

# Making decisions about chronic disease prevention interventions for policy and practice

A guideline for evidence-informed decision-making

Published by the Public Health Branch  
Rural and Regional Health & Aged Care Services  
Victorian Government Department of Human Services  
Melbourne, Victoria

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Melbourne.

**Suggested citation:** Haby M, Bowen S. Making decisions about chronic  
disease prevention interventions for policy and practice. A guideline for  
evidence-informed decision-making. Chronic Disease Prevention Unit,  
Victorian Government Department of Human Services: Melbourne, 2008.

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## Introduction

In order to make our chronic disease prevention and health promotion 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 chronic disease prevention workforce to make better use of evidence. The potential benefit of incorporating evidence is that the program is more likely 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 will also help us in making other types of decisions, such as "What is the problem?" and "How should an intervention be implemented?".

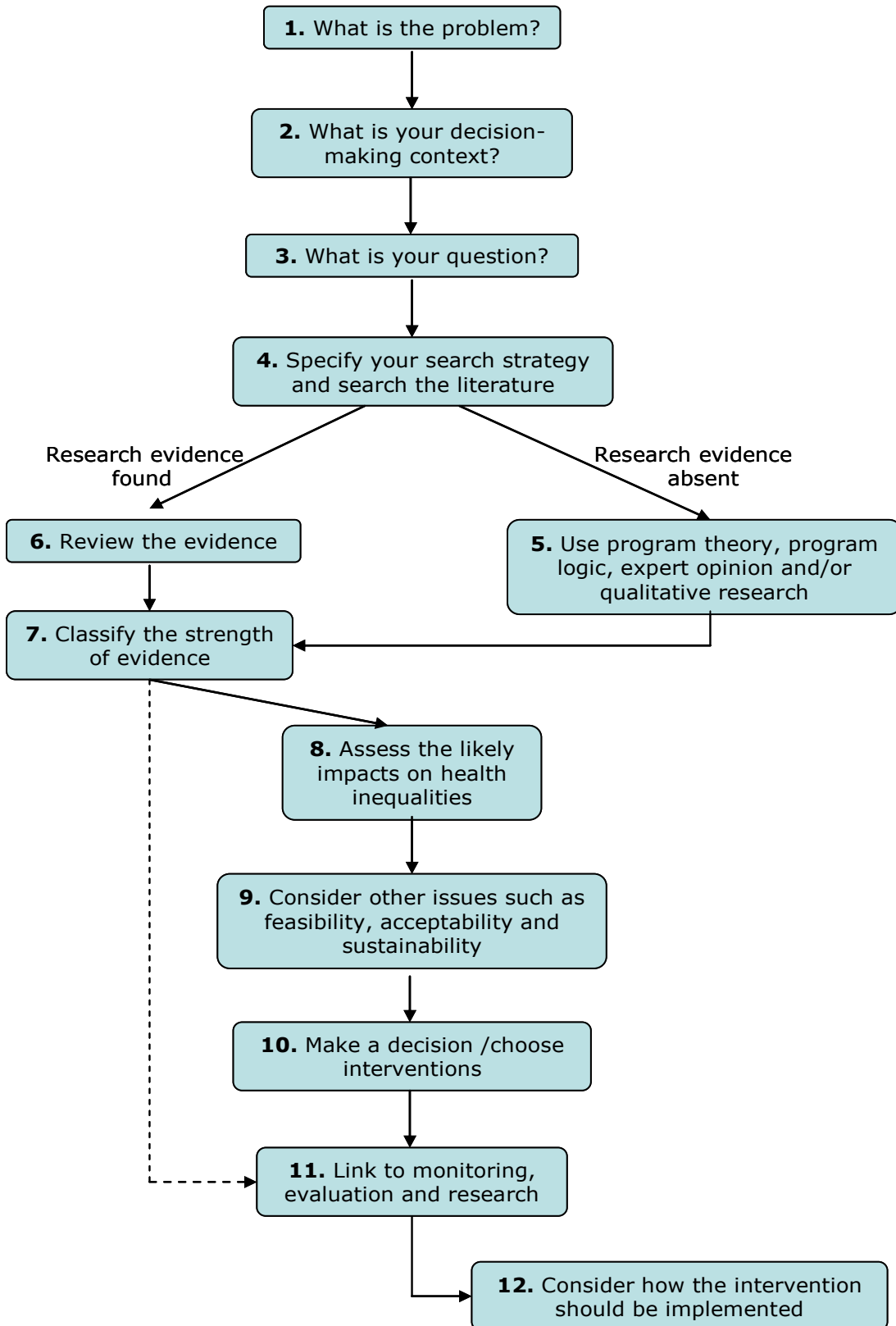
We also recognise that making a decision about what interventions to invest in requires other types of information such as contextual (e.g. current government plans and budget) and consideration of other issues such as impact on health inequalities, strength of evidence, feasibility and acceptability 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 research evidence is found go directly to Step 6.*  
*If 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 a high prevalence or incidence of a health outcome (e.g. chronic disease in general, type 2 diabetes) or a risk factor (e.g. physical inactivity). To answer this question you also need to consider the target group (e.g. children, adolescents, disabled) and whether inequalities exist as this 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, 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 (influences) of the health outcome are. 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<sup>1</sup>.

