Application of Program Logic for Policy Development and Evaluation

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Abstract

The Road Safety Policy Unit in Centre for Road Safety (CRS) is responsible for leading the development, review and implementation of policies and projects that lead to safer vehicles, roads, people and travel speeds in NSW, with policies that are evidence based with stakeholder and community input and involvement.

The program logic model has been adopted as a policy tool to provide an integrated policy view from a safe system perspective, and to provide a focus for policy development and evaluation. It is an analytical and conceptual tool that can be flexibly applied to different road safety issues and preferably at early stages of policy development. The schematic diagram demonstrates how policy input produces a result chain, showing how interventions or actions contribute to the desired changes at different levels of road safety outcome (short/ medium/ long).

In the past two years, the Policy Unit has actively applied the program logic model to help with the design of some key road safety initiatives in NSW including Safer Drivers Course, Mandatory Alcohol Interlock Program, and the national trial of Electronic Work Diaries. The Unit is now extending the application of the model to improve understanding and analysis of broad policy issues including distraction, speed, drug driving and pedestrian safety.

Use of the program logic model has had multiple benefits including facilitating strategic discussions for policy and program design, communications, performance monitoring and evaluation, and identifying gaps for improvement.

Introduction

The Centre for Road Safety (CRS) of Transport for NSW is responsible for developing and implementing road safety policies and programs to reduce the NSW road toll. The NSW Road Safety Strategy aims to reduce the annual number of fatalities and serious injuries by at least 30 per cent by 2020. The safe system approach is adopted to address a complex road transport system by developing integrated road safety measures that take into consideration risks to all road users, the road environment, the vehicle and travel speeds. This also means having effective supportive systems in place including the licensing system, enforcement of road transport laws, and targeted communication and education resources.

CRS works collaboratively with Roads and Maritime Services, NSW Police Force, NSW Department of Justice, key organisations that represent road user groups, other government and community groups to develop customer focused and evidence based road safety policies and programs.

To this end, CRS must demonstrate to the NSW Government and the community that the road safety investments in NSW have helped to reduce deaths and injuries, and contributed to a safe, reliable and productive transport network. This paper is written from a policy practitioner's point of view that outlines a strategic policy development and evaluation approach by using the program logic model. Its application has the potential to produce multiple benefits including engagement and communication with stakeholders, ongoing performance monitoring and evaluation of policy outcomes.

Overview of program logic

'Program logic' refers to the specific hypothesized causal links between the elements of a program and its intended results. Program logic can be visually presented in an 'outcomes hierarchy', which presents the outcomes a program is intended to produce at different times, and the assumed chain of cause and effect between the activities and the desired outcomes (see Frechtling, 2007 and Funnell and Rogers, 2011).

A generic hierarchy can be a useful starting point for identifying basic assumptions for a specific program of interest and developing an outcomes hierarchy for that particular program. Figure 1 presents an example of a generic outcomes hierarchy developed for motivational programs that use deterrence strategies – for more examples see Funnell and Rogers (2011).

Figure 1: Example of a Generic Outcomes Hierarchy developed for motivational programs that use deterrence strategies

While the above example applies to a behavioural program within the road safety policy context, the model may capture any or all of the key components of the safe system approach – that addresses the road user, the road, the vehicle and travel speed, where appropriate.

Another way to view the program logic model is as a proposed framework for change and the required actions to bring about change (Funnell & Rogers, 2011). This involves undertaking a situation analysis to identify problems and opportunities and understand the causes and consequences of problems; to decide on the policy or program scope; and to articulate an outcomes chain that shows the assumed or hypothesized cause and effect between immediate and intermediate outcomes and ultimate outcomes or impacts. Program activities are then identified and developed to achieve each of the outcomes in the outcomes chain.

By drawing out the logic as a diagram, a clearer picture is formed regarding how the program is assumed to work. This approach has been applied to several road safety programs in NSW, and the following sections provide some recent examples.

Application of program logic model: Safer Drivers Course

The Safer Drivers Course was rolled out in NSW from July 2013 as a NSW Government commitment to address the over-representation of young drivers in the road toll, especially in the first six months of independent driving after attaining the provisional driver licence.

The course was designed by a board of independent road safety experts to encourage young learner drivers to understand their vulnerabilities as a novice driver and to develop low risk driving strategies. This is a new approach to training learner drivers combining theoretical and practical components, addressing both attitudinal and behavioural aspects of driving, and not focussing on driving skills and road rules. This is an optional course that supplements the NSW Graduated Licensing Scheme (GLS).

