A Guide to Developing Public Health Programmes

A generic programme logic model

Public Health Intelligence
Occasional bulletin Number 35

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Citation: Ministry of Health. 2006. *A Guide to Developing Public Health Programmes: A generic programme logic model. Occasional Bulletin No. 35.* Wellington: Ministry of Health.

Published in March 2006 by the
Ministry of Health
PO Box 5013, Wellington, New Zealand

ISBN 0-478-29914-1 (Book)
ISBN 0-478-29917-6 (Internet)
HP 4215

This document is available on the Ministry of Health's website:
http://www.moh.govt.nz

Acknowledgements

This document draws heavily on material from four sources.

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Contents

Purpose and Background to this Guide

This guide is to help people design and implement comprehensive, effective and measurable public health programmes that will deliver improved public health outcomes.

By developing a systematic programme logic for each public health programme, we aim to be able answer questions such as the following.

- How do we know the programme delivered better health? Are we measuring the outcomes adequately?
- What components are missing from the programme?
- Was resourcing adequate for each component of the programme and for the programme as a whole?
- Was the intervention mix effective? Was it based on evidence and/or did it generate new evidence? Does it adequately address all five strands of the 1986 Ottawa Charter for Health Promotion?
- Do new interventions need to be developed to have a comprehensive range of interventions available for each component of the programme?
- Which parts of the programme are working? Which parts of the programme are not working? Do resources need to be refocused?

A comprehensive programme should include a range of interventions consistent with the Ottawa Charter's principles of:

- promoting healthy public policy
- creating supportive environments
- strengthening community action
- developing personal skills
- reorienting health services.

In the New Zealand context, a comprehensive programme should focus on:

- a defined population's health
- addressing the determinants of health
- reducing health inequalities
- addressing Māori health by promoting the concept of whanāu ora
- using evidence-based interventions
- maximising the resources available
- being outcomes focused.

The development of such programmes is an ambitious task; this guide is to help make it happen. The guide describes a generic programme logic model and checklist that are designed to guide people through the steps of developing a thorough public health programme. At the end of the process, a specific programme logic model and associated implementation plan should be written for every public health programme. While each programme model may differ in how it looks, each should contain the components described in this document.

The guide has been developed as the first of three steps aimed at progressing objective five of *Achieving Health for All People*: 'achieving measurable progress on public health outcomes' (Ministry of Health 2003). The other two steps involve trialling the generic logic model against existing public health programmes and developing and refining the model after the trials as new programmes are developed.

The guide is intended to be a living document that is revised with experience and new developments. It attempts to strike a balance between providing a general overview of the process with clear 'how to' guidance, while refraining from being too prescriptive, and remaining a manageable size. Your comments on the usefulness or otherwise of the guide are welcome, especially suggestions on how it may be improved. These should be directed to John Wren by email: john_wren@moh.govt.nz

What is a Programme Logic Model?

The programme logic model has been described as the most recent development to come out of the thinking about measurement and outcomes monitoring. Programme logic reached its most widely recognised form in the late 1990s when United Way of America and the WK Kellogg Foundation adopted and promoted it. Through the efforts of these organisations in the United States, the logic model concept has been adopted by a many governmental and non-governmental organisations that deliver community social services, including health care and support (Penna and Emerson 2003).

A programme logic model in its simplest form is a picture of how a programme works – a flow chart. The model graphically identifies and links programme outcomes with interventions and processes and the theory and assumptions or principles underlying the programme. The model provides a map for a programme, illustrating 'how it is expected to work, what activities need to come before others, and how desired outcomes are achieved' (WK Kellogg Foundation 1998: 35).

Use of the model is a process of implementation evaluation. The objectives of the model are to (WK Kellogg Foundation 1998: 27):

- improve the effectiveness of current activities by helping initiate or modify initial activities
- provide support for maintaining the project over the long term
- provide insight into why certain goals are or are not being accomplished
- help project leaders make decisions.

In addition, implementation evaluations provide documentation for funders about the progress of a project, and can be used for developing solutions to encountered problems.

> [I]mplementation evaluation allows you to put ... outcome data in the context of what was actually done when carrying out the project.
>
> (WK Kellogg Foundation 1998: 27)

Programme logic models come in a wide variety of forms and have been categorised as the:

- outcomes or classic flow chart model
- activities or results chain model
- theory model
- spheres of influence model.

All these types of model display the logical, valid and causal relationships between a programme's goals and its objectives (Treasury Board of Canada Secretariat 1993; WK Kellogg Foundation 1998).

Outcomes models show how short-term objectives help to achieve long-term goals. They are useful for showing efforts aimed at achieving longer term or hard-to-measure outcomes.

Activities models display the order in which interventions should be implemented to ensure the programme's success. They are helpful for planning complex initiatives involving many partnerships and institutional arrangements.

Theory models reveal the underlying assumptions informing the programme. They are appropriate for complex initiatives involving many organisations, communities and target populations.

Spheres of influence models highlight the areas of control or influence available to the organisation and programme. In these models, usually only indirect influence can achieve the stated outcomes.

Commonly, a project's programme logic model will combine two or more types of model into a hybrid logic model. There is no one logic model for public health programmes. Each programme model will look different, reflecting the goals, circumstances and contributors to the programme.

The logic model in this guide simply outlines the components that should be included in any comprehensive New Zealand public health programme and outlines a process for developing a specific logic model appropriate to the task under consideration.

Examples of public health programme logic models are in Appendix A.

Logic Model for Developing New Zealand Public Health Programmes

The logic model in Figure 1 depicts the components of a comprehensive New Zealand public health programme.

The model identifies that the first stage in the development of a public health programme is the collection of informative inputs. Informative inputs are the key documents and information needed to *inform* any public health programme in New Zealand.

The next stage is for a planner to work through the *key components* that collectively create a framework through which the collected informative inputs can be analysed.

These components fall into two groups. In the first group are the essential functions any comprehensive New Zealand public health programme should deliver (ie, having a focus on a defined population's health, addressing the determinants of health, reducing health inequalities and addressing Māori health by promoting whanāu ora). In the second group are the considerations that should be taken into account when planning and monitoring a public health programme. These considerations consist of ensuring interventions will be evidence based and that resource use will be maximised and prioritised.

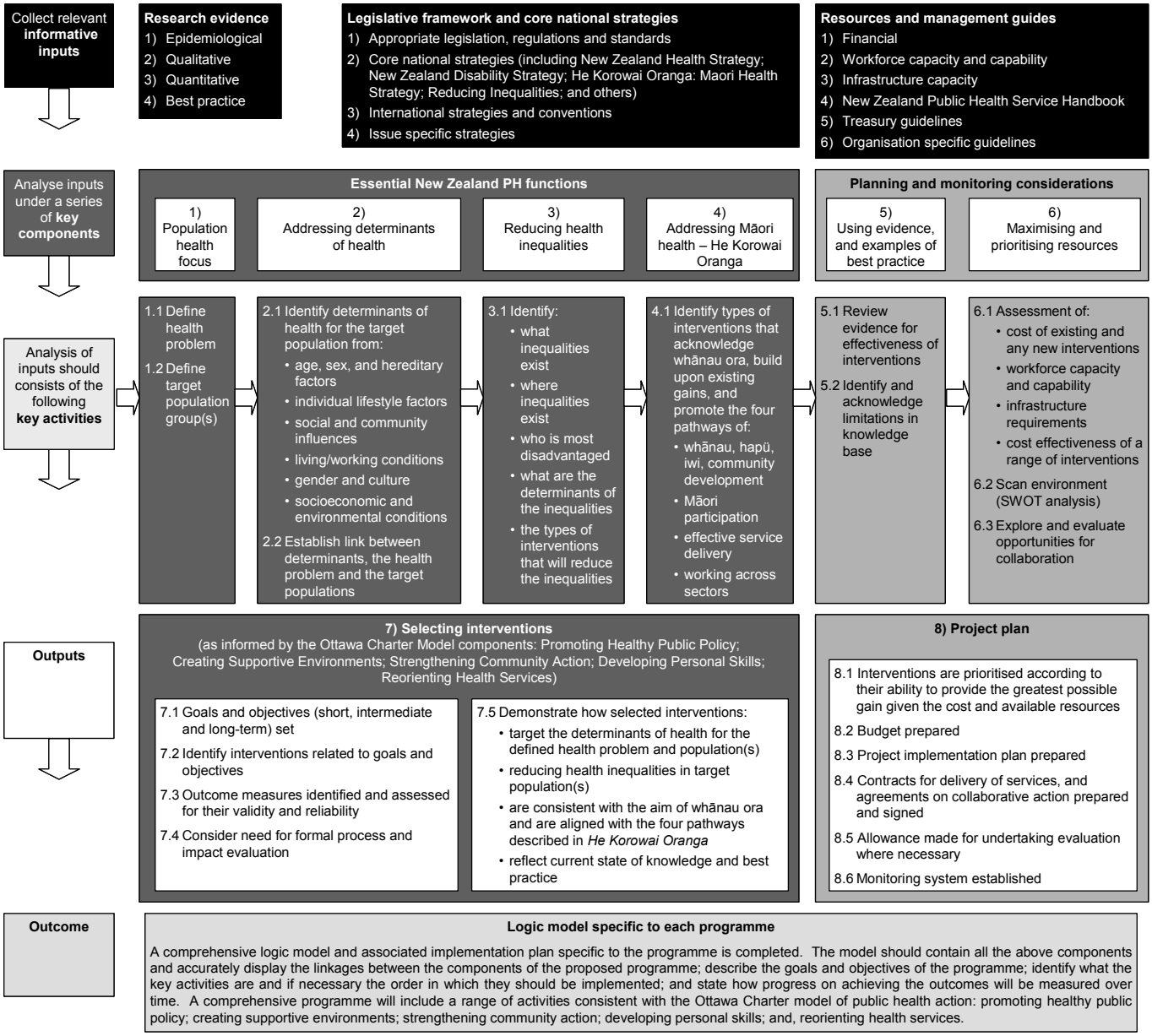
To shape the parameters of the analysis, the programme logic model identifies the *key activities* to be undertaken for each component.

Identifying and collecting the information and analysing it in accordance with the key components, will create a framework within which the public health programme can be built.

The third stage identifies the outputs to be extracted from the analysis. They will give shape to the programme and identify how it is to be created.

> When planning a public health programme, use Figure 1 to ensure you have included all the components of a comprehensive public health programme in your development process. To help you to do this, the model's elements have also been converted into a checklist in Appendix B.

Figure 1: Logic model for developing New Zealand public health programmes



Informative Inputs

The informative inputs provide the basis for your analysis of the key components associated with the development of a public health programme.

While the expected result of this first stage of planning is a body of information, it also identifies information gaps. It may reveal, for instance, that an insufficient amount of research has been undertaken but that the public health need has been identified within national or international strategies or as part of legislation. Such a result will lead to the identification of the research needed for the analysis to proceed in the key components stage.

It is also possible the situation may be reversed: a body of evidence may exist that identifies an emerging public health programme, but strategies have not been developed to guide action. In this situation, analysis as part of the key components stage will reveal the important need for policy development.

Research evidence

The importance of developing evidence-based interventions means a literature search is an important first step in the programme's planning. If this evidence exists, some studies will focus on the public health issue, other studies will consider the best interventions to address the issue. For emerging public health issues where reliable studies have not been developed, quantitative or qualitative data may at least raise the discussion about why it appears the issue is emerging.

