Paper presented at the Australasian Evaluation Society 2005 International Conference
10 -12 October – Brisbane, Queensland www.aes.asn.au

Title: Targeting what matters in health promotion evaluation - using the RE-AIM approach to identify success in 'real world' settings.

Abstract

This paper examines the RE-AIM evaluation framework, first expounded by Russel Glasgow and colleagues (1999) as an approach that can establish the public health impact of a health promotion program. The paper presents the practical application of RE-AIM in evaluation of multi-project, multi-setting health promotion programs, illustrated by the evaluation of 3 statewide programs: a 3 year older persons health promotion program, a 3 year diabetes prevention program, and a one year health promotion program in public sector aged care, all set in Victoria, funded by the Department of Human Services. It considers how the RE-AIM approach can be employed to provide insights into 'real world' program domains of interest to funders, policy makers and health promotion practitioners that are frequently overlooked in conventional impact evaluations
The paper concludes that RE-AIM is an adaptable, easy-to-use evaluation approach suited to multi-project program evaluations that can be used in a range of settings and sectors.

Authors

Program Evaluation Unit, School of Population Health, The University of Melbourne

Rosemary McKenzie* (BA, PG Dip HP, MPH) *Presenter
Program Evaluation Unit
School of Population Health
The University of Melbourne
(Level 4, 207 Bouverie St)
Victoria, 3010

Phone: 03 9379 5275
Fax: 03 9348 1174
e-mail: rmck@teksupport.net.au

Lucio Naccarella (B Sci. (Hons) PG Dip Transcultural Mental Health)

Andrew Stewart (BA (Hons) Grad Dip Infant Mental Health)

Department of Human Services Victoria

Tony Blackwell Team Leader of Chronic Disease Strategies in the Public Health Division.

Catherine Thompson (BA Dip Ed MHSc) Manager of Aged Care Service Development

Introduction

Health promotion has an increasingly prominent role in Australian public health. Governments at state and federal level have adopted health promotion principles and frameworks to guide programs in a range of public health domains, such as healthy ageing, physical activity, sound nutrition and positive mental health, to nominate just a few important areas (DHAC, 2000; NHMRC, 1997; NHMRC, 2004; Garrard et al, 2004; VicHealth, 1999). Health promotion is also increasingly located in a population health perspective. In a population health perspective changes are sought in the health status of at risk groups, and there is an acknowledgment that the way services are organised and delivered can have a significant effect on the success of programs aimed at improving health (Rogers, Veale and Weller, 1999). However health promotion can have a lengthy causal pathway and long term changes in health status may be difficult to attribute to a specific intervention (Nutbeam, 1995). In a policy and funding environment where 'evidence-based' public health interventions are highly valued, this poses challenges for both health promotion practitioners and funders in demonstrating the value of a particular program, especially in the typical funding cycle of 1-3 years (Nutbeam 2002).

Quite justifiably, funders want to know not only **what** difference a program made, but **how** those effects were achieved, **why** they occurred, and whether they can be **maintained** over time. For an evaluator, the challenge is to develop an evaluation that can examine effectiveness or impact within the limits of the time frame but also provide other information about aspects of the program that may be crucial to decision-making about its future. Funders may want to know how feasible it is to implement a program in a particular setting, they may wish to know if all sub-groups, particularly those most in need, in a target group have participated. They may be interested in changes at an organisational level or across organisations, and they will undoubtedly be interested in the capacity of the program and its benefits to be maintained over time. The Program Evaluation Unit (PEU) in the School of Population Health at The University of Melbourne responded to these challenges by adopting the RE-AIM evaluation framework, developed by Russell Glasgow[1] and colleagues in the late 1990s (Glasgow, Vogt and Boles, 1999).

This paper explores the utility of RE-AIM for the evaluation of multi-project, multi-setting health promotion programs, illustrated by the evaluation of 3 statewide programs in Victoria between 2001 and 2005: a 3 year older persons health promotion program, a 3 year diabetes prevention program, and a one year health promotion program in public sector aged care, each funded by the Victorian Department of Human Services.

RE-AIM - where does it come from?