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

- a. Low levels of physical activity in whole population but even lower in low socio-economic status (SES) and adolescent females.
- b. Rising levels of obesity in children and adolescents in whole population but particularly low SES and some cultural groups.

### ***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 Statewide Outcomes for Children Division in Department of Education & Early Child Development – their website is:

<http://www.education.vic.gov.au/oecd/statewide-outcomes.html>. Contact: Joyce Cleary, Manager Monitoring and Research, Statewide Outcomes for Children, email: [cleary.joyce.e@edumail.vic.gov.au](mailto:cleary.joyce.e@edumail.vic.gov.au)

## 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) and grey literature<sup>1</sup> (e.g. government reports such as the Auditor General's 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 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?

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<sup>1</sup> 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.

**Example considerations for issue a) above but within the context of a whole of government action plan to promote physical activity:**

Go For Your Life, A Fairer Victoria, Health Promotion priorities

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 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 under development by the Strategy & Support Section of the Chronic Disease Prevention Unit. See also step 5 for further discussion on program logic in the context of 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:

- Population
- Interventions
- Comparisons, e.g. no intervention, other programs, treatment programs
- Outcomes
- Study types, e.g. systematic reviews, controlled trials, economic evaluations

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 evidence for effectiveness but need to put up some kind of intervention then you should consider making an argument based on expert knowledge and opinion, theoretical rationale, qualitative research and program logic and/or parallel evidence (see Step 5). 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 do a proper evaluation so that you can make adjustments or change course if necessary.

### 4. Specify your search strategy and search the literature

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". 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.

**Where to go for more help:**

DHS Library  
Level 27, 50 Lonsdale Street,  
Melbourne 3000,  
phone 9096 7843 fax 9096 9100  
email: [Library Reference-Desk](mailto:Library.Reference-Desk@dhs.vic.gov.au)

For further information contact: Bill Sinclair, email: [Bill.Sinclair@dhs.vic.gov.au](mailto:Bill.Sinclair@dhs.vic.gov.au)

Other documents that are helpful here include syntheses of evidence, 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: CDPU Evidence and Evaluation Portal for websites and links to syntheses (in development).

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

**If 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 research evidence but the necessity to recommend an action (innovation). In this case you should use program theory, program logic, expert opinion and qualitative research to suggest an intervention. 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](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’<sup>2</sup>.

## 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<sup>3</sup>.

The quality of research evidence varies and this should be considered when using research evidence. There are guides available for critical appraisal of various types of research that can be used for this purpose. See for example:

<http://www.phru.nhs.uk/Pages/PHD/resources.htm> Skills in epidemiology and/or research will be helpful for 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.

## 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 design. The CDPU recommends that you use the following categories (Table 1). These are based on NHMRC levels of evidence<sup>4</sup> plus experience from other public health projects<sup>5</sup>. For updates to this list of categories see the CDPU tool: “Strength of evidence filter for intervention effectiveness”

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.

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**

<b>Strength of evaluation and research evidence for intervention effectiveness</b>	
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 <sup>a</sup>
2. <i>Sufficient evidence of effectiveness</i>	One randomised controlled trial; one comparative study of high quality; or several comparative studies of lower quality <sup>b</sup>
3. <i>Some evidence of effectiveness</i>	Impact evaluation (internal or external) with pre- and post-testing <sup>c</sup> ; 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 <sup>c</sup> ; 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 <sup>a</sup> ) show no effect or a negative effect.

<sup>a</sup>Levels I-III, <sup>b</sup>Levels II-III, <sup>c</sup>Level IV in NHMRC Designation of levels of evidence <sup>4</sup>

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.

## 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 <sup>6</sup>. 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 may want to reject the intervention or modify it, if possible, to give it a more positive impact on health inequalities.

**Table 2**

<b>Health inequalities categories</b>
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<sup>6-8</sup>.

**Table 3**

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### **Other issues for consideration (also known as second stage filter criteria)**

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**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 scale, the potential size of the financial commitment, ease of implementation and the time scale for implementation.

**Acceptability to stakeholders:** This criterion referred 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 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 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 whether it impacts on human rights – definition to be developed.

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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 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 chronic 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** 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.

## 12. Consider how the intervention should be implemented

This requires evidence on implementation and is beyond the scope of this guideline.

## 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. The Strategy and Support Section of CDPU is developing guidelines and examples around some of these documents so check in regularly to the CDPU Evidence and Evaluation Portal. But keep in mind that these documents are evolving and can change depending upon political context and need.

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.

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## Other CDPU tools

- i. How to search for evidence of intervention effectiveness and cost-effectiveness
- ii. How to classify the strength of evidence for intervention effectiveness
- iii. Evaluation framework for health promotion projects
- iv. How to use qualitative research evidence when making decisions about interventions (under development)
- v. Using program logic (under development)

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**Date last updated:** 24 October 2008