A population health approach draws on the full range of *data types* – both qualitative and quantitative – as well as data from other sectors. Data types include environmental data, lifestyle data, vital statistics data, social and economic data, epidemiological data, health systems data, consumer information and demographic data.

Use the evidence gathered to understand the causes of the problem and health inequalities and to identify what is currently known about the most effective and efficient interventions.

Relevant legislation and strategies

Every public health programme in New Zealand should be informed by the core pieces of information that form the philosophical, legislative, evidence and resource base for public health action. Collectively, the documents identified in the logic model define and set the boundaries for public health programmes in New Zealand.

The *legislative frameworks and national strategies* provide the authorisation and operational framework for public health actions in New Zealand. International strategies and conventions may also have a significant role in defining the nature of New Zealand's obligations.

Public health programmes must comply with relevant legislation and standards. Knowledge of the legal framework is particularly important when the programme is closely related to a regulatory function, for example tobacco control and water safety standards. Programmes, such as those aimed at injury prevention, while not having a regulatory function, should also be informed about the legal setting for the programme's activities. This is important to ensure any information or advice given or activities undertaken are consistent with legislation and policy statements. For example, it would be inadvisable for a public health programme promoting playground safety to suggest the height of playground equipment should be higher than the height recommended in the relevant New Zealand standard.

The key national strategies and policy documents are:

- the New Zealand Health Strategy (Minister of Health 2000)
- He Korowai Oranga: Māori Health Strategy (Minister of Health and Associate Minister of Health 2002)
- *Reducing Inequalities in Health* (Ministry of Health 2002b) (intervention framework) and Health Equity Assessment Tool (HEAT or the equity lens)
- the New Zealand Disability Strategy (Minister for Disability Issues 2001)
- the Health of Older People Strategy (Associate Minister of Health and Minister for Disability Issues 2002)
- the *Public Health Service Handbook*.

The purpose of each of these documents is briefly described below.

The New Zealand Health Strategy forms the basis for the Government's action on health. The strategy outlines the principles for action, highlights key goals and objectives, and identifies 13 priority population health objectives for the Ministry of Health and District Health Boards (DHBs) to focus on in the short and medium term.

He Korowai Oranga: Māori Health Strategy sets out the Government's approach to improving Māori health. The strategy's aim is 'whānau ora: Māori families supported to achieve their maximum health and wellbeing' (Minister of Health and Associate Minister of Health 2002: 1). The strategy 'asks the health and disability sectors to recognise the interdependence of people, that health and wellbeing are influenced and affected by the "collective" as well as the individual, and the importance of working with people in their social contexts, not just with their physical symptoms' (Minister of Health and Associate Minister of Health 2002: 1).

Reducing Inequalities in Health sets out the Ministry of Health's response to the Government's focus on reducing health inequalities, which is a New Zealand Health Strategy priority. The Health Equity Assessment Tool supplies a set of questions to help you to consider how particular inequalities in health have come about and where the effective intervention points are to address them.

The New Zealand Disability Strategy presents a long-term plan for changing New Zealand from a disabling to an inclusive society The strategy sits alongside the New Zealand Health Strategy and is intended to ensure government departments and other government agencies consider the needs of people with disabilities before making decisions.

The Health of Older People Strategy is a key health action in the New Zealand Positive Ageing Strategy Action Plan (Ministry of Social Policy 2001). Its development has been guided by the aims and principles of the New Zealand Health Strategy, the New Zealand Disability Strategy and He Korowai Oranga: Māori Health Strategy. The Health of Older People Strategy focuses on improving older people's health status, promoting quality of life where health cannot be restored, reducing inequalities and promoting participation in social life and in decisions about health care and disability support provision.

The New Zealand Health Strategy and New Zealand Disability Strategy are the Government's platform for action on health and disability, including Māori health. The strategies' principles, goals, objectives and action and service priorities for improving the health and disability of New Zealanders are all relevant to improving Māori health. He Korowai Oranga expands the principles and objectives for Māori in both strategies, by providing more detail on how Māori health objectives can be achieved. At the same time, He Korowai Oranga exists in its own right. It sets the direction for Māori health in other service or population-group strategies, including the Primary Health Care Strategy (Minister of Health 2001), the Health of Older People Strategy (Associate Minister of Health and Minister for Disability Issues 2003) and the Public Health Strategy.

Issue-specific strategies are national strategies particular to a specific issue, for example, tobacco control, cancer control and youth suicide prevention. When planning a programme related to a national issue, refer to any existing strategy for the area.

Resource and management guides

The final key pieces of information that should be obtained are documents that outline the availability of the financial, workforce and infrastructure resources for the programme. In addition, take into account government guidelines issued by The Treasury on contracting and purchasing and internal guidelines applicable to the organisation that will run the programme.

The *New Zealand Public Health Service Handbook* describes the principles and practices used in the purchasing process and the service specifications for all services Public Health funds.

Summary of activities to implement this stage

To implement this stage, review:

- the literature on the public health issue
- the relevant legislation and standards
- core international, national and issue-specific strategies
- resource and management guides.

Key Components and Associated Activities

The following key components provide a framework within which the information inputs can be analysed. The analysis associated with each component will result in a body of information that records the essential factors about the public health issues being addressed and which must be taken into account when the interventions are designed.

Key component 1: Develop population health focus

A critical component of planning any programme is clarifying what the problem is and identifying the population (or populations) of interest.

Define population health problem

Public health has been defined as the 'science and art of preventing disease, prolonging life and promoting health through the organised efforts of society' (Acheson 1988). A public health approach is about promoting wellbeing and preventing ill health.

A population focus involves taking into account all the factors that determine health and planning how these factors can be addressed. In the context of the Ottawa Charter for Health Promotion public health action may:

- take place at many levels throughout the health sector and beyond
- be planned and implemented collaboratively with other sectors
- advise other sectors on the health impact of their activities and, where necessary, regulate these
- support other parts of the health sector to take a population health approach to service planning and delivery
- aim to influence entire population groups (eg, policy makers, communities, organisations, families and groups of individuals)
- create or advocate for healthy social, physical and cultural environments
- obtain immediate objectives, but a long timeframe may be required before the goal is achieved and it may be invisible to the public (Ministry of Health 2002a).

Define target population or populations

The collected research evidence and information on core strategies will assist you to define the health problem clearly. This information will also enable programme planners to identify the population groups to be targeted by the interventions.

Target populations are the groups served by a programme. For each intervention or action under the programme, you may have different target populations, such as:

- clients or consumers of services (eg, parents aged under 20 or low-income, sole support mothers)
- key stakeholders and decision makers (eg, community agency representatives, organisational leaders or politicians)

- secondary populations of interest (eg, the parents of parents aged under 20 or informal community leaders).

Summary of activities to implement key component 1

To implement key component 1 define the:

- population health problem
- target population (or populations).

Key component 2: Address the determinants of health

Identify determinants of health

The objective of key component 2, address the determinants of health, is to identify the determinants of health that are related to the target populations that are the focus of the public health problem.

The determining causes of ill health are complex and interrelated and include:

- age, sex and hereditary factors
- individual lifestyle factors
- social and community influences
- living and working conditions
- gender and culture
- socioeconomic and environmental conditions (NACHD 1998).

Establish links between determinants, health problem and target population

Age, sex and hereditary factors are non-modifiable determinants of health. On the other hand, socioeconomic and environmental conditions are potentially highly modifiable. Evidence clearly suggests that of these determinants of health, income is the single most important. Low income and poor health are persistently correlated world wide. With few exceptions, the financially worst off experience the highest rates of illness and death (NACHD 1998).

The main factor determining adequate income is participation in paid employment. As such, employment is an important determinant of health. In addition to providing income, employment enhances social status and improves self-esteem, provides social contact and a way of participating in community life, and enhances opportunities for regular activity, all of which help to enhance individual health and wellbeing (NACHD 1998).

Along with income and employment status, education is critical in determining people's social and economic position and health. Good evidence exists that a low level of education is associated with poor health status. Educational attainment is strongly related to subsequent occupation and income level, and poor social circumstances in early life are associated with significant chances of low educational achievement (NACHD 1998).

Poor housing is another source of poor health. Overcrowding, dampness and the cold have direct detrimental effects on a person's physical and mental health (NACHD 1998).

Cultural factors can have positive and negative influences on health. People with strong family, cultural and community ties have better health than people who are socially isolated (NACHD 1998).

Environmental factors, such as access to clear water, sewerage reticulation and electrical power are also essential to maintaining good health. The funding and provision of these basic utilities has changed in the past decade in New Zealand and issues of maintenance, infrastructure development and user charges have implications for health. Ongoing access to some of these services should not be taken for granted, particularly for people on low incomes (NACHD 1998).

Summary of activities to implement key component 2

To implement key component 2:

- identify the determinants of health for the target population
- establish links between the determinants, the health problem and the target population.

Key component 3: Reduce health inequalities

Identify inequalities, including where they exist, who they affect and interventions to reduce them

It is essential to take into account how any interventions chosen to deal with a public health problem (and the target populations particularly affected by the problem) will also deal with and reduce existing health inequalities. This component, therefore, requires you to analyse the collected information inputs to identify the inequalities existing within those populations to be targeted for the defined public health problem. It also requires you to consider the types of intervention that could address and reduce those inequalities.

In addition to collected research material, use the *Reducing Inequalities in Health* framework (Ministry of Health 2002b) and HEAT (the equity lens) to help your decision-making for this component.

Good health is not enjoyed equally across different population groups in New Zealand. Poorer people have worse health than wealthier people, but it is not just a matter of people in poverty experiencing poorer health. Across the socioeconomic gradient (whether measured by education, occupation, income or deprivation and across the whole population), the less well off experience worse health than those who are a little better off. Action to reduce inequalities therefore has the potential to improve the health of all New Zealanders (Ajwani et al 2003).

In New Zealand, ethnic identity is an important dimension of health inequalities separate from socioeconomic factors such as income and education. The health status of Māori is demonstrably poorer than that of other New Zealanders (Ajwani et al 2003). Pacific peoples also have poorer health than other New Zealanders. It is unclear how much cultural and ethnic factors contribute to population health inequalities, but New Zealand evidence suggests ethnic and cultural inequalities in health can in large part be attributed to inequalities in the underlying socioeconomic determinants of health.

Summary of activities to implement key component 3

To implement key component 3 identify:

- what inequalities exist
- where inequalities exist
- who is most disadvantaged
- the determinants of the inequalities
- the types of intervention that will reduce inequalities.

Key component 4: Address Māori health: He Korowai Oranga

Identify interventions that acknowledge whānau ora, build on existing gains and promote the four He Korowai Oranga pathways

The objective of component 4, address Māori health: He Korowai Oranga, is to use the collected information inputs to understand the attributes any public health programme should feature to address the requirements for promoting Māori health and to identify the types of activity or intervention that will meet these requirements.

The key document to assist with this component is *He Korowai Oranga: Māori Health Strategy* (Minister of Health and Associate Minister of Health 2002). It recognises that both Māori and the Government have important roles to play in making health strategies work for Māori. It also recognises that Māori want to direct and shape their future, and the application of the principles of partnership, participation and protection can do this. The principles of partnership, participation and protection (derived from the Royal Commission on Social Policy) are threaded throughout He Korowai Oranga.

