build knowledge and strengthen the fields of injury prevention and safety promotion worldwide.

Besides participating as a delegate in the conference, the first author also presented a poster which contained information about one of the Global Road Safety Partnership's (GRSP) projects in China. This poster contained findings of the follow up survey of the Vulnerable Road Users Safety project at the six improved junctions in Beijing.

3. Australasian Road Safety Research, Policing, Education Conference 2012

The annual Australasian Road Safety Research, Policing, Education Conference is hosted in a different Australian State/Territory or New Zealand city on a rotational basis. This year's conference was held during 4-7 October in Wellington, New Zealand and was hosted by the Ministry of Transport New Zealand with the focus on research, policing and education. Approximately 300 delegates attended this year's conference.

On behalf of GRSP and the project partner (the Ministry of Transport, China), the first author presented a paper at the conference to introduce the *GRSP/MOT Speed Management Pilot Project in China*. This paper provided the information of background, methods and evaluation of an evidence-based intervention conducted at the Class I highway in the suburban area of Beijing. This paper received the Road Safety Practitioner's Award at the conference. In addition, the first author was invited to be a member of the international road safety panel that facilitated discussion on ‘*whether or not road safety is affordable*’ for all conference delegates at a key plenary session.

B. Road Safety Stakeholders Meetings

The road safety stakeholders meetings were held in Melbourne, Sydney and Brisbane. The objectives of these meetings were for the first author to:

- a) Better understand the road safety institutional system in different states;
- b) Better understand the role that different stakeholders play in road safety and their road safety strategies;
- c) Better understand the general road safety situation in these jurisdictions, including current and historical milestones in road safety development; and
- d) Better understand the countermeasures used to address different road safety issues such as: drink driving, speeding, vulnerable road users and young drivers.

The table below lists the organizations visited during the program:

City	Organization	Remarks
Melbourne	VicRoads	State government authority in Victoria that builds major roads, promotes road safety, manages traffic, regulates vehicles and licenses drivers.
	Victoria Police	Highway Patrol Group
	Australian Road Research Board (ARRB)	A national research body focused on roads and road transport in Australia
	Transport Accident Commission (TAC)	The sole transport injury insurance agency in Victoria
	Monash University Accident Research Centre (MUARC)	Road Accident Research Centre at Monash University
Sydney	Transport and Road Safety (TARS) Research	The road safety research centre at the University of New South Wales (UNSW)
	Austroroads	The association of Australian and New Zealand road transport and traffic authorities
	ARRB	A national research body focused on roads and road transport in Australia
	Motor Accident Authority (MAA)	MAA is a statutory corporation that regulates the compulsory third party (CTP) personal injury insurance scheme for motor vehicles registered in NSW.
	NRMA Motoring & Services	A motorist club in NSW
	NSW Centre for Road Safety (CRS)	Policy and planning body for road safety in NSW
	NSW Police Force	Highway Patrol Division
	RMS Crashlab	Road and Maritime Services (RMS) is the state government implementation agency in NSW that builds major roads, promotes road safety, manages traffic, regulates vehicles and licenses drivers. Crashlab is a facility that conducts crash testing of vehicles in order to assess their safety.
	The George Institute	A research centre focussed on injury prevention internationally
Neuroscience Research Australia	A medical and neuroscience research institute with a focus on the brain and nervous system.	
Brisbane	Centre for Accident Research and Road Safety – Queensland (CARRS-Q)	CARRS-Q was the host organisation for the Award recipient. This Centre is part of the Queensland University of Technology (QUT) and focuses on road safety research and education as well as injury prevention work.
	Queensland Police Service	Roadside drug testing unit, the Traffic Camera

		Management Office, and State Traffic Task Force
	Motor Accident Insurance Commission (MAIC)	The regulatory authority responsible for the ongoing management of the Compulsory Third Party (CTP) scheme in Queensland.

