

Making decisions about health promotion and disease prevention interventions for policy and practice

A guideline for evidence-informed decision-making

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Table of Contents

Introduction	4
How to use this guideline – follow steps 1 to 10 (figure 1):	4
1. What is the problem or outcome sought?	6
2. What is your decision-making context?	7
3. What is your question?	7
4. Specify your search strategy and search the literature	8
5. Use program theory, program logic, expert opinion and/or qualitative research	8
6. Review the evidence	9
7. Classify the strength of evidence	10
8. Assess the likely impacts on health inequalities	11
9. Consider other issues that may help you choose between interventions and/or guide implementation	11
10. Make a decision / choose interventions	12
11. Link to monitoring, evaluation and research	12
12. Consider how the intervention should be implemented	13
Putting it all together	14
References	14
Other Health Development Unit tools	15

Introduction

In order to make our health promotion and disease prevention strategies more effective we need to get better at using evidence to guide our decisions about interventions (for policy and practice). This guideline aims to help the health promotion and disease prevention workforce to make better use of evidence. The potential benefit of incorporating evidence is that the program is more likely to achieve a health benefit and to be funded.

Here we refer to evidence primarily as evaluation and research evidence for intervention effectiveness or cost-effectiveness to help us answer the questions of “What interventions work?” and “Is the intervention cost-effective?” However, we recognise that research evidence also has an important role in making other types of decisions, such as “What is the problem?” and “How should an intervention be implemented?”.

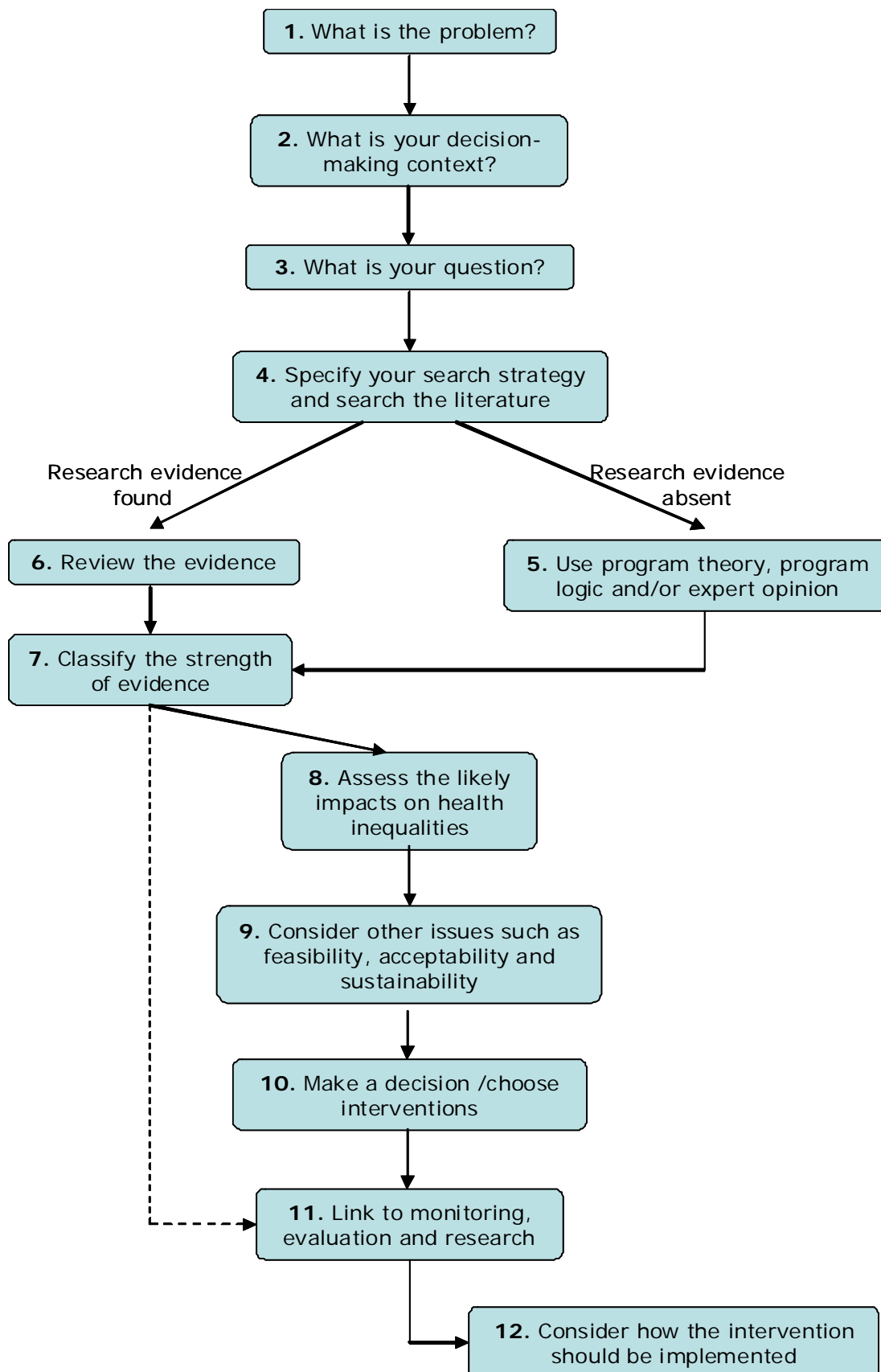
We also recognise that making a decision about what interventions to invest in requires other types of information such as contextual information (e.g. current government policy, plans and budget) and consideration of other issues such as impact on health inequalities, feasibility, sustainability and acceptability to stakeholders.