- **Partnership** means working with iwi, hapū, whānau and Māori communities to develop strategies for Māori health gain and appropriate health and disability services.
- **Participation** means involving Māori at all levels of the sector in decision-making, planning, and the development and delivery of health and disability services.
- **Protection** means working to ensure Māori have at least the same level of health as non-Māori and safeguarding Māori cultural concepts, values and practices.

Using the concept of whānau ora (Māori families supported to achieve their maximum health and wellbeing), He Korowai Oranga identifies three themes and four pathways to achieving better Māori health.

The three themes are:

- rangatiratanga (recognising Māori aspirations to have control over the direction and shape of their institutions, communities and development as a people)
- building on the gains already made in Māori health
- reducing inequalities in health outcomes and improving access to services.

Ultimately, whānau ora is to achieved by following four pathways.

- **Whānau, hapū, iwi, community development** focuses on what it takes to ensure whānau stay or become healthy. When whānau can manage their own health, each whānau is strengthened, as is its ability to participate in its own communities. Services should be organised around the needs of whānau, and physical, financial and cultural barriers to accessing services need to be removed. Māori providers and workers should be developed, as they are well placed to work with whānau and hapū in holistic ways.
- **Māori participation** should be encouraged at all levels of the health and disability sector. Effective participation requires the sector to develop good partnerships with iwi and Māori communities. The capacity and capability of Māori health providers should be strengthened, and the Māori workforce provided with new types of health training and accreditation.
- **Effective service delivery** aims to reduce health inequalities for Māori by focusing on high priority issues. It is better to focus on a limited number of manageable interventions, than to attempt to do everything at once (see key component 6, maximise resources, prioritise and plan). Effective service delivery to the whole population is a duty of all service providers.
- **Working across sectors** is about government sectors working together to address the wider socioeconomic issues affecting Māori health. Working together requires having a shared interest, improved co-ordination and seamless service delivery.

All four pathways are harmonious with the Ottawa Charter's principles, and reinforce the need for comprehensive public health programmes to include interventions that address the other key components identified in this guide.

He Korowai Oranga has been widely consulted on with Māori and is well received by Māori communities. However, improving Māori health outcomes will mean a reorientation of the way Māori health and disability services are planned, funded and delivered in New Zealand. The Government, DHBs, and the health and disability sector will continue to have a responsibility to deliver improved health services for Māori; well-designed and well-funded public health programmes can help to make this happen.

Summary of activities to implement key component 4

To implement key component 4, identify the types of intervention that:

- fit with the concept of whānau ora
- build on existing Māori health gains
- reduce health inequalities
- align with the four pathways of:
  - whānau, hapū, iwi and community development
  - Māori participation
  - effective service delivery
  - working across sectors.

Key component 5: Use evidence and examples of best practice

This component requires an analysis of the collected information inputs to identify which interventions will be most effective in addressing the identified public health issue and the needs of the target populations.

Decisions about the effectiveness of interventions in social and health promotion policy and programmes are a challenge because there is often no unequivocal answer to the question, 'What works?'. However, the expanding and solid body of evidence about effective health promotion and public health interventions is robust enough to withstand critical review. This means each decision (from identifying the mix of interventions to address a health issue to determining indicators for measuring health status) should be justified by reference to the best available evidence *and* reasoning. Evidence, when used with good reasoning and principles of evaluation, answers the question, 'Why did you decide that?'.

An important question regarding evidence-based decision-making is, 'What sort of data provide appropriate evidence for particular types of decision?'. In the literature on evidence, the use of the words 'data' and 'facts' may encourage a focus on quantitative statistics (eg, mortality data) and the results of conventional scientific inquiry (eg, randomised clinical trials) as the only real 'evidence'. Answers to the question, 'Why did you decide that?' make extensive use of both formal and informal quantitative and qualitative evidence, including such qualitative methods as key informant interviews with stakeholders, case studies and consultations with experts in population-based disciplines.

Review evidence for effectiveness of interventions

To improve decision-making, answer the question, 'Is it possible to address the issue and have an impact?'.

The identification of effective interventions is aided by the development of criteria for assessing the evidence. Systematic and transparent methods governing the gathering, selection and review of relevant data must be used to minimise biases. You need to be able to explain clearly and justify the materials, methods and criteria for including or excluding a specific piece of evidence in decision-making.

However, opinions differ about what represents an intervention's effectiveness. Evidence of effectiveness is inextricably linked to the entry point (ie, the issue, population or setting) and the type of intervention. The International Union for Health Promotion and Education has stated that there can be no single 'right' method or measure to evaluate the effectiveness of interventions, and no 'absolute' form of evidence.

Nevertheless, decisions need to be made about the success (or likely success) of interventions in order to allocate resources and be accountable for those decisions. While there is a lack of traditional cost-benefit analysis work available on health promotion and population health interventions, a growing number of synthesis reports are available (for example, *The Evidence of Health Promotion Effectiveness* (IUHPE 1999)) to demonstrate that public health investments do pay dividends and have clear relevance in health, social, economic and political terms. In situations of insufficient evidence, a decision may be justified by referring to expert opinion, programme trials with mid-term evaluations, or risk-based assessments.

Identify and acknowledge limitations in the knowledge base

It should be noted that the available published research evidence for a wide range of public health issues and interventions is open to debate and in some cases is missing. For example, there is a relative lack of evidence supporting community development initiatives; in particular, evidence linking such programmes to improved health outcomes. While formal research evidence is important, where it is lacking, focus group discussions and interviews with key informants may provide useful information about the effectiveness or otherwise of the programme under review. Furthermore, in many cases, unpublished evaluations may be available by contacting the programme's co-ordinator.

The important point is that evidence is seldom conclusive, which means decisions have to be made on the basis of the available evidence and according to appropriate criteria. Assessing evidence can be difficult, so it can be helpful to form an advisory panel of people with a range of skills and knowledge.

Summary of activities to implement key component 5

To implement key component 5:

- review evidence for the effectiveness of interventions
- identify and acknowledge limitations in the knowledge base.

Key component 6: Maximise resources, prioritise and plan

The aim of component 6, maximise resources, prioritise and plan, is for you to analyse the collected information inputs to ensure the resources are directed to those areas with the greatest potential to influence health positively.

Assess possible interventions

Having collected information that defines and describes the public health problem and identifies the target populations, and having reviewed interventions that have been shown to best address the public health issue, explore the range of possible interventions further by considering factors that could impact on any final selection of interventions. These factors include:

- the cost of existing and new interventions
- the cost-effectiveness of a range of interventions
- workforce capacity and capability
- infrastructure requirements.

Assess costs and cost-effectiveness

Cost studies are another tool for helping to select and prioritise interventions.

Cost studies can be undertaken to describe the programme costs and link these to the level of outcomes achieved. In this application, the costs are compared with the level and type of outcomes documented in performance monitoring outcomes. Decisions on whether the outcomes justify the costs are based on opinions about the value of the outcomes (not monetised) and the likelihood that the outcomes are attributable to the programme.

The typical approach to cost studies is to calculate total programme costs, then an average cost per client is calculated by dividing the total by the total number of clients served or the total number of clients who meet some standardised definition of 'success'. This type of cost calculation can be linked to results of an experimental or quasi-experimental impact evaluation to estimate costs per successful client. It can also be used with performance indicators to assess the cost or cost efficiency of achieving programme goals. To make these assessments, collect information on:

- direct programme expenditures
- the costs of staff and resources provided by other agencies or diverted from other uses
- costs for purchased services
- the value of donated time and materials.

A second approach to cost estimation calculates the cost per unit of service (eg, the cost per hour of classroom instruction or the cost per hour of counselling). This type of cost calculation is then used in impact evaluations (including non-experimental evaluations) to look at the costs of different outcomes. This type of cost analysis is difficult in multi-faceted, comprehensive programmes where the level and type of service are highly variable and may involve several service providers. It is also difficult in programmes in which defining exposure to services is difficult. When possible, it is preferable to distinguish between fixed costs (eg, rent or the director's salary) and variable costs (eg, the costs of special events or the hourly costs of the recreation director). The variable costs can then be used to estimate the marginal cost of adding additional clients to the number receiving a specific unit of service.

Another approach is a cost-benefit study that provides estimates of the dollar benefits returned for each dollar spent on the programme; the key question from a policy perspective, but one not easily answered. This type of evaluation has rigorous requirements for:

- an estimate of programme costs, either per client or per unit of service
- estimates of the value of the benefits
- comparative data on programme impact (ie, an estimate of outcomes with and without the programme).

The first item should be obtainable from programme financial records, supplemented by estimates of the cost of donated or reallocated resources.

The second item can be obtained from an experimental or a quasi-experimental evaluation of programme impact or another strategy for estimating the difference between what happened and what might have happened without the programme.

The primary barrier to conducting a cost-benefit analysis of service programmes designed to change behaviour stems from the third item: placing dollar values on benefits. Many benefits are of intrinsic value (eg, reductions in family dysfunction and conflict), so they can be difficult to quantify because each person or community may place a different monetary value on the benefit.

Assess workforce capacity and infrastructure support

Assessing workforce capacity and the infrastructure support required means considering what resources are available in terms of finances, staff, time, equipment and the space to undertake the work. Questions that can be asked during the process include the following.

- Is the resource adequate for the job?
- Are there shortfalls or gaps?
- How will the shortfalls or gaps be covered?
- Is capacity building going to have to be one of the goals?

- What are other agencies and key stakeholders contributing? What could they be contributing?
- What 'in kind' goods and services are being contributed?

Scope the environment

Scoping the environment means assessing the political, economic, social, institutional and informational realities in which the public health programme will operate.

One way of doing this is to identify the programme's strengths, weaknesses, opportunities and threats (ie, a SWOT analysis). The information can be used to set broad operating parameters for the programme. This can be useful for managing expectations, setting realistic goals for the programme and eliminating interventions that, while theoretically possible albeit not highly desirable, are not feasible given environmental constraints.

Explore and evaluate opportunities for collaboration

Collaborative work requires resources in the form of people and money. Partners must have the ability to commit financial and human resources for the collaborative work to be effective. It may be necessary to challenge established 'stove-piped' budgeting practices that provide a disincentive to pool resources for common causes.

Collaboration is facilitated by having well-trained staff specifically assigned to population health work and drawn from a multitude of disciplines and professions. Staff also need dedicated time to undertake this work.

Collaborative work also requires:

- a common human resources plan that is documented and agreed to by all partner organisations
- the identification of skills requirements and opportunities for training and development
- the sharing of examples of innovative working methodologies
- a consensus on cost sharing by participating groups.

Summary of activities to implement key component 6

To implement key component 6:

- assess the:
  - cost of existing and new interventions
  - cost-effectiveness of proposed interventions
  - workforce capacity and capability for proposed interventions
  - infrastructure requirements for proposed interventions
- scope the environment
- explore and evaluate opportunities for collaboration.

Outputs

The collection of information inputs have been considered within the framework of key components to ensure important factors associated with the public health problem have been identified and can be taken into account when interventions are selected. These factors include:

- the nature of the public health problem
- the population groups that need to be targeted in relation to the public health problem
- the determinants of health associated with the public health problem and the target populations and which need to be addressed
- the nature of inequalities that exist among the target population and the types of intervention that will reduce these inequalities
- the requirements for addressing Māori health issues associated with the public health problem and the types of intervention that will fulfil these requirements
- the types of intervention regarded as being effective in addressing the public health issue and within targeted populations
- how considerations of cost, cost-effectiveness, workforce, infrastructure and the operating environment will affect any interventions that might be selected.