The RE-AIM framework has it origins in Glasgow's concerns about the 'efficacy paradigm' of much modern science (1999, p1323). He argues that in the quest to robustly demonstrate efficacy of health interventions, resultant evidence-based interventions (of proven efficacy) are nonetheless untested for their effectiveness in the busy, sometimes underfunded and less certain real world of modern public health. Trials and experimental investigations of interventions, including those around cancer

[1] See www.re-aim.org for details, resources, publications and links about the RE-AIM evaluation framework

prevention, the effects of increased physical activity, or improved diabetes management that are undertaken in controlled environments with motivated participants and dedicated research funds may well demonstrate significant individual health benefits - but what happens, Glasgow asks, when that efficacious intervention is translated in the real world, with hard to reach target groups, even whole populations, in diverse health care and community settings? Fundamentally, Glasgow argues that while a controlled test of an intervention may have high internal validity, this cannot guarantee external validity when the intervention is transferred to other, uncontrolled, settings. This is an especially important criticism of the efficacy paradigm from a population health perspective. In the real world, programs frequently aim to influence not simply individual behaviour, but seek changes in populations and sub-populations, as well as service and systems changes to maximise consumer exposure to interventions and maintain practitioner involvement in the intervention. Glasgow argues that individual, organisational and settings level results collectively make up the public health impact of an intervention. The primary motivation for the development of RE-AIM, therefore, was to provide a framework that could examine the effects of evidence-based health promotion interventions (ie derived from research) in a range of dimensions of importance in real settings.

The framework can be used in several ways. Firstly, it can be used as an assessment framework for research findings to interrogate various aspects of the research that may be crucial to those who wish to apply the findings as an intervention or program in a health care or community setting. More commonly, it can be used as an evaluation framework to assess the effects of a new, ongoing or concluding program. In the first instance, for example, trials of smoking cessation could be examined in a RE-AIM framework to determine the characteristics and representativeness of the trial participants; the specific service provider characteristics of those who delivered the intervention, service systems that supported recruitment and follow-up of participants and maintenance of participant behaviour changes. In the second instance, RE-AIM can be used by health promotion or health program staff, or evaluators, to monitor and assess the effects of a real program. It is for this latter purpose that RE-AIM has been used by PEU to undertake health promotion program evaluations. Another function of the framework potentially is as a planning tool that can identify necessary inputs and supports that may be required to achieve optimal performance in each dimension of the program.

What is RE-AIM?

RE-AIM is a model that represents 5 dimensions of program quality that collectively interact to constitute its public health impact (Glasgow, Vogt and Bowles, 1999). The dimensions are REACH, ADOPTION, EFFECTIVENESS, IMPLEMENTATION and MAINTENANCE and each is defined below.

The RE-AIM framework

- **R**each - participation and representativeness of the target population for the intervention (an individual level measure)
- **E**ffectiveness - the effects or impacts of the program, both positive and negative (both individual and organisational level measure)
- **A**doption - uptake of the intervention in agencies and settings (an organisational level measure)
- **I**mplementation - the extent to which the intervention is implemented as intended in the real world (both individual and organisational level measure)
- **M**aintenance - extent to which a program and /or the benefits it generates is sustained over time (both individual and organisational level measure).

Our experience in using RE-AIM

Our experience of RE-AIM is based on evaluation of the 3 programs described below. Each program was based on health promotion principles and each sought to achieve organisational and service environment level changes as well as individual change.

Well for Life (WFL)

The Well for Life (WFL) Initiative (2004-2005) aims to improve nutrition and physical activity for the frail elderly by focusing on change in policies and practices in community-based support providers of Planned Activity Groups (PAGs) and residential care agencies for the frail elderly. The Initiative brings together health promotion and evidence-based approaches, and encourages partnership between aged care and other parts of the primary care sector.

The aim of the WFL evaluation was to provide both quantitative and qualitative information regarding the success and challenges of the Initiative in a range of community and residential settings, to inform extension of the program in the future.

Local Diabetes Service Development (LDSD) Program (2002-2005)

The LDSD program focused on service enhancement and development to support improved diabetes management, detection and prevention in local populations within selected Primary Care Partnership (PCP) catchments. Participating projects implemented individual strategies such as lifestyle programs and self-management as well as service system developments to improve management of existing diabetes and promote early detection and prevention for at risk individuals and groups.

The aim of the evaluation of the LDSD was to

- Optimise the design and evaluation of funded projects
- Provide robust evaluation frameworks for individual projects and the program as a whole

- Yield a comprehensive final evaluation report that contributes to the evidence-base for diabetes prevention and management programs.