The policy team at the time wanted to articulate how this course fits into the overall GLS and how it will contribute to the road safety outcome. The team applied program theory to help develop their first program logic model to clarify the intended assumptions and outcomes behind the course. The model has assisted the team to communicate succinctly what the course is about and how it contributes to the high level road safety outcome.
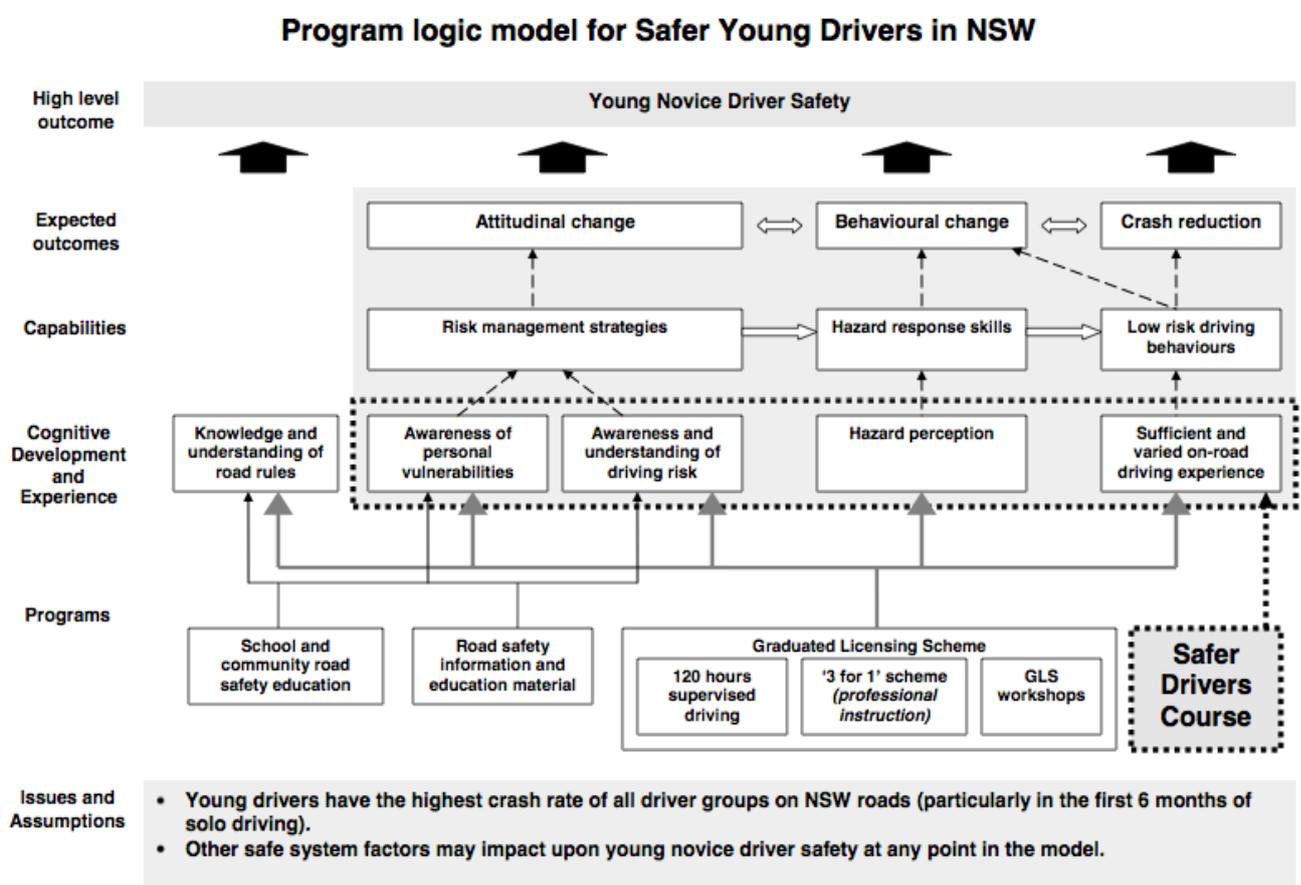

Figure 2: Program logic model for Safer Young Drivers in NSW

The key message that the model shows from the outcomes chain is that the course alone will not cause crash reduction for young drivers. However, the course alongside GLS, school and community education, and road safety information will contribute towards the desired attitudinal and behavioural change, and crash reduction.

Specifically the model highlights the key immediate outcomes of the course in supporting the young driver's cognitive development and experience, namely:
- awareness and understanding of personal vulnerabilities and driving risks
- improved hazard perception and its management
- have sufficient and varied on-road driving experience.

With further practice of the learnings from the course, it is hoped that the intermediate outcomes for young drivers will be acquiring capabilities in risk management strategies, hazard response skills, and low risk driving behaviours.

The model identifies the key development needs for the young driver to drive safely in a complex road environment, to have the appropriate attitudes and behaviour as a road user; and be supported by other safe system elements including education and information, and enforcement of road rules.