The next part of programme planning is to design a process whereby the completed analysis of the information inputs can be used to select the optimal interventions to address the public health issue. After this, a framework through which these interventions can be implemented is identified.

Key component 7: Select interventions

When selecting interventions follow a clear process that demonstrates how the information collected in relation to the health problem and the analysis of that information have been used to design a programme that meets all identified requirements.

Selection filter

The Ottawa Charter provides a filter through which the information analysis can be considered as part of the selection of interventions.

The charter was developed by the World Health Organization as a framework for improving the health of populations and individuals. It is used in New Zealand to frame public health strategies.

The idea behind the charter framework is that to improve population and individual health a systemic approach needs to be taken that has a focus wider than a strict bio-medical focus. Consequently, the charter's principles need to be implemented to provide a filter for thinking about the range of interventions considered appropriate for public health action. The principles are:

- promote healthy public policy

- create supportive environments
- strengthen community action
- develop personal skills
- reorient health services.

When a public health programme is planned, the interpretation of these principles should take into account the following considerations.

Promote healthy public policy

Promoting healthy public policy means supporting interventions that promote the development of new policy initiatives tackling a health problem or improving existing health policies, such as the smoke-free environments legislation, Tobacco Control Strategy, Healthy Eating Healthy Action Strategy and Cancer Control Strategy.

Another activity is undertaking health impact assessments on new government initiatives.

For Māori health, healthy public policy means Māori health is accorded high priority and is developed in partnership with Māori. He Korowai Oranga: Māori Health Strategy provides strategic direction for Māori health at a national level.

Create supportive environments

Supportive environments include the social, physical and cultural aspects of health. This means Māori concepts and practices are recognised and acted on when developing and providing public health services. The concept of whanāu ora from He Korowai Oranga: Māori Health Strategy provides a framework for developing supportive environments. Furthermore, when programmes are targeting other ethnic groups, this principle means interventions should be designed to recognise and respond appropriately to those communities.

Strengthening community

Strengthening community action involves facilitating partnerships and participation by community groups. It also means they have equitable access to resources and services. Interventions are aimed at enabling communities to own the issue and to take actions to improve the health of their communities.

Developing personal skills

Developing personal skills is about providing people with access to training, education and funding to improve their skills, knowledge and abilities to improve their health.

Reorienting health services

Reorienting health services is a major undertaking; it is about recognising that health is not just a bio-medical process. Improving the population's health also requires

recognising the socioeconomic determinants of health and the need to reduce inequalities.

Reorienting health services is also about ensuring mainstream services take greater responsibility for Māori health. The aim is to deliver effective, high-quality services safely by doing the right thing to the right people in the right way at the right time.

Set goals and objectives

Having become fully informed about the health problem being addressed and having recorded the key components associated with the problem, identify the goals and objectives for the required public health programme. These in turn will provide the framework against which you can select a set of interventions.

A programme goal statement summarises the programme's ultimate direction or desired achievement. Most health promotion programmes have a single goal, but more complex programmes may have several goals. Examples of programme goals include:

- all people of reproductive age achieve and maintain optimum reproductive health
- ensure low-income people have access to safe, affordable, nutritious food
- people acknowledge and celebrate their own sexuality, and accept and respect the diversity of sexual expression
- low-income people will gain the knowledge, skills and resources necessary to prepare nutritious food for themselves and their families.

An objective is a brief statement specifying the desired effect (or impact) of a health promotion programme (eg, how much of what should happen to whom by when). Good programme objectives:

- are aligned with the overall goal
- describe an outcome that is realistic, and for which you will be held accountable
- describe a change (eg, they use words like increase or decrease) rather than an action
- identify a specific population of interest
- are strategic priorities (ie, they are a good fit between needs, capacities and your mandate)
- are SMART objectives:
  - **s**pecific (clear and precise)
  - **m**easurable (amenable to evaluation)
  - **a**ppropriate (consistent with the programme's purpose or goal)
  - **r**easonable (ie, realistic)
  - **t**imed (ie, they have a specific timeframe for the achievement of the objective).

Whether an objective is short or long term is relative to the length of time needed to achieve the programme goal. As a general rule, the timeframe for short-term objectives

can be as short as two to three months or up to two years. The timeframe for the achievement of long-term objectives is usually two to five years.

Short-term objectives specify the short-term, or intermediate, results that need to occur to bring about sustainable long-term changes. For example, changes in knowledge need to take place to bring about long-term changes in health-related behaviours, or decision makers need to support a healthy public policy before it can be implemented. Note that short-term objectives are different from activities (which are the actions needed to achieve the objectives).

Long-term objectives specify the outcomes or changes needed to achieve programme goals, such as the reduction in the incidence of a health problem or improvements in health status resulting from the implementation of a healthy public policy or environmental supports.

Identify interventions related to goals and objectives

The interventions selected must align with the programme's goals and objectives, which have been based on the key components analysis. This analysis will have defined and described the public health problem and the attributes that need to be taken into account. In addition, key components that have provided information on best practice, cost-effectiveness and environmental and infrastructural context will be taken in account when identifying interventions.

When selecting interventions, you must be able to demonstrate how the interventions:

- will target the determinants of health for the defined health problem and target population
- will reduce health inequalities in the target population
- are consistent with whānau ora and aligned with the four pathways described in He Korowai Oranga
- reflect the current state of knowledge and best practice.

Selected interventions should reflect the Ottawa Charter's principles.

The identification of programme interventions can be time-consuming. Key challenges include:

- overcoming the tendency to focus on *your* interventions instead of the entire range of programme interventions
- thinking mainly of educational interventions or social marketing
- trying to capture precise 'titles' for the interventions too early
- unforeseen threats in the environment.

Ideally, decisions to invest should be based on clearly identifiable costs and benefits. These require a quantification of cost-effectiveness and an identification of anticipated positive health outcomes.

When making decisions, it is helpful to think about the following sorts of issue.

- What is being done? Is it effective? What remains to be done?
- What is the:
  - potential for addressing several health issues at once through a set of integrated interventions?
  - possibility that investment might do harm?
  - level of support for the proposed interventions and is it systematic, empirical evidence and/or cogent argument?
  - technical, fiscal and political feasibility and what is the environment?
  - readiness and capacity of key players to act?
  - readiness of the community for change?
  - likelihood of bringing benefits other than health benefits?
  - appropriate intervention given the organisation's mandate or role?
- What levers are available?
- What is the extent of value added?
- How easy is implementation? Is there public support?
- How cost-effective is the intervention (ie, what is the potential health improvement relative to the investments made)?

Another point to consider is that an apparent duplication of intervention activities in the programme may indicate that further thought is required to clarify what the activity is supposed to be achieving, what distinguishes it from similar activities and how it fits with other activities and objectives. To help clarify these points, ask questions such as the following.

- What is this objective about?
- How will this activity contribute?
- How and what is different about this activity compared with another related activity?

Implicit in this is the recognition that some objectives require multiple actions to occur at several levels if they are to be achieved.

As an example of possible duplication, consider the references to water fluoridation in Table 1. The activities related to water fluoridation identified as 1.5 and 2.10 could be duplicates, as currently phrased.

Table 1: Example of apparent duplication

	Key activities	Resources	Short-term outcomes	Short-term indicators	Long-term outcomes	Long-term indicators
1. Build healthy public policy						
Reduce inequalities	1.5 Further promote community water fluoridation (continue and extend activities of NOPHCS)	Increased	Increased community awareness of oral health and benefits of water fluoridation	Survey of community awareness of oral health and fluoridation	Increased demand for fluoridated water supplies leading to increased percentage of population receiving fluoridated water	Increased percentage of the population receiving optimally fluoridated drinking water
2. Create supportive environments						
Reduce inequalities	2.10 Extend water fluoridation	Increased	Population-based campaigns to promote effectiveness and safety of water fluoridation	Campaigns undertaken	Increased demand for fluoridated water supplies leading to increased percentage of population receiving fluoridated water	Increased percentage of population receiving fluoridated water (monitor New Zealand fluoridated zones)

However, by using the questions outlined above, it could be argued that both are appropriate if it is recognised that to further the objective, actions at both the policy level and in the local community environment are required. What is missing, is clarity or specificity about how each activity is going to contribute to the objective, 'What is different about each activity in its context?'. Greater clarity could be achieved, for example, if 1.5 read, 'Further promote the benefits of water fluoridation with local and regional government decision and policy makers' and 2.10 read, 'Promote improved local community knowledge of, and support for, water fluoridation'.

If in other instances of apparent duplication, further thought fails to clarify the issue, a judgment call should be made about where the activity best sits and the duplication removed. The key then is to be able to justify succinctly your rationale for moving the activity.

Identify and assess outcome measures

Measuring programme performance is essential to maintaining and enhancing support for public health programmes. In fact, being able to demonstrate measurable progress on achieving health goals is a requirement of the Ministry of Health's Statement of Intent with the Government (eg, Ministry of Health 2005). In addition, the State Services Commission's Pathfinder Project (SSC 2003a) and associated Managing for Outcomes initiative (SSC 2005) are whole-of-government initiatives aimed at improving the performance of the public service. The project requires departments to adopt a strategic and outcome-focused approach to planning, management and reporting while focusing on delivering outputs.

Measuring performance:

- facilitates change and improvement
- is a mechanism for accountability
- supports planning and decision-making around resources
- can highlight areas requiring further work.

Ideally, performance measures should provide information about:

- a change in health status and health determinants
- resource and service utilisation
- the programme's responsiveness to the target population
- the degree of community engagement.

The following advice on choosing health outcomes is adapted from work done by the European Research Group on Health Outcomes Measures (ERGHO 1996).

Align measures with programme goals and objectives

The measures selected must align with the programme's goals and objectives. It is important to understand the programme's goals and objectives so appropriate selections can be made from the many measurement instruments available. In particular, it is necessary to determine whether an intervention's effect is to be measured or descriptively assessed.

- Broadly validated instruments that have been used in other studies are required if the intervention is to describe the health status of a defined population or a specific disease category.
- Short, feasible and reliable instruments are recommended if care providers are to use them in their clinical work.

If it is intended to relate the health outcomes to the interventions, then usually combinations of condition specific and generic instruments are best.

It is important to note that the psychometric qualities of the instrument you chose must be able to support your goals and objectives. This means it is essential the measures are valid and reliable.

Validity means the instrument measures what it is supposed to measure. Reliability means that each time the measure is used it measures the same thing consistently each time.

Match measurement instrument to objective

Choose the level of observation

Is the individual patient the focus of the interest? If so, perhaps the measurement is of an individual's change due to an intervention, usually a treatment, or the observation of their health over time? Is the focus on groups of patients, for example, patients from a particular age group, with a specific disease, or submitted to a certain intervention?

If the intervention's utility or the general quality and cost-effectiveness of different care systems is the main interest, compare the quality of care between different systems, say between primary and secondary care.

Form and describe the measure's aims

What is your aim for the measure? Do you want to describe, compare or evaluate health outcomes? The selection of your instruments is highly related to the endpoints of your project. What do you want to use the instrument for?

The three principal uses for a health measure are as follows.