Older Persons Health Promotion Funding Program (OPHPFP) (2001-2004)

The aim of the OPHPFP was to assist older people to lead healthy and independent lives and to support positive ageing. This included a focus on improving knowledge, skills, participation and health promoting behaviours, as well as sustainable enhancement of structures and partnerships that would support health promotion for older people.

The aim of the OPHPFP evaluation was very similar to the aim of the LDSD program.

Evaluation methodologies used

The chosen evaluation methodology was broadly similar in each case. Program logic was initially used to clarify the program and ensure a shared understanding of the program's intended outcomes amongst stakeholders (Funnell, 1997) RE-AIM was employed as the evaluation framework, and data was gathered by six-monthly or annual self-assessment tools, supplemented by key informant interviews and a NSW Health Health Promotion Sustainability checklist (Hawe et al, 2000.) For each dimension of the RE-AIM framework, indicators for measurement and assessment were developed, data sources identified and data collection methods established. A matrix was constructed that matched key evaluation questions for each dimension of RE-AIM with selected indicators and measures.

What evaluation questions did we ask for each dimensions of RE-AIM?

Reach

Questions asked about reach were similar for each program.

What strategies were used to identify and engage high-risk groups?
To what extent were high-risk groups identified and engaged in the project?
How many consumers have participated in the projects?
What were the characteristics of participants in projects?
Which groups or sub-groups did not participate in projects?
What were the characteristics of non-participants?
How representative of the target group(s) is project reach?

Why is this domain of RE-AIM important?

In these 3 evaluations it was clear that reach was a profoundly important aspect of program performance - and Glasgow and colleagues agree with us. Successful engagement and adequate ongoing participation by the targeted population groups proved to be essential for the realisation of project objectives, upon which other aspects of the program quality depended. Putting effort into reach pays dividends in relation to program implementation, effectiveness and some aspects of maintenance. By identifying successful reach strategies project staff and agencies can add value to other projects. Similarly, identifying barriers to reach - and working out strategies to overcome them - can be very useful for the agency and funders. It can also make a useful contribution to

the evidence base for health promotion. By delineating reach as in important component of the evaluation and project monitoring, project staff are encouraged to focus on maximising participation and recognise its contribution to other elements of project quality and performance. Glasgow also notes that being able to determine the representativeness of participation in a program has significant implications for the robustness of outcome or effectiveness findings.

Effectiveness

Key evaluation questions about effectiveness were guided by the objectives of the specific program. The overarching key evaluation questions and sub-questions for Well for Life and the Older Persons Health Promotion Funding Program are shown below.

WFL
To what extent and how have the projects:
- *increased client and carer involvement in sound nutritional behaviours and physical activity;*
- *improved staff knowledge, skills and provision of nutritional and physical activity promotion and*
- *developed sustainable organizational structures and partnerships?*
- To what extent have staff knowledge, skills of nutrition and physical activity promotion improved?
- To what extent are new activities planned or underway for clients and carers?
- To what extent have benefits resulted for clients and carers from involvement in WFL?
- To what extent have the nutritional and physical activity behaviours of participating frail elderly people improved?
- Are there any observational reports or examples of improved client functional status or quality of life?
- What level of partnerships has been established in regions?

OPHPFP
To what extent and how have the projects enhanced individual healthy literacy, organisational and physical environments, participation by target groups and sustainable structures and partnerships?
- Have change agents/key decision makers, internally and externally, been identified and engaged?
- Does the community have an improved understanding of healthy ageing as a result of dissemination of project details and findings
- How are individuals, organisations and communities using the information, resources and services produced?
- What impact has the information, resources and services developed had on health promotion capacity of individuals, organisations and communities?

Why is this domain of RE-AIM important?

Effectiveness - that is, an assessment of the outcomes of a program and identification of what difference the program made - is a common focus of commissioned evaluation such as these examples. Sometimes it is the only dimension explored in a conventional outcome or impact evaluation. In RE-AIM, effectiveness is considered along side other dimensions that may influence outcomes, such as reach, adoption and implementation,

and therefore effectiveness is placed in the context of other influencing factors. RE-AIM helps to establish not only what occurred, but how and why it occurred and can help to explain lack of impact or limited effectiveness. In short, it can help us learn about failure as well as success by the rich contextual information it provides.