C. Interviews with Expert Road Safety Researchers and Practitioners

The first author conducted a series of one-to-one interviews with a variety of senior road safety experts in the three cities in order to gain a better understanding of the historical road safety milestones and the evolutionary process of road safety in the different States in Australia. Interview participants in Melbourne were David Shelton (Executive Director, Road Safety and Network Access, VicRoads), Professor Ian Johnston (NTC deputy chairman and member of the National Road Safety Council), David Healy (Former General Manager for Road Safety at TAC), and David South (Former Manager of Road User Behaviour at VicRoads). Interview participants in Brisbane were Emeritus Professor Mary Sheehan (Founder and Former Director of CARRS-Q), Professor Barry Watson (Director of CARRS-Q), Dr. Mark King (Head of Education and International Development, CARRS-Q), and Professor Narelle Haworth (Theme leader for Vulnerable Road User Safety Research, CARRS-Q). In Sydney, interview participants were Ray Taylor (Former General Manager of Research Division, ARRB), Lori Mooren (Senior Research Fellow at TARS Research, UNSW), Dr. Soames Job (Executive Director of Australia’s National Road Safety Council and Former Director of the Centre for Road Safety, NSW), and Professor Raphael Grzebieta (Chair of Road Safety at the Transport and Road Safety (TARS) Research unit, UNSW).

D. Placement with the Host Organisation

The Centre for Accident Research and Road Safety-Queensland (CARRS-Q) at the Queensland University of Technology in Brisbane was the host organisation for this Endeavour Executive Award. The first author was based at CARRS-Q for the majority of the 4 month program. Apart from the interviews with key road safety experts at CARRS-Q as outline above, various other activities were undertaken. These activities included meeting with various research and academic staff at the Centre in order to understand their research interests and current projects; meeting and assistance with hosting Chinese visitors from Shandong, Beijing and Tianjin; giving various presentations to Centre staff to share information about the road safety situation in China and GRSP projects conducted in China. In addition, several courses and workshops were undertaken including: Traffic Psychology, Road Safety Audit Course (including Investigation and Treatment of Crash Locations), and a Road Safety Evaluation Course (including Analytical Techniques in Evaluation).

4. OUTCOMES

During the 4 month program, many different people provided a vast array of information and insights relating to the program objectives. Due to the page limitation, this paper will only focus on a couple of key principles relating to effective road safety strategy/promotion which should be useful to the countries working to reduce road trauma and improve road safety.

a) Background Information about Road Safety in Australia

Before discussing specific outcomes, it is necessary to provide some background information about Australia as a country because it helps in understanding the process of road safety development.

Australia has 6 States (New South Wales, Victoria, Queensland, South Australia, Western Australia and Tasmania) and 2 Territories (Northern Territory and the Australian Capital Territory) with a total population of approximately 22.7 million people (Australian Bureau of Statistics, 2012). Prior to Federation in 1901, each State was operated independently as a separate British colony. As a result, the government in each State has powers to establish its own legislations and governing systems for political and economic development across a range of areas, including transport. Australia is also a country large in size (7,692 million square kilometres) (Australian Government, 2012) yet small in population (22.7 million) (Australian Bureau of Statistics, 2012). The population is heavily concentrated in the eastern States and is highly urbanized. Australia is a highly motorized country; a total of 16.7 million motor vehicles (including motorcycles) were registered according to the 2012 Motor Vehicle Census (MVC) (Australian Bureau of Statistics, 2012). As a result of the historical development of government described above, the responsibility of improving road safety is largely undertaken by State and Territory Governments and most of the road safety activities are carried out at the state level rather than the national level. The two main roles played by the Federal Government in road safety are: a) Establishing standards for imported and domestically made motor vehicles; and b) fostering communications among the States and Territories. Each State and Territory in Australia develops its own road safety strategy and initiatives to address specific issues and effective countermeasures are shared among the states.