- A **health status measure** can be used as an indicator, measuring the situation at one point. The endpoint is descriptive. In addition to validity, both reproducibility and specificity for the chosen condition are important.
- A **health outcomes measure** can be used as a comparison, relating differences at different points, for example, before and after intervention. For this type of action, sensitivity and responsiveness to change are important. That is, the measure must be able to register small changes in people's health.
- A **health outcomes assessment** implies that, apart from being an outcome measure, it is an attempt to use the information through feedback to the users of the information.

Decide the type of instrument

In general, a condition-specific measure will have a narrow focus but will contain considerable detail in the area of interest. If you are interested, say, in one disease condition, and the assessment is mainly of symptoms and function, then use a condition-specific measure.

If specific domains, such as daily functioning or mental wellbeing in different populations, are your interest, use a dimension-specific instrument.

If you are interested in general health or in the interaction between different conditions, or if you are interested in populations that may include healthy people, use generic instruments.

If you consider the influence of other diseases or conditions can influence the results of the problem or the disease of interest, combine disease-specific and generic instruments.

Decide how many instruments

No one instrument may prove satisfactory for all purposes. You may need to combine instruments because a reasonable instrument does not exist. But be aware; when possible use the instruments in their original form; do not change them or use only parts of them: validation refers only to the complete instruments.

Be careful with translated instruments: cross-cultural validation needs to follow strict rules. The formal validation of an instrument is a costly and time-consuming process. How much of this work you do depends on your resources. And, don't forget practicalities: the necessary time to fill in questionnaires and the costs of mailing and analysis. Be reflective on your target group; not every instrument suits children or older people.

Collect information

Selecting the right measures is only part of the process of establishing a monitoring system, also give some thought to how the information may be collected and processed. There is little point in choosing the perfect set of measures if there is no feasible way to collect and use the information.

Ask the following questions.

- What is the cost of collecting the required information?
- How easy is it to access the information? Are there administrative, privacy and ethical issues?
- Has the cost of data analysis been allowed for? Who is going to do the analysis?
- Who is the audience for or user of the information?

Finally, the perfect instrument does not exist. Every instrument has its own strengths, weaknesses and peculiarities. If you are unfamiliar with the instrument that best suits your plans, seek help from someone who knows about it already. Public Health Intelligence, Ministry of Health, has extensive expertise in measuring public health outcomes – if in doubt, seek its advice.

Tip: The Pathfinder Project website has useful links to resources and sites that address part, or all, of the development of outcome measures and intervention logic models (http://io.ssc.govt.nz/pathfinder/Links.asp).

Decide whether evaluation is necessary

Accountability in the past focused on inputs (ie, the resources used), processes (ie, activities) and products. Recently, there has been a shift towards a greater emphasis on accountability for health outcomes and determining the degree of change that can be attributed to interventions. This has an impact on planning and goal-setting processes as well as on the choice of interventions or strategies used in the future. Outcome or impact evaluation is therefore essential.

Such evaluation examines long-term changes in health status and the determinants of health. These include changes in knowledge, awareness and behaviour, shifts in social, economic and environmental conditions, as well as changes to public policy and health infrastructure.

Outcome or impact evaluation also seeks to measure the reduction in health status inequities between population subgroups. It is important to identify and measure short-, medium- and long-term outcomes to ensure the ongoing support and relevance of the activity for players whose agendas are shorter term.

Many people who are responsible for health policies and programmes may resent or fear accountability, given the many factors outside their control that can impact on health outcomes. They should be reassured that the approach recommended here includes considering the full range of reasons for meeting or not meeting a target. The important question is, 'What else was going on at the same time that also had an impact?'.

Longer term outcome evaluation is essential to a comprehensive evaluation programme. This larger evaluation includes process evaluation (to determine whether a policy or programme is meeting its goal and reaching its target population) and impact evaluation (to measure the immediate results of a programme or policy).

An integral part of evaluation is accurately measuring progress towards achieving the stated objectives. Measuring involves selecting indicators related to the objectives.

Indicators are used as benchmarks, or proxy measures, to assess the extent to which objectives have been met. Matching objectives to associated indicators in a logic model helps to ensure the availability of relevant data sources for programme evaluation.

Ideally, while it is desirable to measure short and intermediate outcomes on a range of indicators, *prioritise measuring progress towards attaining the programmes key goals and outcomes*. This is particularly important when resources are scarce. It is better to have few well-developed measures that measure the key outcomes than to attempt to measure everything.

Summary of activities to implement key component 7

To implement key component 7:

- set goals and objectives (short-term, intermediate and long-term)
- identify interventions related to goals and objectives
- identify outcome measures and assess them for their validity and reliability
- decide whether a formal process and impact evaluation is needed
- demonstrate how selected interventions:
  - target the determinants of health for the defined health problem and target population
  - reduce health inequalities in the target population
  - are consistent with the aim of whānau ora and are aligned with the four pathways described in He Korowai Oranga
  - reflect the current state of knowledge and best practice.

Key component 8: Develop project plan

The project plan reflects the processes that must be worked through to implement the selected interventions.

Prioritise interventions

The range of interventions that have been identified have to be fully costed and prioritised. Consider the order in which they should be implemented to achieve the intervention's full effect. For example, there is little point in beginning an intervention if the workforce is lacking the capacity to undertake the work. In this situation, address workforce issues first, before beginning the intervention.

Similarly, some interventions may require a larger commitment of resources than is available. In such cases, give serious thought to allocating a lower priority to the intervention until sufficient resources will be available. Insufficient resources can compromise the intervention's effectiveness, and may even result in its failure. However, before doing this, seek opportunities for collaboration that may increase the resources available. Such effort is particularly important if the intervention is deemed to be crucial to the programme's success.

Collaborative initiatives also often have other benefits. For example, they provide opportunities for developing personal skills and improving workforce capacity, and may help to facilitate organisational change by exposing an organisation to issues and practices it may not usually encounter.

When thinking about prioritising interventions, remember that population health approaches are grounded in the notion that the earlier action is taken in the causal stream (the more 'upstream' the action is), the greater the potential for population health gains. Upstream action calls for the inclusion of action on the social, economic and environmental conditions that correlate with poor or excellent health. For this reason, 'upstream' interventions such as health promotion, protection and disease and injury prevention are recognised as central responsibilities within a population health paradigm. Upstream interventions are often required to address the determinants of health and reduce health inequalities. The key is to identify the interventions that will have the greatest upstream impacts.

A second, equally important stage is to decide the types of intervention to use, who should use them, to whom they should be directed, and the order in which they should be implemented to best contribute to the desired health outcome.

However, depending on the objective and the organisation delivering the programme, 'upstream' interventions may not be the most appropriate choice given context, timing, resources, mandate or evidence. Often, it is better to implement a mix of 'upstream' and 'downstream' interventions in a range of settings and across the causal chain to achieve the greatest health gain. The choice should be based on the best evidence, not on an article of faith that 'further upstream is always better'.

Another approach to planning interventions is to think about the issue in terms of balancing short-term and long-term investments. Research shows that while a variety of strategic approaches can be used, the *incremental–comprehensive dimension* is most influential in mobilising a population health agenda. The incremental–comprehensive continuum revolves around the following question, 'How much should we take on?'. The 'incremental approach' implies a step-by-step process where, for example, only one or a few health determinants are acted on initially. This approach starts out slowly with a view to developing interventions for other determinants over time. A 'comprehensive approach' implies exhaustive action of all the factors that contribute to health. This approach acts on a broader complement of health determinants. A population health approach addresses the incremental–comprehensive dimension directly, and thereby, specifies what will be accomplished in both the shorter and longer terms. This approach recognises that, to make gains in public health investments sustained, support is required, as their impacts will be realised in the medium and long term.

Competition for resources means it is often important to undertake information and education initiatives to explain and justify investments in public health programmes. Furthermore, a population health approach acknowledges that taking action on the social, economic and environmental health determinants requires influencing how other sectors apportion their resources. Investing resources to address these broader determinants of health can challenge the established interests of political leaders, some medical professionals and other groups that benefit from the status quo. Increasingly, health impact assessments are being used to challenge the status quo, in particular to address the health impacts of other policies.

To help the prioritisation and planning process, it may be helpful to use a matrix such as those in Appendices C and D, to get a picture of where the proposed interventions fit in relation to the Ottawa Charter's principles and key components 1, 2, 3 and 4.

By plotting the interventions in a matrix, it is possible to get an idea of what sequence the interventions may need to be implemented in, what the links and overlaps are between the interventions and where gaps may exist.

Finally, it may be possible to draw lines between the interventions in the matrix illustrating the links, which then form the basis of the logic model.

Develop budgets, implementation plan, timelines, contracts for services, evaluation and monitoring system

If the cost analyses are undertaken as outlined above, then preparing budgets should be a formality because the information gathered can be translated directly into the operational budgets.

One of the keys to implementation is the correct sequencing of events. This is particularly important in complex programmes that may require workforce training to occur for the programme to be implemented, or a media campaign may have to be undertaken to prepare the population for the upcoming programme.

If external contracts are required, take care that they comply with the *Public Health Service Handbook* and the contract management system protocols in the Ministry of Health. Adequate time must be allowed for the process to be followed.

Summary of activities to implement key component 8

To implement key component 8:

- prioritise interventions according to their ability to provide the greatest possible gain given the cost and available resources.
- prepare the budget
- prepare the project implementation plan.
- prepare and have signed the contracts for delivery of services and agreements on collaborative action.
- allow for undertaking evaluation where necessary.
- establish a monitoring system.

Outcome

At the end of the above process, all the key components and the associated activities should be checked off. In front of you should be a comprehensive public health programme logic model that accurately displays the links between all the components of the proposed programme. The logic model should fit on one or two pages (see the examples in Appendix A).

Accompanying the model should be 3–5 pages briefly describing the model's components and justifying the links made. The document should accurately describe the programme's goals and objectives and how they will be met. With larger or more complex projects, larger documents are likely to be required. A monitoring system should be ready to be implemented, and budgets, implementation timelines and contracts finalised.

