

NEW ZEALAND HEALTH STRATEGY

DHB TOOLKIT

Improve Nutrition

To improve nutrition

2001



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Executive summary

Nutrition plays a major role in the leading three causes of death in New Zealand – ischaemic heart disease, cancer and stroke. Poor nutrition is also a key factor in the prevalence of obesity, type 2 diabetes, hypertension and dental disease. Thus an improvement in nutrition would decrease the diet-related burden of illness and disease on individuals, particularly those living in more deprived areas. It would also save major costs in health care.

This toolkit provides District Health Boards (DHBs) and other health providers with some guidance on addressing the population health objective *to improve nutrition*. The focus of the toolkit is on promotion of the Ministry of Health’s series of Food and Nutrition Guidelines and on promotion of breastfeeding, including the introduction of the Baby Friendly Hospital Initiative. One reason for choosing this focus is that the relevant documents are provided by the Ministry of Health. In addition, existing initiatives have commenced and progress in these areas will contribute to improving the nutritional status of New Zealanders. The toolkit recognises the need for a supportive environment for the promotion of healthy choices as the easy choices. Also needed are an appropriately skilled workforce and interventions that enable people to adopt a healthy diet and minimise the barriers.

The linkages with at least seven of the other 12 toolkits are identified. Data are presented on new work such as the strategy for nutrition, healthy weight and physical activity (Healthy Food: Healthy Action). Also covered are the policy context, current status of nutrition and breastfeeding in New Zealand, and of food, nutrient and breastfeeding targets. Barriers to change and strategies to bring about change, including evaluation, information and indicators, are discussed.

A checklist for DHBs focuses on the maintenance of existing programmes and services that are effective and meet the community’s needs, and on the importance of employing dietitians and registered nutritionists to assist with programme planning and implementation. Programmes and services should be suitable for the promotion of the Food and Nutrition Guidelines and breastfeeding, particularly to those experiencing health inequalities such as Maori and Pacific peoples. This links to one of the key themes in the New Zealand Health Strategy – that of reducing inequalities in health. This theme is reflected throughout this toolkit and additional information on [reducing inequalities](#) is also available.

Improve nutrition

Objective: To improve nutrition

The New Zealand Health Strategy has identified these 13 priority areas for population health:

- reduce smoking
- improve nutrition
- reduce obesity
- increase the level of physical activity
- reduce the rate of suicides and suicide attempts
- minimise harm from alcohol, illicit and other drugs
- reduce the incidence and impact of cancer
- reduce the incidence and impact of cardiovascular disease
- reduce the incidence and impact of diabetes
- improve oral health
- reduce violence in interpersonal relationships, families, schools and communities
- improve the health status of people with severe mental illness
- ensure access to appropriate child health services.

District Health Boards (DHBs) will be required to report on progress towards each of these priority areas annually. The Minister of Health will then report to Parliament on overall progress in these areas (New Zealand Public Health and Disability Act 2000 s 8(4)).

This toolkit specifically addresses the priority area *to improve nutrition*. In so doing, it:

- provides evidence on the best way to achieve health gain through improved nutrition
- proposes indicators so that progress can be monitored
- provides baseline data
- provides a checklist for DHBs.

Background

There is increasing recognition that diet is important for good health. Nutrition plays a major role in all three leading causes of death for New Zealanders – ischaemic heart disease, cancer and stroke. It is a major determinant in the prevalence of obesity, hypertension, type 2 diabetes and dental decay. It is also a factor in determining the risk of osteoporosis and a number of gastrointestinal diseases (Ministry of Health 1998b).

While it is difficult to quantify the impact of diet, the universal adoption of a diet in accordance with the New Zealand Food and Nutrition Guidelines would probably have an impact equivalent to the total elimination of smoking (Ministry of Health 1999a). The Food and Nutrition Guidelines include the promotion of breastfeeding as the best form of nutrition for infants.