This guide tries to bring this all together in the context of making decisions about interventions.

How to use this guideline – follow steps 1 to 10 (figure 1):

1. **What is the problem or outcome sought?**
2. **What is your decision-making context?**
3. **What is your question?**
4. **Specify your search strategy and search the literature**
If quantitative research evidence is found go directly to Step 6.
If quantitative research evidence is absent go to Step 5.
5. **Use program theory, program logic, expert opinion and/or qualitative research**
6. **Review the evidence**
7. **Classify the strength of evidence**
8. **Assess the likely impacts on health inequalities**
9. **Consider other issues that may help you choose between interventions and/or guide implementation**
10. **Make a decision / choose interventions**
11. **Link to monitoring, evaluation and research**
12. **Consider how the intervention should be implemented**

Figure 1. Steps to making decisions about interventions for policy and practice



1. What is the problem or outcome sought?

The problem may be the high prevalence or incidence of a health condition (e.g. Type 2 diabetes) or a risk factor (e.g. physical inactivity). To answer this question you also need to consider whether you need to focus on a particular target group (e.g. children, adolescents, disabled). Determining whether inequalities exist will also help you to identify the target group (e.g. lower levels of physical activity in Aboriginal populations). Conversely, you may like to think about this in terms of the outcome you want to achieve rather than as a problem to be overcome (e.g. an increase in healthy eating).

Research evidence that can help you to answer the question includes prevalence studies, surveillance and monitoring data. It may also be important to consider what the determinants of the health outcome are (e.g. social isolation, unemployment etc.). To define the determinants requires evidence of a causal relationship with the health outcome. This requires a range of data and research evidence such as cohort/longitudinal and experimental studies (Hill 1965). The use of qualitative research evidence can provide an understanding of why and how causal relationships exist from the perspective of the individual.

For more information on how to use qualitative research evidence see: "How to use qualitative research evidence when making decisions about interventions" (Holt 2009).

Apart from examining the research evidence, you may also consider seeking input from other relevant stakeholders in determining the problem or the outcome sought.

Example answers to the question of "what is the problem?"

- a. Low levels of physical activity in the whole population but even lower in groups with low socio-economic status (SES) and adolescent females.
- b. Rising levels of obesity in children and adolescents in the whole population but particularly low SES and some cultural groups.
- c. Barriers to healthy eating in aboriginal communities.

Where to go for more help:

The Health Intelligence Unit, Public Health Branch can help with surveillance and monitoring data for adult Victorians – see their website at:

<http://www.health.vic.gov.au/healthstatus/index.htm>.

Data on children and adolescents is available from the Outcomes for Victoria's Children website: <http://www.education.vic.gov.au/about/directions/children/default.htm>.