Appendix A: Examples of Public Health Programme Logic Models

Example 1: Comprehensive public health approach to New Zealand child oral health

1 Build healthy public policy

	Key activities	Resources	Short-term outcomes	Short-term indicators	Long-term outcomes	Long-term indicators
Address determinants	1.1 Improve the collection and quality of oral health information					
	1.1.1 Establish a dental public health research unit	New	Funding for dental public health research unit	Funding gained	Dental public health unit	Good quality data about the oral health of New Zealanders available
	1.1.2 Develop a national oral health data set	New	Agreed oral health national data set	National oral health data set	National minimum clinical data set being used	National minimum data set annual review
	1.1.3 Develop periodic national oral health surveys	New	Periodic national oral health survey	National oral health survey planned	National oral health survey conducted	National oral health survey
	1.1.4 NOPHCS	Increased	NOPHCS activities monitored	NOPHCS activities monitored	NOPHCS activities monitored	NOPHCS activities monitored
	1.1.5 Improve data links across health settings	Increased	Methods to improve data links	Methods to improve data link determined	Improved data links across settings	Data links across settings developed
	1.2 Limit the promotion and advertising of harmful food and beverages	Existing	Policy options about advertising foods to children investigated and analysed (HEHA 1.4)	Policy options developed	Advertising of harmful food and beverages restricted	Advertising of harmful food and beverages restricted
	1.3 Promote minimal intervention dentistry and effective preventive strategies actively	Increased	Greater preventive focus of SDS and adolescent services	More preventive services (eg, FS and F treatments)	Greater preventive focus of SDS and adolescent oral health services	More preventive services provided (eg, FS and F treatment
	1.4 Develop and implement healthy food policies in settings such as schools, preschools, churches, hospitals and health services, tertiary institutions and marae (HEHA 1.4)	Increased	Healthy food policies developed and implemented	Healthy food policies implemented in a range of settings	Healthy food policies developed and supportive environments created	Audit of healthy food policies implemented in a range of settings

	Key activities	Resources	Short-term outcomes	Short-term indicators	Long-term outcomes	Long-term indicators
Reduce inequalities	1.5 Promote benefits of water fluoridation to local and regional government decision and policy makers	Increased	Greater community awareness of oral health and benefits of water fluoridation	Survey of community awareness of oral health and fluoridation	Increased demand for fluoridated water supplies leading to increased percentage of population receiving fluoridated water	Increased percentage of the population receiving optimally fluoridated drinking water
	1.6 Develop community-based oral health initiatives tailored for Pacific peoples and other high-risk groups	New	Community-based oral health initiatives	Programmes developed, implemented and evaluated	Effective programmes extended, ineffective programmes remodelled or terminated	Programmes developed, implemented and evaluated
Address Māori health	1.7 Support oral health initiatives tailored for Māori communities (link with mainstream services)	Increased	Oral health programmes suitable for Māori communities	Programmes suitable for Māori communities developed, implemented and evaluated	Effective programmes extended, ineffective programmes remodelled or terminated	Programmes developed, implemented and evaluated

2 Create supportive environments

	Key activities	Resources	Short-term outcomes	Short-term indicators	Long-term outcomes	Long-term indicators
Address determinants	2.1 Link oral health into the general health framework through a primary health care focus	Increased	Improved links between oral health and general health	Methods of improving links between oral health and general health identified	Actions identified to improve links between oral health and general health	Improved links between oral and general primary health care
	2.2 Link with and build on established health promotion activities that may impact positively on population oral health	Increased	Established health promotion initiatives identified and evaluated	Existing health promotion initiatives identified and evaluated	Improved links between regional health promotion initiatives	Improved links between regional health promotion initiative
	2.3 Ensure food industry adopts best practice techniques for food preparation, cooking and serving (HEHA Action 2.8)	Increased	Best practice adopted	Best practice adopted	Less sugar in commercially prepared foods	Less sugar in commercially prepared foods
	2.4 Investigate options to increase profile of healthy food choices in media, advertising and promotions (HEHA Action 2.6)	Increased	Options to increase the profile of healthy food choices investigated	Options to increase the profile of healthy food choices considered and actions agreed	Increased profile of healthy food and physical activity through media, advertising and promotion	Agreed actions implemented
	2.5 Promote oral health and awareness of child oral health services	New	Appropriate initiatives undertaken to promote oral health and awareness of oral health services	Initiatives to promote oral health and awareness of oral health services undertaken	Improved awareness of oral health translated into improved access to services	Improved uptake of child oral health services

	Key activities	Resources	Short-term outcomes	Short-term indicators	Long-term outcomes	Long-term indicators
	2.6 Work with Accident Compensation Corporation (ACC) to promote safe environments for infants and young children within homes, preschools, schools and playgrounds	New	Appropriate initiatives undertaken in collaboration with ACC	Appropriate initiatives undertaken in collaboration with ACC	Fewer orofacial injuries involving children and adolescents	Fewer orofacial injuries involving children and adolescents
	2.7 Promote intersectoral and organisational collaboration and partnerships to improve oral health	Increased	Improved links between health services and improved collaboration with other sectors (eg, education)	Improved collaborative efforts	Improved links between health services and improved collaboration with other sectors (eg, education)	Improved collaborative efforts
	2.8 Investigate options to work collaboratively with oral health industry for promotion of oral health initiatives	New	Options for collaboration with oral health industry investigated	Options for collaboration with oral health industry identified	Collaborative activities undertaken	Collaborative activities undertaken
	2.9 Provide national level support for oral health promotion programmes	Increased	NOPHCS identified and supported oral health promotion activities operating nationally	NOPHCS identified oral health promotion activities operating nationally	NOPHCS continues to identify and support oral health promotion activities operating nationally	NOPHCS support and co-ordination activities monitored
Reduce inequalities	2.10 Promote improved local community knowledge of, and support for, water fluoridation	Increased	Population-based campaigns to promote effectiveness and safety of water fluoridation	Campaigns to promote effectiveness and safety of water fluoridation undertaken	Increased demand for fluoridated water supplies leading to increased percentage of population receiving fluoridated water	Increased percentage of population receiving fluoridated water (monitor New Zealand fluoridated zones)
	2.11 Increase availability of alternative fluoride sources	New	Most appropriate methods to increase availability of fluorides investigated	Methods to increase availability of fluorides identified	Identified actions to improve availability of fluorides undertaken	Improved availability of alternative fluoride sources
	2.12 Improve access to oral health services	Increased	Research supported to identify barriers to accessing oral health services	Barriers identified	Appropriate strategies to improve access implemented	Improved access to oral health services
	2.13 Support development of Pacific dental workforce	Increased	Dental careers promoted to Pacific peoples and more Pacific students in oral health courses	Number of Pacific students in oral health courses	More Pacific dental professionals	Number of Pacific dental professionals
Address Māori health	2.14 Support development of Māori dental workforce	Increased	Dental careers promoted to Māori and more Māori students in oral health courses	Number of Māori students in oral health courses	More Māori dental professionals	Number of Māori dental professionals

3 Strengthen community action

	Key activities	Resources	Short-term outcomes	Short-term indicators	Long-term outcomes	Long-term indicators
Address determinants	3.1 Help schools, preschools, churches, hospitals and health services, tertiary institutions and marae to develop and implement oral health promotion activities	Increased	Greater emphasis on oral health in school programmes (eg, HPS) Healthy food policies Good quality drinking water freely available	Number of schools with oral health component Healthy food policies Good quality drinking water freely available	Oral health promotion programmes evident in all schools Healthy food policies implemented Good quality drinking water freely available	Number of school oral health programmes Healthy food policies implemented in variety of settings Good quality drinking water freely available
	3.2 Provide oral health promotion training for groups such as health professionals, community health workers, childcare workers, Well Child providers and community pharmacy staff	Increased	Oral health modules for allied health professionals and teachers	Oral health modules for allied health professionals and teachers	Improved oral health knowledge of allied health professionals and teachers	Survey oral health knowledge of allied health professionals and teachers
	3.3 Develop resources for health workers and teachers	New	Resources for health workers and teachers	Resources for health workers and teachers	Increased use of resources relating to oral health	Use of oral health resources monitored and updated as required
	3.4 Promote community decision-making processes (eg, fluoridation, DHB-funded services (not local councils))	Increased	More oral health information provided to community (eg, through water fluoridation website and public libraries)	Increased oral health awareness among community groups (eg, schools and non-governmental organisations (NGOs))	Increased community involvement in decision-making	Increased community involvement in decision-making
Reduce inequalities	3.5 Develop community-based oral health initiatives tailored for Pacific peoples and other high-risk groups	Increased	See 1.6	See 1.6	See 1.6	See 1.6
Address Māori health	3.6 Support oral health initiatives tailored for Māori communities (link with mainstream services)	Increased	See 1.7	See 1.7	See 1.7	See 1.7

4 Develop life skills and resilience

	Key activities	Resources	Short-term outcomes	Short-term indicators	Long-term outcomes	Long-term indicators
Address determinants	4.1 Develop capability and capacity of dental workforce	Increased				
	4.1.1 Size		Continued monitoring of dental workforce (DCNZ)	DCNZ annual workforce data	Continued monitoring of dental workforce (DCNZ)	DCNZ annual workforce data
	4.1.2 Ethnic composition		Greater proportion of Māori and Pacific peoples in dental training programmes	Number of Māori and Pacific students in dental training programmes	Increase proportion of Māori and Pacific peoples in oral health workforce	Number of Māori and Pacific dental professionals
	4.1.3 Cultural competence		Training modules on culture and ethnicity at undergraduate and postgraduate levels	Training modules developed	Dental professionals and students attend training modules on culture and ethnicity	Number of students and dental professionals attending module on culture and ethnicity
	4.2 Promote early assessment and recognition of oral health risk in preschoolers	Increased	More preschool oral health assessments (Well Child link)	Preschool assessment and SDS utilisation data	More preschool oral health assessments and greater preschool utilisation of SDS	Preschool assessment and SDS utilisation data
	4.3 Promote adolescent ownership of oral health	Increased	Greater adolescent uptake of dental services and improved self care	Adolescent enrolments	Greater adolescent uptake of dental services and improved adolescent oral health	Number of adolescents completing treatment annually and adolescent oral health data
	4.4 Promote regular oral self-care using fluoridated toothpaste and dental floss	Increased	Increased use of fluoridated toothpaste and dental floss	Improved oral cleanliness and improved oral health	Increased use of fluoridated toothpaste and dental floss	Improved oral cleanliness and improved oral health
	4.5 Promote use of mouthguards and helmets in contact and high-risk sports	Increased (alongside ACC initiatives)	Mouthguards compulsory for contact sports	Less maxillofacial trauma resulting from sporting injuries	Mouthguards compulsory for contact sports	Less maxillofacial trauma resulting from sporting injuries
Reduce inequalities	4.6 Develop community-based oral health initiatives tailored for Pacific peoples and other high-risk groups	Increased	See 1.6	See 1.6	See 1.6	See 1.6
	4.7 Support oral health initiatives tailored for Māori communities (link with mainstream services)	Increased	See 1.7	See 1.7	See 1.7	See 1.7
	4.8 Develop capability and capacity of dental workforce	Increased	Improved enrolment in allied dental training courses and extension of train-the-trainer programmes	Number of students in training and more health workers with oral health training	More allied dental workers	More allied dental workers