There is considerable scope for improving health inequalities among different socioeconomic and ethnic groups by improving lifestyle choices such as diet. However, policies aimed at modifying lifestyle and changing habitual behaviours could actually worsen health inequalities unless they are designed to be sensitive to different sociocultural contexts and to address the underlying social inequalities themselves (Ministry of Health 1999a).

Scope of this toolkit

The information provided in this toolkit supports the priority objective *to improve nutrition* in the New Zealand Health Strategy. It concentrates on:

- supporting the implementation of the Ministry of Health's Food and Nutrition Guidelines, which include guidelines for healthy infants and toddlers, children, adolescents, adults, pregnant women, breastfeeding women and older people
- promotion of breastfeeding, including the introduction of the Baby Friendly Hospital Initiative.

It recognises the need for a supportive environment for promotion of healthy choices as the easy choices. Also needed are an appropriately skilled workforce and interventions that will reduce the barriers preventing people from adopting a healthy diet.

Development of this draft

The lead agency for developing this toolkit was the Public Health Directorate of the Ministry of Health.

This toolkit has been developed by collecting existing data and undertaking a literature review, as well as through internal review from Ministry staff and advice from an external expert working group. However, a revised draft was provided to all DHBs for discussion and review at a forum during late July. The external working group conducted a further review in August. The final draft nutrition toolkit for 2001 will be completed and released on 31 October 2001.

Linkages

This toolkit is linked to the *Public Health Services Handbook 2000/2001* and the service specification for nutrition and physical activity.

In addition, the toolkit has clear overlaps with the toolkits for a number of other priority areas. Rather than providing scientific substantiation for them, this section makes those links. Linkages between the toolkit for nutrition and other toolkits are:

- reduce obesity – improving nutrition by implementing the Ministry of Health's Food and Nutrition Guidelines and increasing breastfeeding has the potential to reduce the risk of becoming overweight, particularly in children and adolescents

- increase the level of physical activity – improving nutrition by implementing the Ministry of Health’s Food and Nutrition Guidelines is closely related to promoting increased physical activity as the Guidelines also advise regular physical activity as part of a healthy lifestyle
- reduce the impact and incidence of cancer – improving nutrition by implementing the Ministry of Health’s Food and Nutrition Guidelines and by breastfeeding infants will contribute to reducing the incidence of some cancers
- reduce the impact and incidence of cardiovascular disease – improving nutrition by implementing the Ministry of Health’s Food and Nutrition Guidelines and promoting breastfeeding will contribute to reducing the incidence of cardiovascular disease
- reduce the impact and incidence of diabetes – improving nutrition by implementing the Ministry of Health’s Food and Nutrition Guidelines will contribute to reducing the impact and incidence of type 2 diabetes. Breastfeeding is known to reduce the risk of developing type 1 diabetes
- improve oral health – improving nutrition by implementing the Ministry of Health’s Food and Nutrition Guidelines is likely to contribute to improved oral health through reduced dental caries. However, the formation of dental caries is also influenced by when, and in what combination, particular foods are consumed
- ensure access to appropriate child health services including well child and family health care and immunisation – improving nutrition by implementing the Food and Nutrition Guidelines for Healthy Infants and Toddlers, and Healthy Children, and promoting breastfeeding will contribute to better infant and child health status.

In addition to this toolkit, information on specific population groups will be available within:

- the Maori Health Strategy
- the Pacific Health and Disability Action Plan
- the Older People’s Strategy
- the Youth Health Strategy
- the Primary Health Care Strategy.

New work

The Public and Population Health Policy and Strategy Group of the Ministry of Health is working on a strategic project for nutrition, healthy weight and physical activity, entitled Healthy Food: Healthy Action. The project will develop a strategy to guide the DHBs and other providers of services and programmes that contribute to improved nutrition. The project is at an early stage. It has recently undergone public health sector consultation and will undergo wider public consultation during September. The strategy is expected to be completed in 2002 and will result in revisions to the nutrition toolkit for 2002.