2. What is your decision-making context?

You will need to consider the following:

- Relevant policy frameworks (e.g. A Fairer Victoria, National Reform Agenda, Go For Your Life Strategic Plan, National Partnership Agreement on Preventive Health) and the grey literature¹ (e.g. government reports such as the Auditor Generals Report 2007), government plans and budget commitments
- Level of decision-making, e.g. Multi-program, discrete program, individual intervention, State, Region, Local Government Area
- Scope, e.g. need for health promotion approaches that cover all health promotion action areas; to address a risk factor by focusing on its determinants.
- Reason for decision, e.g. future planning, current crisis, need to find best interventions for a specific policy commitment, e.g. physical activity policy proposals
- What is likely to be funded or has political interest?

Example

Problem

- a. Low levels of physical activity in the whole population but even lower in groups with low socio-economic status (SES) and adolescent females.

Considerations

- Go For Your Life, A Fairer Victoria, Health Promotion priorities, National Partnership Agreement on Preventive Health
- State level decision-making for next 5 years
- Need to consider health promotion approaches that consider possible action by all relevant government departments.
- Need for an approach that covers main health promotion action areas.

A program logic model may help to clarify how the problem and proposed solution (interventions / program / policy) fit together and are expected to lead to a particular health outcome.

Guidance on using program logic is available on the Health Promotion Evidence and Evaluation website. See also step 5 below for further discussion on program logic in the event of a lack of research evidence.

3. What is your question?

Here we assume that you are looking for research evidence of what interventions work (efficacy/effectiveness) and whether they are cost-effective. However, to go further you need to clarify your question in terms of:

- Populations your problem relates to
- Intervention types
- Comparisons, e.g. no intervention, other programs, treatment programs
- Outcomes
- Study types, e.g. systematic reviews, controlled trials, economic evaluations

¹ Grey literature refers to publications issued by government, academia, business and industry but not controlled by commercial publishing interests, e.g. reports, working papers, government documents, newsletters.

Note: you may have more than one question in which case you will need to specify these details for each question.

See: "How to search for evidence of intervention effectiveness and cost-effectiveness" for more help with this. Note that your answers to steps 1 and 2 will also help you with this question.

When determining which study types to include for each question we recommend that you start first with systematic reviews and cost-effectiveness analyses and then go down the strength of evidence categories (see Step 7) as necessary. If you don't find any quantitative evidence for effectiveness but need to formulate a suitable intervention, then you should consider making an argument based on expert knowledge and opinion, theoretical rationale, program logic and/or parallel evidence (see Step 5). Additionally, qualitative research can help by providing a detailed understanding of how, in what circumstances, in what ways and for which types of people a proposed intervention might work. Reasons for this include the need for new approaches (innovation) or need to cover a range of action areas. BUT ensure that if the intervention is implemented you undertake an appropriate evaluation so that you can make adjustments or change course if necessary and add to the evidence base.

4. Specify your search strategy and search the literature

How you do this will depend on the answers above. Electronic databases for systematic reviews, controlled trials and economic evaluations are listed in "How to search for evidence of intervention effectiveness and cost-effectiveness" and on the Health Promotion Evidence and Evaluation website. If you need to go further or need help specifying a search strategy for systematic reviews we recommend that you seek the help of a researcher and/or information specialist in your institution's library.

Other documents that are helpful here include syntheses of evidence such as evidence summaries, rapid reviews, evidence-based practitioner resources and policy briefs that have already been undertaken by other groups (e.g. NSW Centre for Overweight and Obesity). If good syntheses are available for your question the amount of extra searching you need to do will be minimised. See the Health Promotion Evidence and Evaluation website for syntheses and links to external sources of evidence.

If quantitative research evidence is found go directly to Step 6.

If quantitative research evidence is absent go to Step 5.

5. Use program theory, program logic, expert opinion and/or qualitative research

It is not uncommon to be confronted with the problem of a lack of quantitative research evidence but the necessity to recommend an action (innovation). In this case you should use program theory, program logic and/or expert opinion to formulate an intervention. Qualitative research can provide an understanding of how and why an intervention may/may not be successful. You can also draw on what has worked for other health issues, i.e. parallel evidence. Your ability to tell a good story is crucial and, when bringing it all together, you can

also draw on the other issues (Step 9) to make your case for the intervention, e.g. it has strong public support.