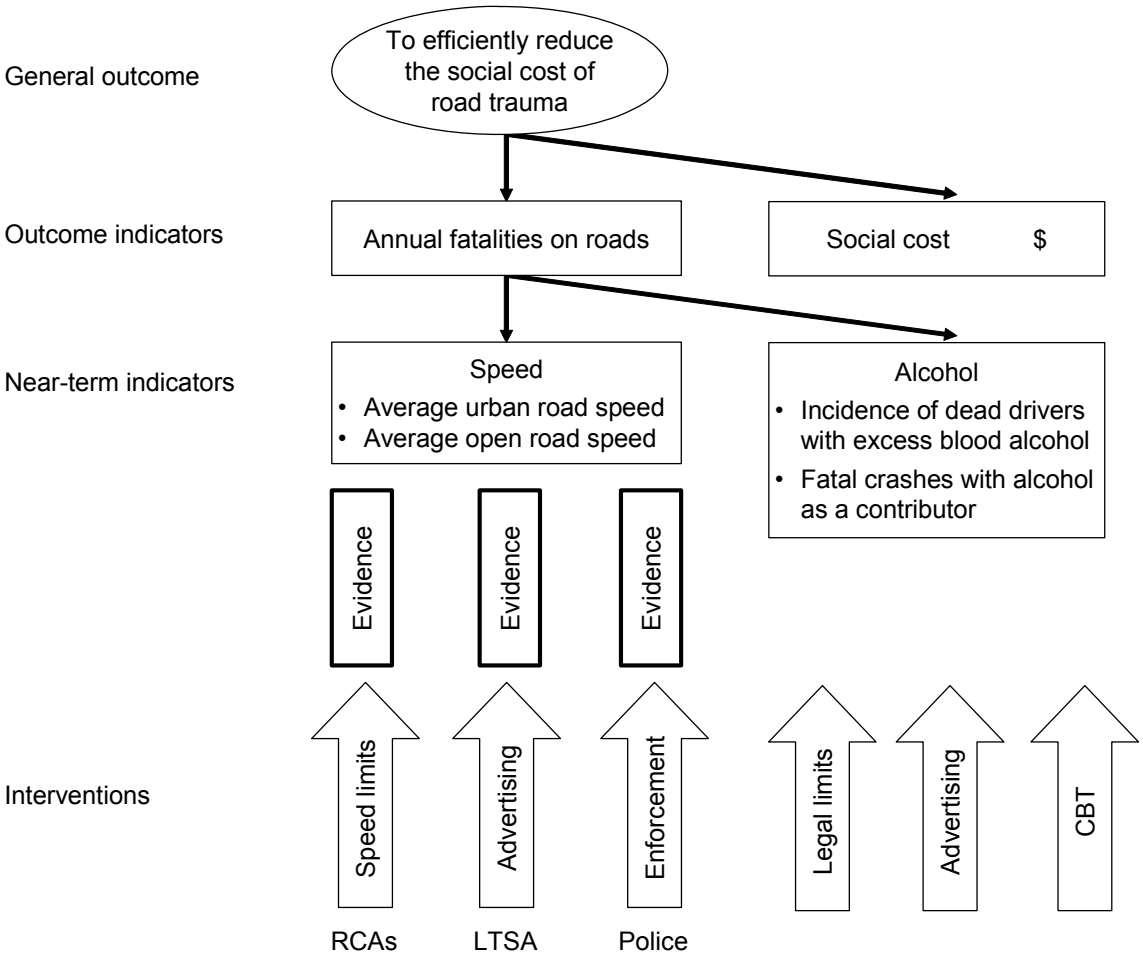
	Key activities	Resources	Short-term outcomes	Short-term indicators	Long-term outcomes	Long-term indicators
Address Māori health	4.9 Promote a Māori cultural base in oral health promotion	Increased	Work with Māori to improve Māori cultural base in oral health promotion	Ways to improve Māori cultural base identified	Undertake recommended actions	Identified actions undertaken

5 Reorient health services

	Key activities	Resources	Short-term outcomes	Short-term indicators	Long-term outcomes	Long-term indicators
Address determinants	5.1 Encourage collaboration among NGOs, health, disability and social services in delivering dental services	Increased	Improved collaboration	Improved collaboration	Improved collaboration	Improved collaboration
	5.2 Strengthen skills, knowledge and commitment of dental workforce to reducing inequalities, promoting public health and focusing on prevention of oral disease	Existing	Increased provision of preventive dental treatment and increased preventive activities	Increased provision of preventive dental treatment and increased preventive activities	Increased provision of preventive dental treatment and increased preventive activities	Increased provision of preventive dental treatment and increased preventive activities
	5.3 Increase preventive focus of child and adolescent oral health services	Existing	Increased provision of preventive dental treatment and maintained short recall intervals for high-risk children	Number of preventive treatments provided and number of children on short recall	Increased provision of preventive dental treatment and maintained short recall intervals for high-risk children	Number of preventive treatments provided and number of children on short recall
Reduce inequalities	5.4 Improve accessibility of dental services	Increased	Research to identify barriers to accessing oral health services supported and funding to improve access to services provided	Barriers identified	Strategies to improve access implemented	Number of children and adolescents enrolled and completing treatment annually
	5.5 Improve and update SDS facilities and reconfigure services to enable distribution of resources to people most in need	Increased	SDS review completed and improvements planned	SDS review completed	Improved and updated facilities as recommended by SDS review	Improvements made in accordance with SDS review
	5.6 Work with primary care and other community service providers to include oral health	Increased				
	5.7 Reorient adolescent services to improve acceptability and uptake of services	Increased	Pilot projects focusing on adolescents	Pilot projects established and evaluated	Successful pilot programmes extended	Percentage of adolescents enrolled and completing treatment within adolescent oral health services

	Key activities	Resources	Short-term outcomes	Short-term indicators	Long-term outcomes	Long-term indicators
	5.8 Improve referral and availability of specialist dental care and general anaesthesia	Increased	Earlier identification of problems and referral for specialist care/GA	Earlier identification of problems and referral for specialist care/GA	Earlier identification of problems and referral for specialist care/GA	Earlier identification of problems and referral for specialist care/GA
Address Māori health	5.9 Develop partnerships between Māori and mainstream health services further	Increased	Appropriate ways of developing partnerships between Māori and mainstream health services determined	Methods to improve partnerships identified	Strengthened partnerships between Māori and mainstream health services	Strengthened partnerships between Māori and mainstream health services
	5.10 Work with Māori service providers to establish most effective ways to include dental public health strategies	Increased	Māori service providers worked with to establish most effective ways to include dental public health strategies	Effective methods of promoting dental public health within existing Māori services identified and trialled	Extension of successful methods of promoting dental public health within Māori services	Improved oranga niho
	5.11 Improve dental professionals' cultural competence	New	Appropriate methods of improving cultural competence investigated	Appropriate methods of improving cultural competence identified	Appropriate methods implemented	Improved cultural competence of dental professionals

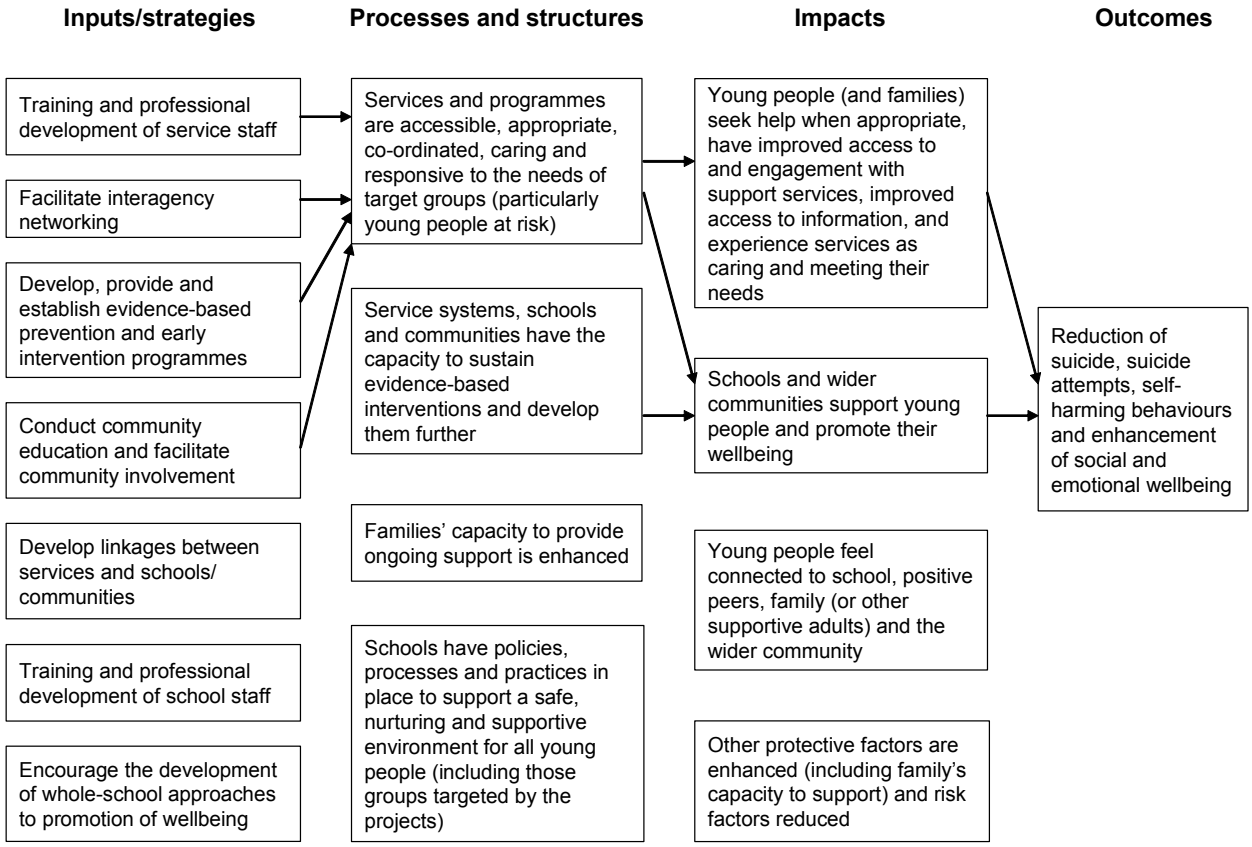
Example 2: Road safety intervention logic model (Land Transport Safety Authority)



(RCAs are road controlling authorities; CBT is compulsory breath testing)
Source: LTSA, 2010 Strategy

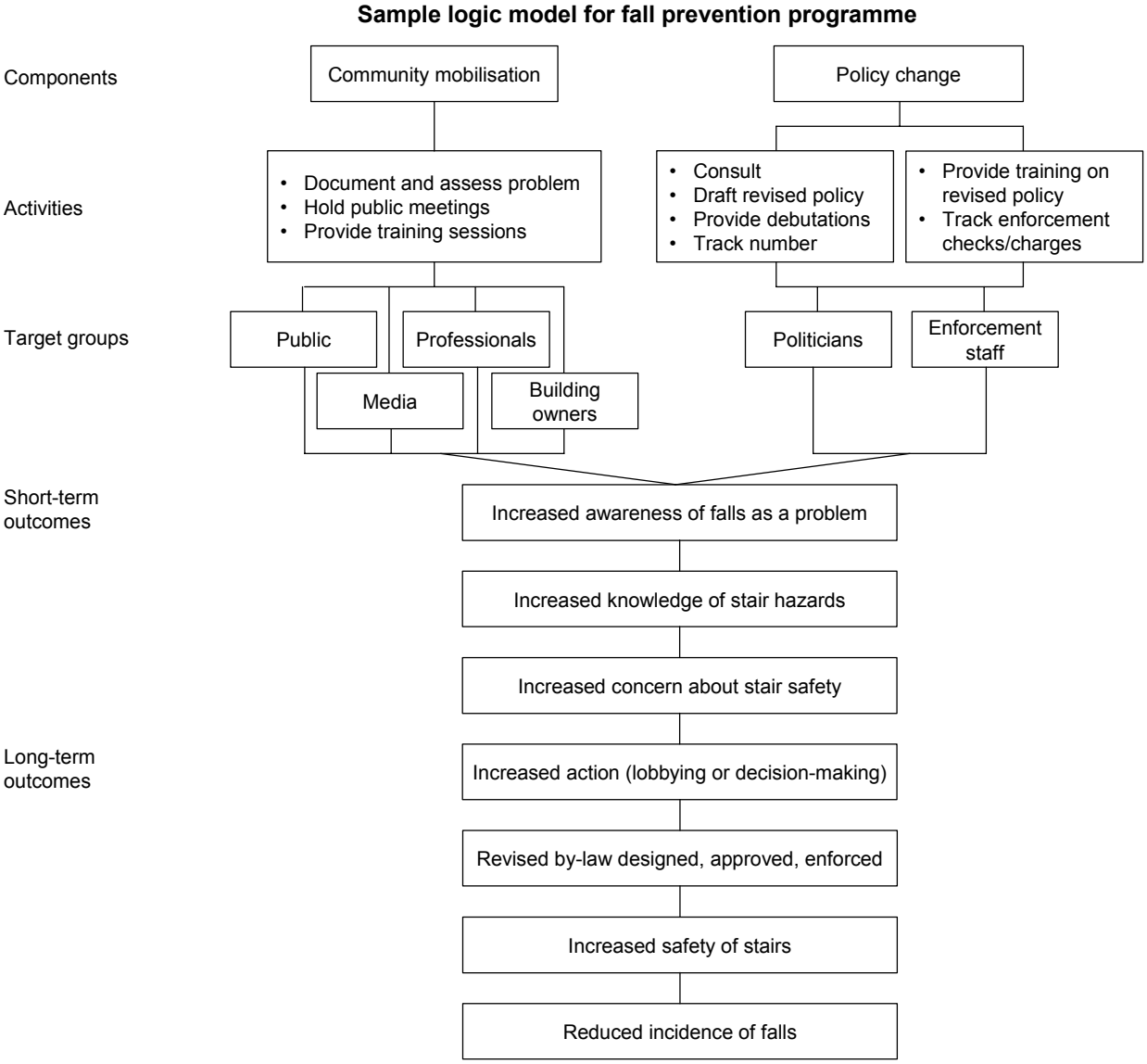
Source: SSC (2003b: 5).