The first national road safety council was established in 1949 in Australia. However, road safety was not a real concern until the road toll peaked at 3978 fatalities in 1970 (Department of Infrastructure, Transport, Regional Development and Local Government, 2007). As a result, during the last four decades, Australia has made steady efforts to reduce road fatalities and injuries. A wide range of road safety countermeasures have been introduced and evaluated including compulsory seatbelt wearing in the 1970s (Victoria was the first jurisdiction in the world to make seatbelt wearing compulsory), reductions in the legal blood alcohol concentration (BAC) (from 0.1 g/100ml to 0.08 g/100ml and finally to 0.05 g/100ml for all general drivers); large scale and sustained programs of random breath testing (RBT) to target alcohol impaired drivers from the late 1980s, intensive speed management programs including the introduction of automated enforcement in the 1990s which have evolved to include a mixture of mobile/fixed and overt/covert deployments, the safer infrastructure program (black spot treatment), roadside random drug testing and the enhanced Graduated Licensing System (GLS) in the recent years (Australian Transport Council, 2011; Australian Transport Safety Bureau, 2004). Figure 1 illustrates the road fatality reductions over four decades, together with accompanying introductions of key countermeasures in New South Wales.

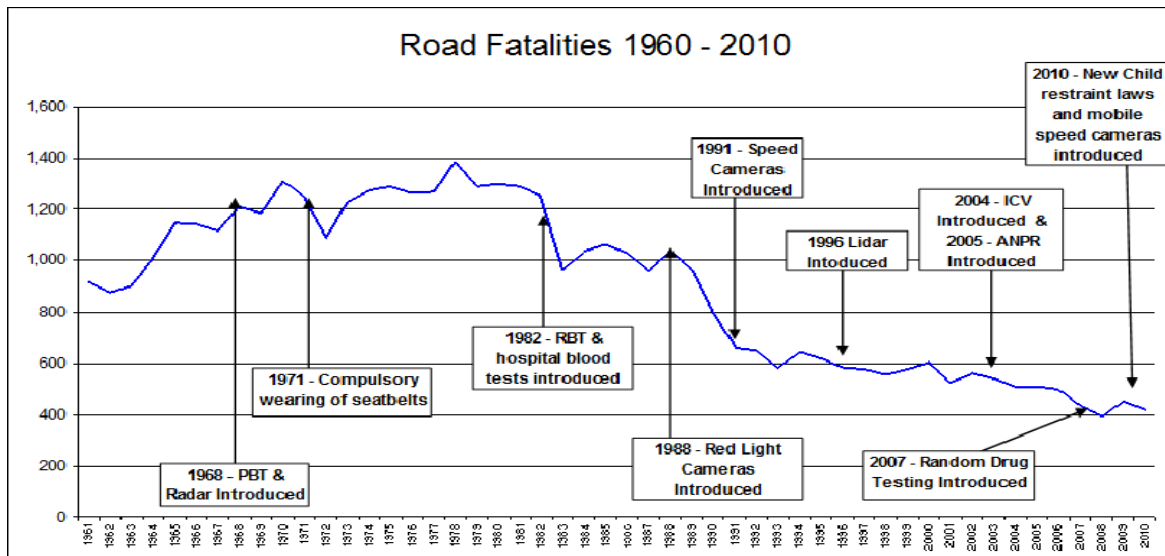


Figure 1: Number of road fatalities in New South Wales (1960-2010) with accompanying countermeasure introductions. Source: New South Wales Police

b) Key Principles in Promoting Effective Road Safety

Australia has been recognized as one of the leading road safety countries in the world. After visiting several Australian jurisdictions, the first author offers the following observations about several principles that appear to have effectively enhanced road safety in Australia. It is acknowledged that although these principles are not new to many road safety professionals worldwide, translating them into practice is not an easy task in many countries including China.