Adoption

The key evaluation questions on adoption, like reach, were very similar for each project.

- How many and which organisational and community stakeholders have participated in or supported the projects?
- What proportion of stakeholders have adopted the services, strategies and resources of the project?
- How representative is the adoption by stakeholders?
- Have training and training packages been adopted by agencies?
- In what ways is adoption by stakeholders occurring?
- Has the project been disseminated to stakeholders in a form that is understandable and acceptable?

Why is this domain of RE-AIM important?

Adoption is important because it tells us about the nature and level of involvement by agencies, stakeholder and settings. Without an explicit emphasis on such organisational level participation, it is easy to focus only on individual reach and effects, and overlook important contributions to program success at the organisation or settings level. Increasingly funders and policy makers are expecting programs to build cross agency collaboration and partnerships. The adoption dimension allows us to investigate organisational level involvement and also look at uptake of program resources and services beyond the lead agency. Representativeness of adoption can also be assessed. Like individual reach, adoption by targeted agencies and uptake in particular settings can be vital to the overall effectiveness of a program.

Implementation

While implementation questions varied a little across each program depending on program content, the following questions were common to each evaluation.

- To what extent have project strategies been implemented as intended?
- How have project strategies been implemented at the individual, agency and community level?
- What factors, internal and external, have impacted on the implementation of the project model and strategies?

Why is this domain of RE-AIM important?

A focus on implementation enables an assessment of the quality and appropriateness of program activities and strategies. Like reach, data on implementation can provide insights into the robustness of outcome data. Knowledge of implementation processes can allow us to make more confident assessments about the reliability and validity of outcome data. Importantly, implementation findings can also tell us a lot about what strategies can be practically and successfully implemented in a given setting and

therefore has implications for transferability of selected strategies or a whole intervention to other settings.

Maintenance

Although each program had similar questions relating to sustainability, the OPHPFP had 2 sets of projects within its timeframe that allowed for a more in-depth examination of maintenance.

- To what extent have project strategies and behaviours been institutionalised at the individual, agency and community level?
- What new structures and partnerships have emerged to enable sustained health promotion for older persons?
- What can be learnt from the completed 18 month projects that can contribute to further policy development and funding decisions in relation to older persons health promotion prior to the conclusion of the 3 year OPHPFP?
- What transferable learnings, policy implications and further research opportunities have been identified over the 3-year course of the Program?

Why is this domain of RE-AIM important?

Sustainability or maintenance is a very important consideration in health promotion programs. There is an understandable reluctance on the part of funders to invest in programs that do not produce enduring changes in individuals, organisations or communities beyond the life of the funding. Evaluators are accordingly asked to assess the sustainability or maintenance of the program. Sustainability or maintenance can be considered at the level of individual benefits, organisational changes, community changes, or even in relation to whether the health promotion focus of the original program is maintained. Glasgow cautions that maintenance shouldn't be measured under 2 years, to ensure that there is relative stability in a program. PEU did examine prospects for sustainability in the WFL evaluation, at the request of the funder, after only one-year of program implementation. Using the NSW checklist on factors associated with program maintenance it was found that most projects were able to comment on aspects of the program that might be continued, such as a focus on physical activity and nutrition in aged care activity and recreation programs.

Defining the public health impact of programs

Whilst PEU has not attempted to develop a numerical combined score of public health impact, which Glasgow suggests can be done, we have found that RE-AIM provides a comprehensive profile of not only what a program achieved, but how it was achieved and why it was achieved. Furthermore, identifying deficiencies in any of the domains allows the evaluators (and program staff) to have a much better understanding of what is needed for program improvement and can also contribute vital evidence if transfer to other settings, or dissemination of program strategies or resources is considered. It is important to note that RE-AIM is not a rigid framework. Our evaluation team broadened our understanding of the RE-AIM dimensions over time and felt comfortable in adding new measures for specific dimensions such as maintenance or organisational adoption because of our understanding of RE-AIM's intent and potential uses. The RE-AIM website encourages refinement and development of the model based on utilisation and learning.