The important thing is that you ensure that the intervention is piloted and **well evaluated** before widespread implementation. You should also ensure that this gap in the research evidence informs future **research** priority setting undertaken by your organisation (or others).

Definitions:

Note: The term *program logic* is frequently used interchangeably with the terms *program theory* and *logic model*.

Program theory – a formal description of the program's concept and design. The program theory breaks down the components of the program and shows anticipated short- and long-term effects (Wikipedia - http://en.wikipedia.org/wiki/Program_evaluation).

Program logic – a program logic model in its simplest form is a picture of how a program is expected to work – a flow chart. The model provides a map for a program, illustrating 'how it is expected to work, what activities need to come before others, and how desired outcomes are achieved' (W.K. Kellogg Foundation 2004) - <http://www.wkkf.org/Pubs/Tools/Evaluation/Pub3669.pdf>.

6. Review the evidence

Assessing intervention level research evidence needs to encompass quality of study methods, validity, applicability and transferability of findings, strength of the research evidence and interpretation of study results (Rychetnik et al. 2002).

The quality of research evidence varies and this should be considered when using research evidence. There are guides developed by the Critical Appraisal Skills Programme (CASP) to help with the process of critically appraising various types of research (including qualitative research) that can be used for this purpose. See:

<http://www.phru.nhs.uk/Pages/PHD/resources.htm> Access to skills in epidemiology and/or research will help with this.

The advantage of using systematic reviews from Cochrane or from the Database of Abstracts of Reviews of Effects (DARE) is that the quality is assured and limitations highlighted. The same goes for economic evaluations that are found on the NHS Economic Evaluation Database (NHSEED) as these include an appraisal by an independent researcher with skills in the area. See: <http://www.crd.york.ac.uk/crdweb/> and <http://www3.interscience.wiley.com/cgi-bin/mrwhome/106568753/HOME>.

The other issue with research evidence is whether it is generalisable to your population or context – this requires a judgement based on what you know about the population in which the research was conducted and about your population. Are they different in ways that may affect how or whether the intervention works, e.g. cultural beliefs, gender?

7. Classify the strength of evidence

One way of assessing the quality of the research evidence is to look at the strength of evidence – based on research design². It is recommended that you use the categories outlined in Table 1. These are based on NHMRC levels of evidence (National Health and Medical Research Council 1999) plus experience from other public health projects (Department of Human Services 2007, Haby et al. 2006).

The size of effect is also important because if the impact of an intervention is large in a lower level study design you will have more confidence that the impact would remain positive with a more rigorous study design (though it may be smaller).

Note: if you've come to this step via Step 5 it is likely that the evidence for the proposed intervention will fit into strength of evidence category 6, i.e. no evidence of effectiveness. However, if the proposed intervention is supported by indirect, parallel or modelling evidence *as well as* sound theoretical rationale and program logic you may be able to make the case that it fits into strength of evidence category 3.

Table 1. Strength of evaluation and research evidence for intervention effectiveness	
1.	<i>Strong evidence of effectiveness</i> One systematic review or meta-analysis of comparative studies; or several good quality randomised controlled trials or comparative studies ^a
2.	<i>Sufficient evidence of effectiveness</i> One randomised controlled trial; one comparative study of high quality; or several comparative studies of lower quality ^b
3.	<i>Some evidence of effectiveness</i> Impact evaluation (internal or external) with pre- and post-testing ^c ; or indirect, parallel or modelling evidence with sound theoretical rationale and program logic for the intervention.
4.	<i>Weak evidence of effectiveness</i> Impact evaluation conducted but limited by pre- or post-testing only ^c ; or only indirect, parallel or modelling evidence of effectiveness.
5.	<i>Inconclusive evidence of effectiveness</i> No position could be reached because existing research/evaluations give conflicting results; or available studies are of poor quality.
6.	<i>No evidence of effectiveness</i> No position could be reached because no evidence of impact/outcome available.
7.	<i>Evidence of ineffectiveness</i> Good evaluations (high quality comparative studies ^a) show no effect or a negative effect.

^aLevels I-III, ^bLevels II-III, ^cLevel IV in NHMRC Designation of levels of evidence (National Health and Medical Research Council 1999)

² Note: these levels of evidence are relevant to assessing evidence of intervention effectiveness. There are, of course, many other types of research evidence that will require use of different hierarchies of study design, e.g. qualitative research, diagnostic tests.