1. The Established Road Safety Institutional Framework and Multi-sector Partnership

The road safety activity is led by transport departments (road authority) at the State level in Australia. Therefore, each jurisdiction and its institutions approaches road safety partnerships in a slightly different way. The institutional frameworks and partnerships in road safety were gradually built up during the last four decades and Victoria was noted as having made significant achievements in this area. Therefore, this section will use the case of Victoria as an example. In Victoria, road safety partnership means the formal and informal relationships among the 4 lead agencies: VicRoads (responsible for road network and vehicle licensing), Victoria Police (responsible for traffic management and law enforcement), the Transport Accident Commission – TAC (the monopoly government insurance agency dealing with transport injury in Victoria) and the Department of Justice. In addition, political commitment from the high level of the State government supports the partnership and coordinates the road safety activities. The road safety management structure in Victoria is shown below:

- **Ministerial Council for Road Safety** is the group of three ministers: the Minister for Roads and Ports, the Minister for Police and Emergency Services, and the Minister responsible for TAC. The Ministers meet regularly to ensure the partnership approach in road safety is achieved;

- **Road Safety Executive Group**, which is under the Ministerial Council for Road Safety, is the group consisting of the senior leaders of the 4 agencies: the Chief Executive Officer (CEO) of VicRoads, the CEO of TAC, the Assistant Commissioner – Traffic and Operations Support of Victoria Police, and the Executive Director Community Operations and Strategy, Department of Justice. This group determines strategic directions and monitors and reports the progress to the State Government through the Ministerial Council for Road Safety;
- **Road Safety Management Group** is under the Road Safety Executive Group, and consists of representatives from VicRoads, TAC, Victoria Police, Department of Justice, Department of Education and Early Childhood Development and Department and Human Services. The functions of the group include: coordinating the implementation of the strategy; developing and implementing programs and countermeasures; reviewing programs; identifying and actioning research priorities; maintaining links with the National Road Safety Strategy; promoting a coordinated statewide program of activities; and supporting development and implementation of educational initiatives including the Traffic Safety Education Plan.

Victoria is internationally recognized for its governmental framework approach to road safety promotion and management and many jurisdictions have sought to imitate this approach. The solid institutional structure makes the role of each partner clear and promotes effective team work to achieve road safety outcomes.

It is also worth noting the important role that the Transport Accident Commission (TAC) plays in road safety in Victoria. Unlike most of other states in Australia, the TAC is the monopoly government insurance agency dealing with transport injury in Victoria with the “no fault” insurance policy. The “no fault” policy means no matter which party is found to be at fault in a road crash, the TAC will pay the hospital costs, lost earning costs and rehabilitation costs of victims, a financial burden that can be life-long in some cases. The TAC pays an average of AUD150,000 for each road death and an average of AUD 1,500,000 for each serious injury. In the 2010/11 financial year, the TAC paid out \$937 million in benefits and compensation to 43,794 people in Victoria.

This huge financial burden means that the TAC has strong interest in improving road safety from in purely business sense, as well as the responsibility laid down by legislation (Transport Accident Act 1986). Each year, the TAC invests about AUD100 million in road safety for black spot treatments on highways and roadsides, school education programs, community road safety programs and public education campaigns. In addition, the TAC also provides funds to police for enhanced enforcement programs and to the vehicle manufactures for improving vehicle safety features. Because of its own business interests, TAC made efforts to ensure that every dollar spent is worthwhile and effective. They are actively involved in review and project approvals; project monitoring and evaluation in the programs/project they invest in, and, as such, have become an important partner in road safety in Vitoria. It is of note that another positive by-product of TAC’s “no fault” policy in Victoria relates to crash reporting. Since the TAC will not pay compensation until a police report is viewed, this is believed to reduce the incidence of under-reporting of road crashes in Victoria.

2. The Road Safety Strategy and Action Plan with Evidence-Based Priorities and Measurable Objectives

Apart from the institutional framework, an ambitious but achievable road safety strategy is equally important to the effectiveness of road safety.

Road safety strategies and action plans are made at both national and state levels in Australia. The first national road safety strategy was made in 1992. The current strategy covers the period equivalent to that of the United Nations Decade of Action for Road Safety (i.e., 2011-2020) (Australian Transport Council, 2011). The current strategy is based on the Safe System Approach in which a holistic view of the road transport system and the interactions among roads and roadsides, travel speeds, vehicles and road users is taken. This approach recognizes that humans make mistakes and that there should be a forgiving system such that death or serious injuries do not occur as a result of such mistakes. The strategy identifies four cornerstone areas of focus in Australia: Safe roads, Safe speeds, Safe vehicles and Safe People.