Program logic model for Mandatory Alcohol Interlock Program

There are approximately 26,000 drink drive offences in NSW each year. It is estimated that one in six offenders will re-offend with a subsequent drink driving offence within five years. Drivers convicted of drink driving offences pose a particularly high risk to the community. During the period 2007-2011, it is estimated that alcohol-related crashes cost NSW around $660M a year.

Most states in Australia already have a mandatory interlock program or are in the process of developing one. NSW Government replaced the voluntary program with a Mandatory Alcohol Interlock Program (MAIP) that commenced in February 2015. The new program is a major law reform in tackling drink driving in NSW and involved multiple government agencies including transport, police, justice, health, and the judiciary to agree to the policy settings and program elements. CRS wanted to be able to monitor the program and community impact and collect baseline and ongoing data to evaluate MAIP in the next five years.

MAIP is more complex than the former voluntary program with new program features that are essential to be monitored to determine if they contribute to effectively separating drinking from driving as intended. Research has shown that the interlock device is effective while it is installed in the vehicle, and offenders participating in the program will benefit from more long term behavioural change if their program is supported by alcohol rehabilitation and counselling.

With assistance from ARTD Consultants, a program logic model for MAIP was developed as shown in Figure 3.

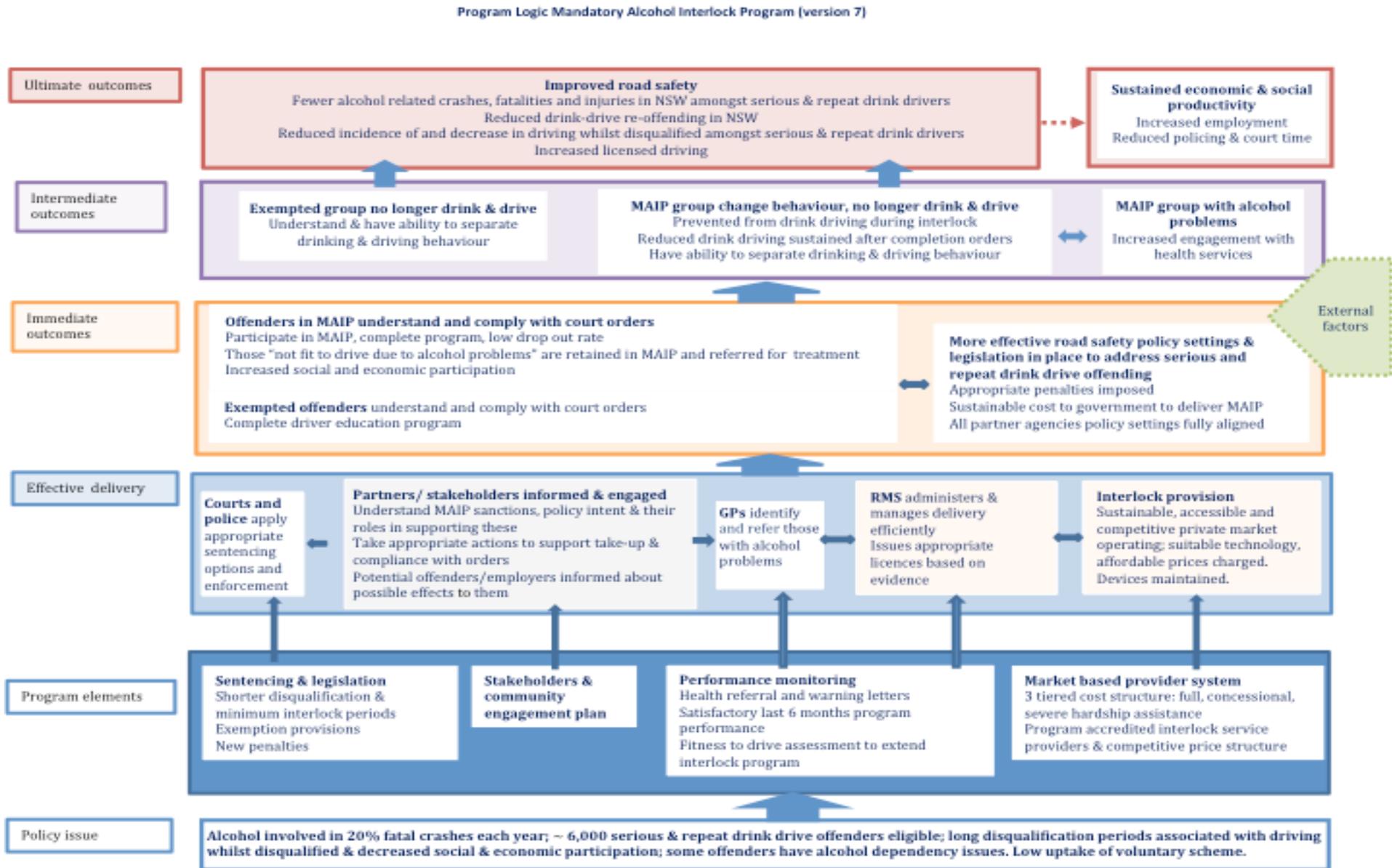Program Logic Mandatory Alcohol Interlock Program (version 7)