The Public Health Intelligence Group of the Ministry of Health has recently completed the development and validation of methods for New Zealand's first national Children's Nutrition Survey (CNS). It is intended that data collection for the CNS will begin in 2002 for children and will oversample Maori and Pacific children. Information to be collected is likely to include food and nutrient intakes, body measurements, some biochemical measures, physical activity levels, and dental health questions. The data from the CNS are expected to be available in 2003/04.

Policy context

National Nutrition Policy

The Government launched the National Nutrition Policy in April 1992 (Department of Health 1992) following the recommendations of the 1991 Nutrition Task Force (Department of Health 1991). The policy aims to make healthy food choices the easy choices; easy in terms of food availability and price. The policy is very broad and used predominantly in the health sector. Its main goal is:

‘to reduce the incidence of food related health disorders by improved nutrition’.

National Plan of Action for Nutrition

The National Plan of Action for Nutrition (NPAN) was the Public Health Commission’s advice to the Minister of Health for 1994–1995, and was reprinted by the Ministry of Health in 1998. It is presented in the form of a 10-year strategic plan (Public Health Commission 1995).

The National Plan of Action for Nutrition covers nutrition in its broadest sense. It is divided into three areas: food security (access to an adequate, safe and nutritious supply of food), improving food quality and safety, and promoting appropriate diets and healthy lifestyles. It sets out goals, objectives and targets for improving nutrition. It also makes many proposals, targets and related recommendations, including research, information and developmental work, which are too numerous to summarise here (for more detail, see Public Health Commission 1995).

Many of the recommendations made in NPAN have been implemented. Healthy Food: Healthy Action, the integrated approach to nutrition, healthy weight and physical activity now under development, will revise and replace NPAN.

1997 National Nutrition Survey

The 1997 National Nutrition Survey was funded by the Ministry of Health and undertaken by the University of Otago. Data were collected over a one-year period, based on a nationally representative sample of 4,636 New Zealanders aged 15 years and over. Maori and Pacific peoples were oversampled to increase sample numbers of these two groups.

The survey, conducted in the homes of respondents, included a 24-hour dietary recall, a self-administered food frequency questionnaire, and information on food preparation, barriers to dietary change, dietary supplement use and household food security. As well, blood pressure, height, weight and skinfold thickness were measured. A blood sample assessed cholesterol and iron status (Russell et al 1999).

Table 1: Existing food and nutrient targets and the current progress

<i>Food and nutrient targets¹</i>	<i>Current situation</i>	<i>Maori and Pacific peoples</i>	<i>Level of deprivation (using New Zealand Deprivation Index 1996)</i>
1. To increase the consumption of breads and cereals so that 75 percent or more of the population are consuming at least 6 servings per day by 2000.	In the 1997 National Nutrition Survey (NNS97), less than one fifth of adult New Zealanders consumed at least six servings of bread and cereals. The number of servings consumed declined with increasing age. Males were more likely than females to meet the recommendation (2).	Maori and Pacific peoples were more likely to meet the recommended intakes of breads and cereals than European and others (2).	People in more deprived areas were more likely to consume five or more servings of bread than those in less deprived areas (2).
2. To increase the consumption of vegetables and fruit so that 75 percent or more of the population are consuming at least 5 servings per day by 2000.	The NNS97 found that two thirds of adult New Zealanders were eating three servings of vegetables daily. Nearly half of adult New Zealanders consumed two servings of fruit per day. Females were more likely than males to meet the recommended intakes (2).	Maori and Pacific peoples were less likely to meet the recommendations for vegetables and fruit than other New Zealanders (2).	Those living in more deprived areas were less likely to meet recommended intakes of vegetables and fruit than those in less deprived areas (2).
3. To reduce the intake of total fat to 33 percent or less of the total dietary energy by the year 2005.	The percentage contribution to energy from fat has fallen from 40 percent in 1977 to 37.5 percent in 1989 to 34.9 percent in 1997. The NNS97 found that butter and margarine were the largest single contributors and provided 16 percent to total fat intake. For both males and females 35 percent of energy intake is from dietary fat. Overall, more females met the target than males. There was little variation among age groups (2).	Maori had higher mean energy intakes from fat than non-Maori (2). No comparable data are available for Pacific peoples.	There was little variation in energy intake from fat between varying levels of deprivation (2).
4. To reduce the intake of saturated fatty acids plus trans saturated fatty acids to 12 percent or less of the total dietary energy by the year 2005.	Saturated fat is still the major contributor to fat intake; for adult males and females it contributes 15 percent of total energy (2).	Maori women had higher saturated fat intakes than non-Maori women (2). No comparable data are available for Pacific peoples.	Saturated fat intake was not related to New Zealand Deprivation Index 1996 quartile (2).