Each strategy is supported by a rolling action plan, which is made for a period of 2 to 3 years, all of which adopt the practice of using evidence as the basis for decision making and planning. Research findings from Australia and international jurisdictions are the primary sources of evidence used to determine future priorities and approaches. In addition, the objectives/targets need to be specific and measurable. Below are some examples of the targets set at the national level and state level in Australia:

- a) Australia's National Road Safety Strategy 2011-2020 states "*the strategy presents a 10-year plan to reduce the annual numbers of both deaths and serious injuries on Australian roads by at least 30 percent*".
- b) The Queensland Road Safety Strategy 2004-2011 states "*to reduce the road fatality rate per 100,000 from 8.7 by the end of 2002 to 5.6 by the end of 2011*".
- c) The Victorian Road Safety Strategy 2008-2017 not only states to reduce death and serious injury by 30% by 2017, but also sets the target for specific numerical reductions: For example, "*By the end of 2017, the strategy will:*"
 - *Save an extra 100 lives a year*
 - *Prevent over 2000 serious injuries a year*
 - *Reduce the severity of serious injuries*"

Evidence-based road safety strategies and action plans that include specific, measurable objectives/targets is seen as an extremely useful tool to guide activity, monitor program outcomes, and bring relevant partners together with a shared common goal. The use of such strategies and plans is evident in many of the high performing safety countries in the world today.

3. Road Safety is a Shared Responsibility

In many countries, people may think that road safety is a government responsibility. However, in Australia, road safety is a shared responsibility taken by government agencies, university and research institutions, non-government organizations and the community via local councils and community groups. They all share the common interest of reducing road trauma but play different roles. The following are several examples from observations made throughout the 4 month program:

- a) *Research Links Closely with Policy and Decision Making*

In Australia, government agencies work very closely with universities and research institutes during their policy and decision making processes. Also, there is great importance placed on having independent research institutes (i.e., outside of government agencies) to conduct and report objective research. In most States in Australia, there is at least one independent road safety research centre (it may be linked with a university) that is not part of a government agency. Such research centres assist government policy makers by conducting research and program/project evaluation. Examples include: ARRB and MUARC in Victoria, CARRS-Q in Queensland; TARS, The George Institute and Neuroscience Research Australia in New South Wales; and the Centre for Automotive Safety Research in South Australia. These centres conduct different research projects to assist the government to understand the nature and scope of road safety issues as well developing, trialing and evaluating countermeasures to address the issues. These research findings, together with research from international jurisdictions, form the body of evidence used by government agencies to assist when making policy and decisions.

A specific example of this is the peer passenger restrictions placed on P1 (Provisional) drivers within the Graduated Licensing System (GLS) across Australia. The data indicated that over 40% of road crashes involve younger drivers (defined as 18-25 years old in Victoria; 17-24 years old in NSW and Queensland). Therefore, GLS programs have been implemented across Australia although there are slight variations in driver and passenger restrictions across jurisdictions. GLS requires a new driver to progress through three stages before obtaining their full license: a Learner (L) stage, and two stages of probationary driver (P1 and P2). It takes 3 years to progress through the three stages in NSW and Queensland, while it takes 4 years in Victoria. Restrictive regulations apply to new drivers such as the need to maintain a “Zero BAC” (i.e., no alcohol consumption), and no mobile phone use allowed when driving. In addition, distraction is considered to be a bigger issue for young drivers in terms of their safety because of a lack of experience. Therefore, there are also restrictions on the number of peer passengers that can be carried by a new driver. Before implementing these regulations however, research was conducted to determine how many passengers of what age can influence the on-road performance of 17 year-old P1 drivers. As a result, reflecting this evidence, in Victoria, a P1 driver is only able to carry one passenger aged between 16 and 22 years. Evidence-based decision making is general practice within Australian authorities; the above example is only one of many examples observed throughout the 4 month program.

b) Community Involvement in Policy Making

Road safety policy/decision making is not always a “top down” approach. In many cases the community and media raise issues and draw them to the attention of the government (politicians) to make changes (i.e., a “bottom up” approach). One example of this is the 2011-2012 Victorian Speed Limit Review.