Note: We are not currently advocating the use of categories of “emerging evidence” or “promising practice” because there is no clear and consistent definition for these.

If you are using qualitative research you can also refer to the following resource: A hierarchy of evidence for assessing qualitative health research (Daly et al. 2007).

8. Assess the likely impacts on health inequalities

Now assess the likely impact of each of the interventions on health inequalities. You can do this by assessing which of the health inequalities categories the intervention fits into (Table 2). This assessment addresses the capacity of the intervention to affect inequity in the distribution of the health condition or risk factor. The special needs groups considered include those with a lower socio-economic status, non-English speaking background, Aboriginal and Torres Strait Islanders, or rural/remote residence (Haby et al. 2004). In addition to the categorisation below, it may also be useful to highlight (descriptively) issues that may affect access to, or utilisation of, the intervention.

If there is likely to be a negative effect of the intervention on health inequalities (i.e. it is in category e) you should either reject the intervention or modify it to give it a more positive impact on health inequalities.

Table 2. Health inequalities categories
a. Intervention targeted for potential health improvement at population level, with an increasing rate of improvement with each step down the socio-economic gradient
b. Some health improvement at population level, with greater rate of improvement for the most disadvantaged groups
c. Likely health improvement for all groups
d. Likely health improvement for the most disadvantaged groups only
e. Greater rate of health improvement likely for advantaged groups, increasing the gap
f. Unknown impact on health inequalities

9. Consider other issues that may help you choose between interventions and/or guide implementation

Other issues that you might consider are listed in Table 3, along with definitions. These require a judgement and are not usually based on quantitative data. Qualitative research can help here. Definitions are based on those developed for the Assessing Cost-Effectiveness (ACE) projects and the catalogue of evidence-based interventions for children (Carter et al. 2008, Department of Human Services 2007, Haby et al. 2004).

Table 3. Other issues for consideration (also known as second stage filter criteria)

Feasibility: This criterion is concerned with the ease of implementing the intervention, considering factors such as the availability of appropriate expertise / workforce to implement the intervention on a national or state-wide scale, the potential size of the financial commitment, ease of implementation and the time scale for implementation.

Acceptability to stakeholders: This criterion refers to the anticipated acceptability of the proposed interventions to the various stakeholders affected by the intervention. Stakeholders include children and adolescents, parents and carers, teachers, the general community, third-party funders, health service providers, government and not for profit organisations and the private sector.

Sustainability: This criterion refers to the durability of the intervention considering such factors as the level of ongoing funding support required; the community empowerment and capacity building required and level of policy support likely to be achieved; and the likelihood of required changes in behaviours, practices and attitudes being achieved on an ongoing basis.

Potential for side-effects: This criterion refers to both positive and negative side effects arising from an intervention but not already considered or quantified in the research. These might include impacts such as other health consequences (e.g. anxiety/depression stemming from stigmatisation); environmental consequences (e.g. less pollution/congestion around schools); social capital (e.g. from empowered communities or improved social networks); increased household costs; or other economic consequences (e.g. impact on industry).

Cultural reach: This criterion refers to whether the program has been trialled with people in disadvantaged communities, Indigenous people or people from culturally and linguistically diverse backgrounds. Whether it was trialled in Australia versus overseas could also be important.

Ethics: This criterion refers to any ethical considerations and impact on human rights.

Ideally, you should also have information on total health benefit, total cost of the program and cost-effectiveness to guide your decision but this is rarely available. If there is cost-effectiveness information this should have been found through steps 3 and 4.

10. Make a decision / choose interventions

Choose between interventions based on 1-9 above. This is not easy and is generally a balancing act. Unfortunately for health promotion and disease prevention it is rare to have the luxury of deciding between several interventions based on good quality research evidence, let alone satisfy all of the above filters/issues – welcome to the world of evidence-informed policy!

11. Link to monitoring, evaluation and research

To ensure a continual improvement in the evidence base for health promotion and disease prevention it is important that what you find out about the evidence through this decision-making process is used to feed back into future research, monitoring and evaluation. You can use the categories from the strength of evidence filter (Table 1) used at Step 7 to guide the process.