<i>Food and Nutrient Targets (1)</i>	<i>Current situation</i>	<i>Maori and Pacific peoples</i>	<i>Level of deprivation (using New Zealand Deprivation Index 1996)</i>
5. To ensure that sucrose and other free sugars provide 15 percent or less of the total dietary energy by the year 2005.	Based on the NNS97, sucrose or cane sugar is the main contributor to sugar intakes. Total sugar intake declined with age for males and females (2). Men have already reached the 2005 target of 15 percent or less of total dietary energy from sucrose and other free sugars (3). A nationwide survey of 13- to 15-year-olds in 1993 found that sucrose intake, which was mostly from snacks, was 25 percent of energy intake (4).	Maori women have higher total sugar and sucrose intakes than non-Maori women. Maori men have slightly lower total sugar and sucrose intake than non-Maori men (2). No comparable data are available on sugar intakes of Pacific peoples.	Total sugar intake was not affected by New Zealand Deprivation Index 1996 quartile (2).
6. To reduce the mean dietary sodium intake to 140 mmol per day or less by 1997 and to 120 mmol by 2005.	Sodium intake is best assessed using a 24-hour urine collection. As the NNS97 did not collect urine, it did not assess sodium. However, in a survey of 704 adults from Otago and Waikato in 1997–98, intake was 151 mmol of sodium, well above the 120 mmol target. Males mean intake was 167 mmol compared to 135 mmol for females. The authors suggested separate targets for males and females (5).	No data available.	No data available.
7. To increase the intake of calcium so that 75 percent of the population (in particular children and adolescents) have a calcium intake of more than 600 mg per day by 2000.	Twenty percent of adult New Zealanders (25 percent of females and 14 percent of males) have inadequate intakes of calcium. Calcium intake is lowest among 15- to 18-year-olds, of whom 33 percent of males and 37 percent of females have inadequate intakes. Milk and cheese provided almost half of the dietary calcium intake of adult New Zealanders (2). An earlier study of 13- to 15-year-old New Zealanders suggested that 55 percent of boys and 59 percent of girls were consuming less than 70 percent of the recommended dietary intake of calcium (4).	The NNS97 showed a high proportion of young Maori and Maori women had inadequate intakes of calcium. Fewer Maori women consumed yoghurt than non-Maori women. Fewer Maori ate cheese than non-Maori. The majority of Maori and Pacific peoples chose standard milk, which has a lower calcium content than trim milk (2).	Those living in more deprived areas have lower calcium intakes, and are less likely to consume cheese and trim milk than those in less deprived areas (2).

Notes:

1. Ministry of Health 2000
2. Russell et al 1999
3. Ministry of Health 1998b
4. Brinsdon et al 1993
5. Thomson and Colls 1998

Appropriateness of existing food and nutrient targets

With the exception of sodium intake, the food and nutrient targets set out in Table 1 can be monitored through national nutrition surveys. However, from these surveys to date, it is not possible to analyse and report meaningful data by DHB area. As sodium intake is most appropriately assessed from a 24-hour urine sample, which has not been a part of national nutrition surveys to date, it needs to be monitored in a separate study. Data on calcium intakes are currently only available for adults but it is expected that they will be collected for children in the Children's Nutrition Survey, which is expected to begin in 2002.