VicRoads was asked to undertake the Victorian Speed Limit Review by the Minister of Roads in August 2011. Importantly, the community was invited to have their say about how they would like their roads to be managed and to identify specific locations where speed limits needed to be simplified or altered. VicRoads received 614 submissions from individuals, schools, community groups, local councils and lobby groups from August 30 to October 11, 2011. In consultation with local police and local councils, VicRoads analysed each submission and visited each location nominated by the community to assess if changes were needed.

The Victorian Government's Speed Limit Advisory Group (SLAG) was also consulted and provided input to the recommendations of the Review. SLAG includes representatives of VicRoads, Royal Automobile Club of Victoria (RACV), Victoria Police, the Department of Justice, TAC, Australian Road Research Board (ARRB Group), Municipal Association of Victoria (MAV) and the Monash University Accident Research Centre (MUARC). SLAG meets on a regular basis to discuss speed limit policy and strategy.

The following are the 4 outcomes from the Review:

1. Simplify speed zoning in Victoria
2. Make speed limit signs easier to see and understand;
3. Improved speed limits in pedestrian activity areas;
4. Help road users to understand and comply with the speed limits.

The decision made by the State government was to implement the outcomes of the Review over the four years starting from 2012/2013 financial year. Of note is that it was stated that the priority will be sites identified by the community.

c) Non-Government Organizations (NGOs) Play Important Role in Promoting Road Safety

Apart from independent research centres described above, NGOs also play an important role in road safety in terms of knowledge sharing, public education and advocacy in Australia. The Australasian College of Road Safety (ACRS) is one such example.

The ACRS is a voluntary membership organization established by a group of road safety professionals in the late 1980s. It aims to build up a membership organization outside of the government which brings together researchers, practitioners and policy makers to promote road safety research outcomes and good practice. The ACRS currently has approximately 65 Corporate and 260 personal members and has a Chapter in almost every Australian State and in New Zealand. To share information, knowledge and experiences in road safety, the College organizes an annual conference and State Chapter Committees arrange regular workshops and seminars to address specific issues. It also publishes a weekly newsletter and quarterly journal to communicate with its membership base and provide an avenue for peer-reviewed research to reach a wide audience.

In addition, motorists clubs in many Australian States (e.g., Royal Automobile Club of Queensland (RACQ), Royal Automobile Club of Victoria (RACV), and National Roads and Motorists' Association (NRMA) in New South Wales) also play an active role in road safety advocacy, particularly in promoting the use of safer cars according to findings of the Australasian New Car Assessment Program (ANCAP) and representing members' views to government agencies on a broad range of issues.

CONCLUSION

This Endeavour Executive Award program provided many valuable experiences. Meeting key stakeholders in different cities and interviewing road safety experts provided valuable opportunities to gain a better understanding of the road safety 'picture' in Australia as well as an appreciation of historical information and the evolution of road safety in Australia. Information on how road safety policies and strategies are developed and implemented was obtained and contact with key Australasian road safety stakeholders (policy makers, researchers and practitioners) established. During the 4 months visit, the first author also

observed that many issues and concerns in terms of improving road safety in China also exist in Australia. Therefore, a closer link between the two countries with the relevant organizations to continue exchanging knowledge and information is very much necessary. Although there were many issues observed in Australia, we offer thoughts on three issues in particular that might offer promise in assisting China to deal with its current challenges.