Weaknesses of RE-AIM

The original architects acknowledge that they cannot identify the precise relationship between the various dimensions or how exactly they interact together. There is not a proven mathematical formula to capture their interaction or even each dimension's relative importance on total public health impact. We don't know for example at what point reach and implementation begin to separately or together influence effectiveness. Moreover, it is not always easy to combine the results in different dimensions to gain a total perspective on public health impact. High performance or success in one domain does not necessarily guarantee high performance in others, for example a low reach program may still yield positive effects for those participating and may be maintained over time. Does RE-AIM give us a picture of overall impact or a series of profiles around the dimensions? The term adoption can also be confusing for program staff or stakeholders. Its use in the RE-AIM framework as a dimension of organisational or settings participation is not wholly consistent with its everyday use of uptake of a particular behaviour, belief or product. Nonetheless the term fits very nicely within the RE-AIM acronym and its definition in this context can be carefully explained!

One other factor that can be perceived as a weakness is in fact its comprehensiveness. Staff collecting data for an evaluation sometimes find that collection of data across each of the 5 dimensions a somewhat arduous task - although as evaluators we believe the comprehensiveness of the information collected outweighs the time required to collect and report on al dimensions of RE-AIM. A final weakness in the eyes of some is the failure of the framework to explicitly address program costs. However our team has on occasion included some cost questions in relation to implementation and sustainability and we can see no reason why data on effects could not be further analysed for cost effectiveness assuming that accurate information was available on costs.

Final summary reflections on the RE-AIM framework

- RE-AIM provides a very rich and comprehensive body of information to assess public health impacts of a program
- Reach is fundamental to program success and a high investment in reach is likely to contribute to a high impact
- Effectiveness is the most difficult dimension of the framework in which to gather robust data in real world settings, but is strengthened by the contextual information provided by other dimensions
- Adoption provides a valuable explicit focus on organisational development which in turn underpins maintenance or sustainability
- Implementation focus is useful for monitoring quality, stimulating project improvement and staff learning, and can be used for planning the next stage of a project
- Maintenance is difficult to demonstrate in an implementation time frame of 2 and even 3 years, but can identify prospects for and factors associated with sustainability that can be specifically nurtured and pursued.

Conclusions

RE-AIM is a logical and comprehensive evaluation framework that provides insights into 'real world' program domains of interest to funders, policy makers and health promotion practitioners that are frequently overlooked in conventional impact evaluations.

Importantly it allows the evaluators to examine program effects in relation to a range of contextual considerations that will influence transferability and learning. Its domains are generally readily understood by funders, stakeholders and program staff, and funders appreciate the breadth of program information RE-AIM provides.

Overall, we recommend RE-AIM as an adaptable easy-to-use evaluation approach suited to multi-project program evaluations that can be used in a range of settings and sectors.

References

Department of Health and Aged Care. (2000) *Commonwealth, State and Territory Strategy on Healthy Ageing*, Canberra.

NHMRC (2004) Dietary Guidelines for Australian Adults at www.nhmrc.gov.au/synopses/dietsyn.htm

NHMRC (1997) Acting on Australia's weight: a strategic plan for the prevention of overweight and obesity. Commonwealth of Australia, Canberra.

RE-AIM Information site operated by the 'Work Group to Evaluate and Enhance the Reach and Dissemination of Health Promotion Interventions' at www.re-aim.org

Funnell, S (1997) Program logic: An adaptable tool for designing and evaluating programs. *Evaluation News & Comments*, July: 5-17.

Garrard, J., Lewis, B., Keleher, H., Tunny, N., Burke, L., Harper, S., and Round R. (2004) Planning for Healthy Communities: reducing the risk of cardiovascular disease and type 2 diabetes through healthier environments and lifestyles.

Glasgow, R., Vogt, T. and Boles, S. (1999) 'Evaluating the Impact of health promotion Interventions: The RE-AIM Framework'. *American Journal of Public Health* 89, 9, 1322-1327.

Hawe P, King L, Noort M, Jordens C, Lloyd B. (2000) *Indicators to Help with Capacity Building in Health Promotion*. . Viewed at http://www.health.nsw.gov.au/public-health/health-promotion/hpss/capacitybuilding/

Nutbeam, D. (2003) How does evidence influence public health policy? Tackling health inequalities in England. Health Promotion Journal of Australia. 14 (3): 154-8.

Rogers, W., Veale, B. and Weller, D. (1999) Linking General Practice with Population Health. National information Service, Department of General Practice, Flinders University: South Australia,

VicHealth. (1999) Mental Health Promotion Plan Foundation Document: 1999-2002. Melbourne