Consideration should be given to the existing targets in light of current research and the results of the 1997 National Nutrition Survey. That is, the question of whether there is a need for targets for food security and iron status should be considered.

Table 2: Existing breastfeeding targets and current progress

<i>Breastfeeding targets (1)</i>	<i>Current situation</i>	<i>Maori and Pacific peoples</i>	<i>Level of deprivation (using New Zealand Deprivation Index 1996)</i>
1. To increase full breastfeeding at three months to 70 percent by 1997 and to 75 percent by 2000.	Full breastfeeding at three months of age was about 51 percent in 1998 and has changed little since 1994. Some 55 percent of European and other infants were fully breastfed at three months (1).	In 1998, 39 percent of Maori infants were fully breastfed at three months compared with 44 percent of Pacific infants (1).	No data available.
2. To increase breastfeeding (full or partial) at six months to 70 percent by 1997, and to 75 percent by 2000.	At six months the rate of full or partial breastfeeding is 60 percent. In 1998, 62 percent of European and other infants were fully or partially breastfed (1).	In 1998, 53 percent of Maori and 60 percent of Pacific infants were fully or partially breastfed at six months (1).	No data available.

Note:

1. Ministry of Health 2000

Appropriateness of existing breastfeeding targets

The breastfeeding targets for 2000, as set out in Table 2, are considered to need revision as they were based on limited data, which had been collected without using standard definitions for breastfeeding, and the second target date has now passed.

In 1999 the Ministry of Health adopted new standard definitions for breastfeeding. *Exclusive breastfeeding* refers to an intake of breastmilk only, whereas the Ministry has adopted the term *full breastfeeding*, which includes breastmilk, some water and medications. The author recommended retaining the targets at three and six months, while revising the goal for the future targets, such as for 2005 (Coubrough 1999).

Current status of nutrition and breastfeeding

Workforce issues

To undertake the work necessary to implement the Food and Nutrition Guidelines in New Zealand, DHBs need to utilise the skills of dietitians and registered nutritionists with the relevant qualifications and experience in health promotion. There is a limited pool of suitably qualified individuals available, especially in Maori and Pacific communities.

Dietitians and registered nutritionists will need to support other health practitioners to promote the Food and Nutrition Guidelines. A number of train-the-trainer programmes are available for training community workers in nutrition, such as those run by Te Hōtu Manawa Māori, the Māori community nutrition projects, other Māori provider groups, Pacific Islands Heartbeat and other Pacific health providers.

Food and Nutrition Guidelines

Promoting healthy food choices is consistent with the National Plan of Action for Nutrition (Public Health Commission 1995) and the Ministry of Health's policy documents on healthy eating (Food and Nutrition Guidelines for healthy infants and toddlers, children, adolescents, adults, pregnant women, breastfeeding women and older people). Such promotion also supports the Ministry's targets for food and nutrients (Ministry of Health 2000). The Ministry's food-based dietary guidelines are used and promoted by public health providers including public health units, non-government organisations and the food industry.

Overall, the Food and Nutrition Guidelines focus on a healthy lifestyle, including eating a well-balanced diet and being physically active for most age groups, and full breastfeeding for infants up to four to six months of age. For adults a balanced diet encompasses at least three servings of vegetables (including potatoes and starchy vegetables) and two servings of fruit, at least six servings of breads and cereals, at least two servings of milk or milk products (preferably low fat) and at least one serving of lean meat or meat alternatives, such as dried beans and lentils, per day. The number of servings of foods varies according to the age or stage of the lifecycle. The Food and Nutrition Guidelines also include advice on fluid intake and on how to select foods that are low in fat, salt and sugar (Ministry of Health 1998a).