Example 3: Suicide prevention in communities (Victoria, Australia)



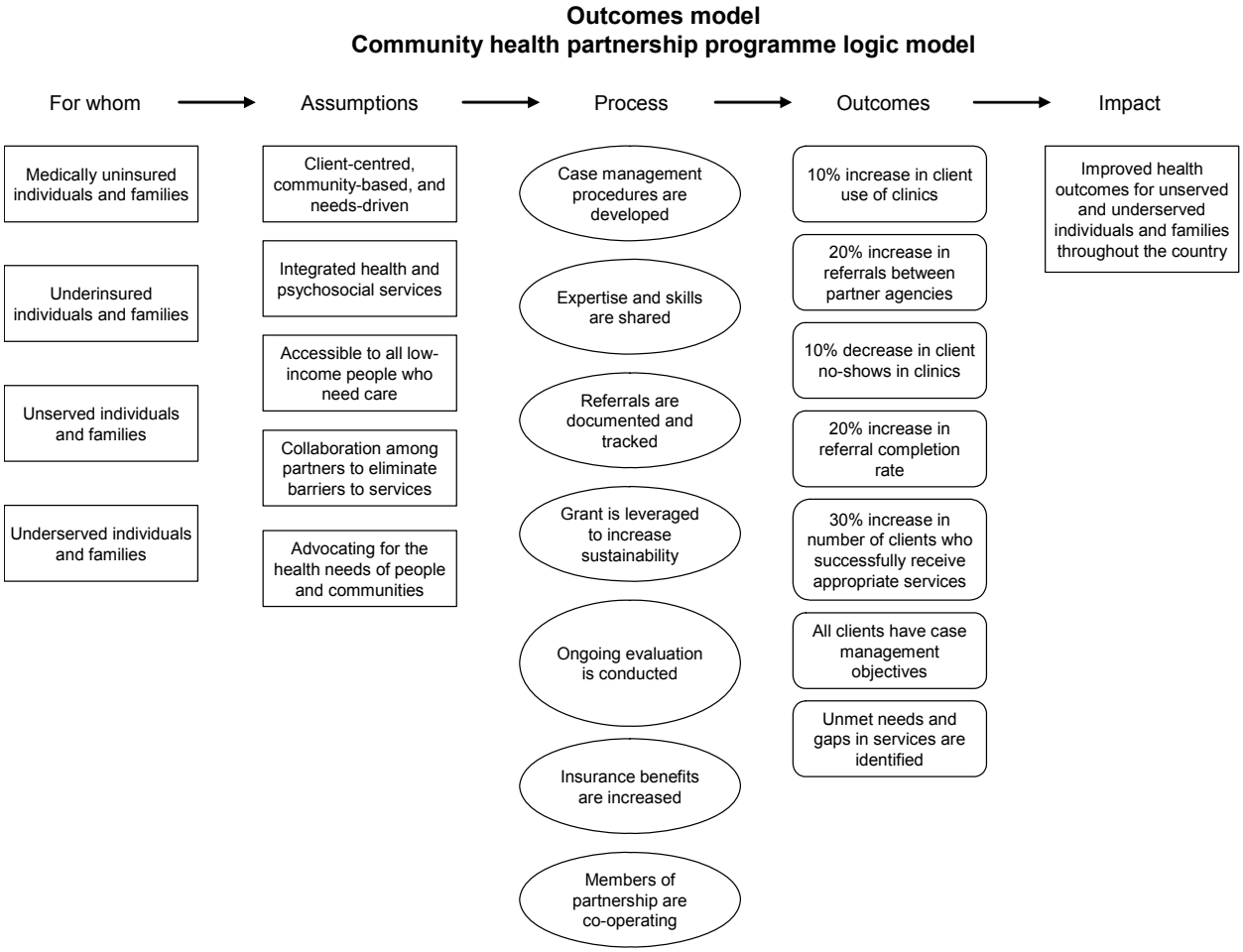
Source: Mitchell and Lewis (2004).

Example 4: Logic model to prevent falls (Canadian)



Source: Health Communication Unit (2001: xvii).

Example 5: Logic model to improve community access to medical clinic (WK Kellogg Foundation)



Source: WK Kellogg Foundation (1998: 38).

Appendix B: Checklist for Developing a Comprehensive Public Health Programme

		☑
1	**Develop population health focus**	
1.1	Define the population health problem.	
1.2	Define the target population (or populations).	
2	**Address determinants of health**	
2.1	Identify the determinants of health for the target population associated with: • age, sex and hereditary factors • individual lifestyle factors • social and community influences • living and working conditions • gender and culture • socioeconomic and environmental conditions.	
2.2	Establish the links between the determinants, the health problem and the target population.	
3	**Reduce health inequalities**	
3.1	Identify: • inequalities • where inequalities exist • who is most disadvantaged • the determinants of the inequalities • the types of interventions that will reduce inequalities.	
4	**Address Māori health: He Korowai Oranga**	
4.1	Identify the types of intervention that acknowledge whānau ora, build on existing gains and promote the four pathways of: • whānau, hapū, iwi and community development • Māori participation • effective service delivery • working across sectors.	
5	**Use evidence and examples of best practice**	
5.1	Review evidence for the effectiveness of interventions.	
5.2	Identify and acknowledge limitations in the knowledge base.	
6	**Maximise and prioritise resources**	
6.1	Assess the: • cost-effectiveness of proposed interventions • workforce capacity and capability for proposed interventions • infrastructure requirements for proposed interventions • cost of existing and new interventions.	
6.2	Scope the environment (eg, do a SWOT analysis).	
6.3	Explore and evaluate opportunities for collaboration.	

7	**Select interventions**	
7.1	Set goals and objectives (short-term, intermediate and long-term).	
7.2	Identify interventions related to goals and objectives.	
7.3	Identify outcome measures and assess them for their validity and reliability.	
7.4	Decide whether a formal process and impact evaluation is needed.	
7.5	Demonstrate how selected interventions: • target the determinants of health for the defined health problem and target population • reduce health inequalities in the target population • are consistent with the aim of whānau ora and are aligned with the four pathways described in He Korowai Oranga • reflect the current state of knowledge and best practice.	
8	**Develop project plan**	
8.1	Prioritise interventions according to their ability to provide the greatest possible gain given the cost and available resources.	
8.2	Prepare the budget	
8.3	Prepare the project implementation plan.	
8.4	Prepare and have signed the contracts for delivery of services and agreements on collaborative action.	
8.5	Allow for undertaking evaluation where necessary.	
8.6	Establish a monitoring system.	
	Outcomes Programme logic model (diagram), budgets, implementation plan and contracts	

Appendix C: Sample Matrix 1: Plotting Interventions

1 Build healthy public policy

	Key activities	Resources	Short-term outcomes	Short-term indicators	Long-term outcomes	Long-term indicators
Address determinants						
Reduce inequalities						
Address Māori health						

Table format repeated for each Ottawa Charter principle.

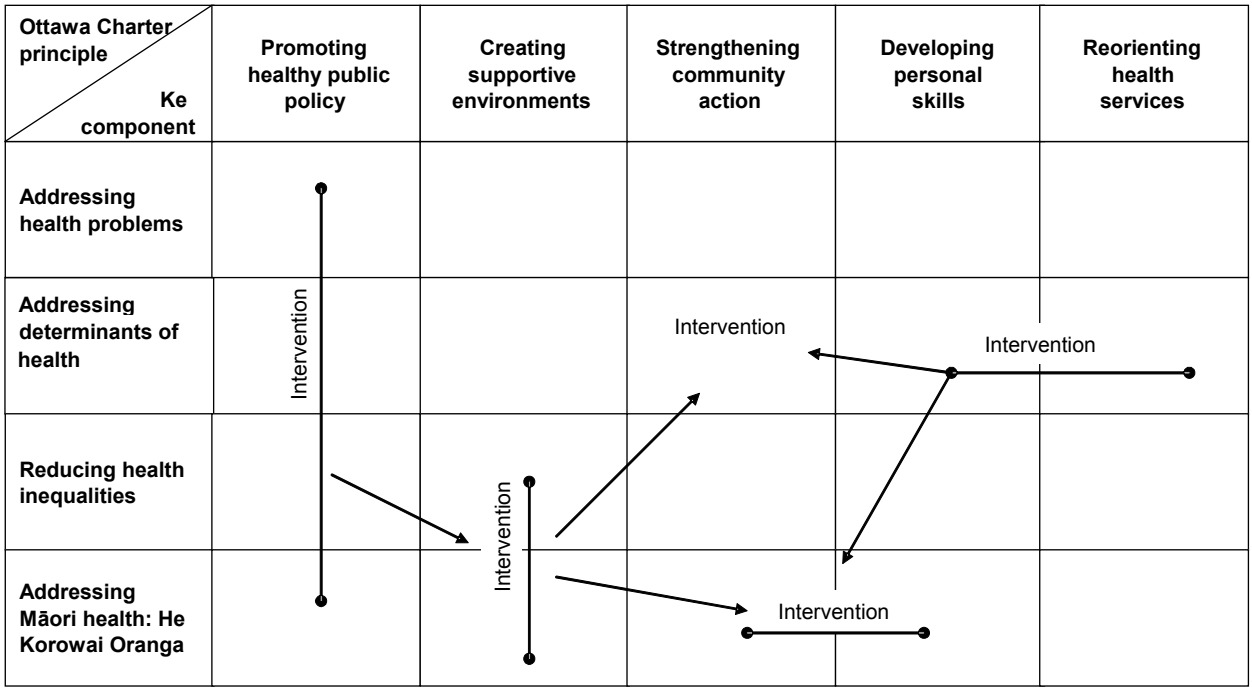
2 Create supportive environments

3 Strengthen community action

4 Develop life skills and resilience

5 Reorient health services

Appendix D: Sample Matrix 2: Plotting Interventions



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