Figure 3: Program Logic Mandatory Alcohol Interlock Program

The road safety safe system approach is embedded in the development of the evidence based policy. Evidence was based on research on alcohol interlock programs world- wide, the process evaluation of the NSW voluntary program, crash and data analysis, and consultation with Australian jurisdictions and NSW government and community agencies. MAIP is a behavioural change program supported by an enforcement and penalty regime to provide the necessary deterrent effect to encourage offenders to remain and comply with program requirements.

The outcomes chain in the above program logic model for MAIP includes:
- having the right program elements to address the policy issue of drink driving
- having effective program delivery through the courts, interlock providers, treating doctors and licensing authority
- resulting in immediate outcomes of offenders complying with court orders to separate drinking and driving
- leading to intermediate outcomes of more lasting positive behavioural change from offenders to stop drink driving
- with the ultimate road safety outcomes and potential impact on more sustainable economic and social productivity.

The MAIP detailed program elements and delivery approaches form the integrated activities to be delivered by multi agencies and parties, to bring about the individual outcomes on the outcomes chain.

How can Program Logic shape an evaluation?

As outlined earlier, development of a program logic model enables the program to be described in terms of its intended outcomes. These outcomes can form a logical hierarchy, which can be used as a framework for evaluating the program.

Formulating a program logic can assist in the development of an evaluation plan for that program, whether it is a process, impact or outcome evaluation. This includes determining the evaluation approaches and data categories for the whole program and each of its initiatives (Cameron, 1999).

The broad data categories that can be measured for road safety evaluation include:

- Change in community awareness
- Change in road user risk perception and/or attitudes
- Change in road user behaviour
- Change in crash outcomes and/or crash risk
- Efficiency and effectiveness of program implementation

Based on the above approach, program logic models have been used to develop specific evaluation frameworks for several road safety programs in NSW, including the Safer Drivers Course and MAIP. For example, an evaluation framework has been formulated based on the MAIP program logic model with the following key questions:

- How has MAIP contributed to the NSW Road Safety Strategy 2012-2021 goal of achieving a safer community through reducing alcohol related road deaths?
- Overall, how well have the key partner agencies/ agents delivered the different program elements of MAIP and how can delivery be improved?

- Are the program design and settings meeting the policy objectives and what changes might be made to make program more effective?
- To what extent has MAIP addressed its target group of serious and repeat drink drivers?
- Are there any positive or negative indirect consequences as a result of implementing MAIP for participants, the government or the broader community?

Discussion

The program theory as in Funnell and Rogers (2011) has provided a useful framework for the development of road safety policy and programs. Application of program logic models have helped to facilitate a dialogue among key stakeholders to improve understanding and clarity of the road safety problem, and the development of the outcomes chain based on critical reasoning and road safety assumptions.

The development of a program logic model adopts a strategic planning approach and stakeholder engagement process to identify issues from all perspectives and to reach consensus on policy settings, strategic outcomes and actions. The model also provides a powerful communication tool to integrate the complex and multi-faceted policies and programs onto a single page.

Importantly, in clearly articulating a program's intended outcomes and interdependencies, the program logic model allows for clear consideration of evaluation questions, approaches and data collection. It allows for an evaluation framework to be developed early in program implementation, as observed for the Safer Drivers Course and MAIP in NSW.

The model also provides an accountability framework for stakeholders to be responsible for implementation of their specific program elements. It provides a framework for the development of performance measures, for ongoing program monitoring, evaluation and improvement.

It is possible and desirable to integrate the development of the program logic model with road safety safe system approach to ensure that outcomes and actions include key evidence and components that contribute to a safe system.

While the program logic model is a valuable policy and program development tool, it is important to understand its application to optimise its use and undertake other complementary measures to overcome any limitations.

As the conceptual framework is constructed at a particular point in time, its validity over time needs to be reviewed and confirmed. Ongoing monitoring and evaluation may identify improvement required for policy and program refinements to ensure the meeting of the ultimate road safety goal. Emerging issues due to cultural and technological changes (uncontrolled external environmental influences) may require new actions and solutions.

The development of the program logic model relies on historic and existing evidence/ knowledge to construct the framework. However, the framework then provides a basis to monitor and improve on future policies and programs.

The CRS Policy Unit is now extending the application of the model to improve understanding and analysis of broad policy issues including distraction, speed, drug driving and pedestrian safety.

References

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