Benefits of healthy eating as promoted in the Food and Nutrition Guidelines

If more New Zealanders adopted healthy lifestyles, basing their food intake on the Food and Nutrition Guidelines, the population's health status would be likely to improve significantly. Furthermore, a decrease in diet-related morbidity and mortality, especially those associated with type 2 diabetes, cardiovascular disease and some cancers, could be expected. Promotion of population health strategies, such as the Food and Nutrition Guidelines, could contribute to significant reductions in costs from diet-related disease in the health sector.

For example, if New Zealanders ate the recommended five or more servings of vegetables and fruit every day there would be 800 fewer deaths per year. If the proportion of the population consuming at least the recommended amount of vegetables and fruit each day increased by 10 percent by the year 2006, 90 fewer deaths would occur each year (Ministry of Health 1999a).

In Australia, a recent review of vegetables and fruit and their relationship to health status concluded that epidemiological data show a protective effect for a number of chronic diseases. Consumption of vegetables and fruit is beneficial in relation to reducing the risk of some cancers and cardiovascular disease. The evidence did not support the promotion of particular types of

vegetables and fruits nor did it exclude canned, frozen or dried varieties of vegetables and fruits (Baghurst et al 1999).

Breastfeeding

New Zealand's response to the World Health Organization's *International Code of Marketing of Breast-milk Substitutes* (1981) is contained in *Infant Feeding: Guidelines for New Zealand health workers* (Ministry of Health 1997). Main features of New Zealand's approach are health worker guidelines and a self-regulatory code for the infant formula marketing industry (who are members of the New Zealand Infant Formula Marketers' Association, NZIFMA). Both the guidelines and code are supported by a compliance programme (Ministry of Health 1997; NZIFMA 1997).

In 1995 initiation of breastfeeding in New Zealand, at 94 percent, was high compared to other western countries (Ministry of Health 1998b). However, as shown in Table 2 the drop-off rate is high during the first three months.

Benefits of breastfeeding

In May 2001 the World Health Assembly meeting adopted a resolution to:

'protect, promote and support exclusive breastfeeding for six months as a global public health recommendation, and to provide safe and appropriate complementary foods, with continued breastfeeding for up to two years of age or beyond' (WHO 2001).

Scientific evidence indicates that breastfeeding has a wide range of benefits, including nutritional and economic benefits, reduced infant illness and a number of benefits to the mother. The key benefits of breastfeeding are listed in Appendix 1.

Baby Friendly Hospital Initiative

The Baby Friendly Hospital Initiative (BFHI) was developed by WHO and UNICEF to improve breastfeeding in hospitals and maternity facilities (WHO/UNICEF 1989). BFHI is recognised for its positive contribution to promoting successful breastfeeding during perinatal care. It is based on the following 10 steps to successful breastfeeding.

1. Have a written breastfeeding policy.
2. Train all staff in making the policy work.
3. Inform all pregnant women about the benefits of breastfeeding.
4. Help all mothers begin breastfeeding within an hour of giving birth.
5. Show mothers how to breastfeed successfully.
6. Give newborns no food or drink other than breastmilk unless medically necessary.
7. Allow mothers and new born infants to stay together 24 hours a day.
8. Encourage breastfeeding on demand.
9. Give no dummies or pacifiers to breastfeeding infants.
10. Foster mothers' support groups and refer new mothers to them.

Currently, no maternity facilities in New Zealand are designated as being baby friendly according to the BFHI criteria. During 1999/2000 the Health Funding Authority contracted the New Zealand Breastfeeding Authority (NZBA) to establish an infrastructure for the planning, development and delivery of BFHI in New Zealand and to undertake initial training of assessors. Maternity facilities are able to access the completed documents and contact trained assessors in

New Zealand through the NZBA. An audit of 30 maternity facilities in New Zealand has recently been completed by NZBA to provide DHBs and the Ministry with baseline data.