- For categories 5, 6 and 7 there is clearly a **research gap** regarding effective interventions and further research may be needed to come up with alternative interventions. Use this identified research gap to inform future **research priority setting** undertaken by your organisation (or others). Alternatively, if it is necessary to act, ensure that the action undertaken is well **evaluated** – and preferably implemented on a small scale (e.g. as a pilot) until the results of the evaluation are known.
- For categories 3 or 4 it is important that, if the intervention is implemented, it should be well **evaluated**, i.e. impact evaluation with a comparison group.
- For categories 1 or 2 it may be sufficient to measure impact through **monitoring** of impact/outcomes only. However, if this is a new context or population or the intervention has particular implementation issues a good **evaluation** may be necessary.

For more information on evaluating interventions see: "Evaluation framework for health promotion and disease prevention programs".

12. Consider how the intervention should be implemented

Once you have decided on an effective and appropriate intervention consideration needs to be given to how it can be implemented to ensure maximum effectiveness. This will require work to ensure that the fidelity³ of the intervention is maintained while maximising transferability to different settings. This is likely to be most successful if it is done by people who understand the research (and/or with the input of the researchers), those that will be implementing the intervention in their setting or organisation and those that are supporting the intervention (e.g. the sponsoring organisation). Once established quality assurance processes need to be put in place to monitor fidelity over the longer term.

The implementation framework developed and applied by the U.S. Centers for Disease Control and Prevention (CDC): Replicating Effective Programs (REP) is well worth looking at (Kilbourne et al. 2007) - available at: <http://www.implementationscience.com/content/2/1/42>. Although it was developed for health services interventions the principles and processes are also likely to be applicable to health promotion interventions.

REP consists of four phases: pre-conditions (e.g. identifying need, target population, and suitable intervention), pre-implementation (e.g. intervention packaging and community input), implementation (e.g. package dissemination, training, technical assistance, and evaluation), and maintenance and evolution (e.g. preparing the intervention for sustainability). The process involved researchers, intervention developers, a community working group and organisations participating in implementation (Kilbourne et al. 2007).

Some examples of action guides that achieve replication are available at <http://www.prevent.org/content/view/141/166/>. Work may be needed though to ensure that they are appropriate for your particular setting and population.

If you are working within government the implementation guidelines published by the Australian Government Department of the Prime Minister and Cabinet will be useful. An

³ Implementation fidelity, sometimes called adherence or integrity, is a determination of how well a program is being implemented in comparison with the original program design. Fidelity is important because changes to the original program design may reduce the effectiveness of the program.

Implementation Plan is a detailed project management tool for a specific policy measure or package of measures, designed to assist agencies to manage and monitor implementation effectively. The Better Practice Guide on the Implementation of Programme and Policy Initiatives is an excellent resource that considers issues such as governance, risk management, planning, procurement and contract management, stakeholder management, resources, communication, and monitoring and review. It is intended for public sector executives and senior officers responsible for overseeing implementation of an initiative. The Guide to Preparing Implementation Plans outlines Australian Government requirements for plans and includes similar elements to the Better Practice Guide but is more applied. Both resources can be found at:

http://www.dpmc.gov.au/implementation/implementation_guide.cfm

Putting it all together

How you put this information together depends on what type of document you need to write, e.g. policy proposal, evidence case, action plan, policy brief, practitioner resource. However, there are some principles that can guide you:

1. Good writing skills are essential. Good writing tells a story, links ideas and is concise as possible.
2. Most people will not read beyond the executive summary so this should contain the main messages.
3. Tables and figures are helpful.

Making decisions that are informed by evidence is rarely easy but is very important because these decisions are more likely to ultimately result in better health and wellbeing for the population. As skills in evidence and evaluation increase and the evidence base improves the task should become a little easier.

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Other Health Development Unit tools

- i. Guideline for evidence summaries for health promotion and disease prevention interventions
- ii. How to search for evidence of intervention effectiveness and cost-effectiveness
- iii. How to use qualitative research evidence when making decisions about interventions
- iv. Evaluation framework for health promotion and disease prevention initiatives
- v. Understanding program logic

File: Making decisions about health promotion and disease prevention interventions V2.doc

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