First, the system of road safety management in China needs to be enhanced in order to make road safety initiatives more effective. This means an effective and coordinated institutional framework at all levels of the government needs to be (gradually) established and partnerships among the relevant stakeholders need to be (gradually) built up. In addition, a multi-sector involved road safety strategy with clear and measurable objectives together with an action plan should be developed. This process would help to ensure that each party in road safety has a clear understanding of the goals/objectives as well as their roles and responsibilities in order to work together toward the common goal.

Second, the official crash data released by the Ministry of Public Security (MPS) in 2010 indicates that drivers with less than 5 years driving experience were represented in over 40% of all crashes. Furthermore, if we look at drivers with less than 1 year experience alone, their crash rate was over 10% of the total figure. Therefore, appropriate training and management of novice drivers represents an avenue where China could also benefit. Record numbers of Chinese citizens are becoming license holders and car owners for the first time (Fleiter et al, 2011). As a result, there is a need for appropriate driver training and management of novice drivers entering China's road network (Senserrick et al, 2011).

It seems that adapting a program such as Graduated Licensing System (GLS) in China is necessary. GLS requires a new driver to progress through various stages before obtaining the full license: e.g., a Learner (L) stage, and two stages of probationary driver (P1 and P2) in Australia. With extended learning hours and restrictive regulations applying to new drivers, it would not only assist in promoting a safer transition from new driver to experienced driver, but also should help in reducing crashes and related death and injury in China. Finally, planning and evaluation will play an important role in making road safety efforts more effective in China. Research findings should be used as evidence to guide policy/decision making and program planning. Thorough evaluation will also help to promote effective countermeasures and avoid repetition of ineffective ones. A better communication channel needs to be established in China among the road safety policy makers, researchers and practitioners to assist in promoting the spirit of collaboration and information/knowledge/resource sharing.

The information and knowledge gained throughout these 4 months in Australia will be taken back to China at the conclusion of the program. Although improving road safety in China will need the efforts of generations and contributions from many dedicated people, many of the examples and ideas observed throughout this program can assist this aim.

ACKNOWLEDGEMENTS

We acknowledge funding received as part of a 2012 Endeavour Executive Award. The first author would like to express her sincere appreciation to Barry Watson, Judy Fleiter, Robert Klein, Ray Shuey, David Shelton, Kelly Imberger and Lori Mooren who made great efforts to develop the program. She would also like to express gratefulness to the host organization, CARRS-Q, for all the help provided throughout the program. Finally, a big 'Thank You' to all the people from different organizations in different cities for the time spent and information and knowledge provided.

REFERENCES

- Australian Bureau of Statistics (2012), 9309.0 - Motor Vehicle Census, Australia, 31 Jan 2012
<http://www.abs.gov.au/ausstats/abs@.nsf/mf/9309.0>.
- Australian Bureau of Statistics (2012), 3101.0 - Australian Demographic Statistics, Mar 2012,
<http://www.abs.gov.au/ausstats/abs@.nsf/mf/3101.0>.
- Australian Government (2012). The Australian Continent, <http://australia.gov.au/about-australia/our-country/the-australian-continent>
- Australian Transport Council. (2011). National Road Safety Strategy 2011-2020. Retrieved from http://www.infrastructure.gov.au/roads/safety/national_road_safety_strategy/index.aspx.
- Australian Transport Safety Bureau. (2004). Road safety in Australia: A publication commemorating World Health Day 2004. Canberra.
- Department of Infrastructure, Transport, Regional Development and Local Government. (2007). Road crash casualties and rates, Australia, 1925 to 2005. Canberra.
- Fleiter, J. J., Watson, B., Lennon, A., King, M. J., & Shi, K. (2011). Social influences on drivers in China. *Journal of the Australasian College of Road Safety*, 22(2), 29-36.
- Ministry of Public Security (2010) Road Traffic Crash Annual Report, P.R. China
- Senserrick, T., Yu, X., Wei, D., Stevenson, M. R., & Ivers, R. (2011). Development of a supplementary education and training program for novice drivers in China. *Journal of the Australasian College of Road Safety*, 22(2), 36-41.