The environment at and after the birth is very important for ensuring breastfeeding is initiated. Most women spend less than two days in maternity units so ongoing support for breastfeeding is essential for maternity care in the home and community. Policies and active support for extending the principles of BFHI into the community would help mothers to continue breastfeeding, especially those experiencing problems or returning to work. In addition, it is likely that these measures would improve rates of full breastfeeding at three months of age.

Barriers to change

Few recent data are available on barriers to change in relation to adopting a healthy diet as recommended by the Food and Nutrition Guidelines. Those available are from the 1997 National Nutrition Survey (NNS97) of which this toolkit was a component but not the key output. These national data have not been analysed by DHB area, as the numbers of subjects would be insufficient for analysis by age and gender groupings.

In terms of barriers to change, Maori and Pacific peoples are also significantly affected by the broader context and the approach of those delivering the service or programme. The presentation of services in a way that is not acceptable, holistic and inclusive can be a barrier to their utilisation.

Food and nutrients

Fruit and vegetables

In the 1997 National Nutrition Survey 14 percent were trying to change their fruit consumption and 11 percent were trying to change their vegetable consumption. Of this proportion, more than 90 percent were trying to increase consumption. However, among males over 45 years old who were trying to change their vegetable consumption, 27 percent of were trying to eat fewer vegetables.

The frequency of consumption of a wide range of vegetables appears lower in NNS97 than in the 1989 Life in New Zealand Survey (Horwath et al 1991). In explaining why they did not increase their vegetable consumption, people stated that they did not always have vegetables at home, cost was a barrier, vegetables take too long to prepare, and they did not have enough time. Similarly, people identified difficulties in increasing their consumption of fruit such as cost, not always having them at home, poor quality, and not being able to store them for long (Russell et al 1999).

Bread and cereals

In the 1997 National Nutrition Survey, of those trying to change their consumption of breads and cereals, 60 percent were trying to eat more of them. Most women over 45 years old who were trying to change their bread and cereal consumption (55 percent) were trying to eat fewer of them. Most people report that it is not difficult to increase bread consumption, although a few say they do not like breads and cereals, or that they need willpower to achieve such an increase (Russell et al 1999).

Fat

Twenty-two percent of New Zealanders reported trying to change their fat consumption; of this proportion 94 percent were trying to eat less fat. Among the identified difficulties in reducing the intake of high fat foods were: they taste good, low fat foods are not as enjoyable, the high fat foods are convenient, and the respondents need willpower to reduce this intake. However, consumption of some high fat foods had decreased while consumption of some low fat foods had increased (Russell et al 1999).

Nutritious diet

In 1997 one third of New Zealanders were estimated to be attempting to change their diet and most, if not all, were endeavouring to improve their nutrition. Maori (37 percent) and Pacific peoples (45 percent) were more likely to be trying to change their diet than were European and others (26 percent). There was no significant difference in the proportion attempting to change their diet in less deprived or more deprived groups (Russell et al 1999).

The 1997 National Nutrition Survey found that some people were unable to afford a nutritious diet:

- 13 percent of New Zealanders reported that their household could afford to eat properly only sometimes
- 14 percent reported that food runs out sometimes or often because of lack of money
- 27 percent said that the variety of foods they are able to eat is limited by lack of money
- 7 percent of households reported relying on others to provide food sometimes or often
- 4 percent had accessed food grants or a food bank at least once during the previous year (Russell et al 1999).

The extent of deprivation was most marked in lower socioeconomic groups (in which Maori and Pacific peoples are overrepresented). These self-reported patterns are reflected in actual consumption and related morbidity and mortality statistics, where people from lower socioeconomic groups also tend to be overrepresented (Russell et al 1999).

These data are consistent with international findings that those on low incomes are well aware that they and their families are eating unhealthy food, but cannot afford to eat more nutritiously. In particular these families cannot afford to buy more vegetables and fruit (New Zealand Network Against Food Poverty 2000).

Although some healthy foods can be expensive, the specialist expertise of dietitians and registered nutritionists can be used to identify affordable healthy foods. In many cases it is possible, even within a restricted budget, to plan and prepare healthy meals for families.

Breastfeeding

One study designed to shed light on why women stop breastfeeding found that:

- decisions about breastfeeding were usually made before birth
- women felt pressure to breastfeed and guilty about bottle feeding
- information about infant feeding was generally inconsistent, unrealistic and incomplete (Basire et al 1997).

Early hospital discharge has been associated with infant admissions due to feeding-related problems. It is possible such problems may be attributed to poorly established breastfeeding (Lui and Clemens 1997).

In Australia, although the issues are known to be complex, some of the reasons for drop-off in breastfeeding after initiation included:

- mother's attitude, family member's support, community services, hospital policies and health workers' attitudes
- inadequate access to and support for women from health workers
- inadequate level of skills and knowledge among health workers

- social change and commercial influence
- lack of recognition by hospital administrators that change is required and lack of support for inservice training (Tong 1997).

To significantly improve full breastfeeding rates in New Zealand, DHBs will need to work to reduce the barriers to breastfeeding.

Best evidence on interventions – strategies for change

While many published studies have considered public health nutrition programmes and interventions, few have been evaluated for efficacy of outcomes using the same methods. Apart from the Maori nutrition pilot projects and the Ola Fa'autauta Project (Samoan Lifewise Project) (Swinburn, Amosa and Bell 1997) there has been very little formal evaluation of public health nutrition programmes in New Zealand. No published papers of New Zealand interventions were identified in a literature search of successful promotion of the Food and Nutrition Guidelines and breastfeeding. Therefore, this section is primarily descriptive.

The Ottawa Charter for Health Promotion (WHO et al 1986) provides a useful framework for the implementation of suitable health promotion programmes to improve nutrition. Its elements include building healthy public policy, creating supportive environments, strengthening community action, developing personal skills and reorienting the health sector. These elements can be applied to national and regional programmes.

Food and Nutrition Guidelines

A number of organisations have delivered programmes and campaigns to support the implementation of the Food and Nutrition Guidelines. These include public health services of DHBs, the National Heart Foundation, Te Hotu Manawa Maori, the Cancer Society, the Nutrition Foundation of New Zealand, United Fresh's 5+ a Day programme, Agencies for Nutrition Action and food industry programmes (Ministry of Health 1998b).

Approaches to work

The different agencies working in nutrition promotion have utilised a range of strategies including issue-focused programmes, settings approaches and initiatives based on the principles of the Ottawa Charter. In general, the public health services have worked in their local area. Cook et al (2001) conducted a public health service intervention among employees of two manufacturing worksites to evaluate the effectiveness of a health promotion programme designed to reduce dietary risk factors. Other national organisations, such as the National Heart Foundation (NHF), have targeted settings such as schools, marae, workplaces and catering institutions. The NHF is also responsible for the promotion of the Food and Nutrition Guidelines for children under five years old (Ministry of Health 1998b).

Improving nutrition at all stages of life is recommended. Programmes should be developed to target all age groups. However, it is acknowledged that developing healthy eating patterns among preschool and school-aged children has the most potential benefit to the health of the country (Public Health Commission 1995). Public health workers are an important resource for promoting good nutrition in schools, through the Healthy Schools programme, or among families or Whanau in the wider community.

Specific population groups

Nutrition programmes have been developed specifically for Maori and Pacific peoples (Ministry of Health 1998b). Between 1993 and 1995 the Maori community nutrition pilot projects to improve nutrition and physical activity of Maori people were implemented. These projects were Tairawhiti – Te taro o te Ora, Kai o te Hauora (Te Hotu Manawa Maori), Kai Oranga Tinana Mo Waipareira and Te Pataka o Te Tai Tokerau. They:

- used a train-the-trainer approach in both urban and rural environments
- provided quality nutrition services using ‘by Maori for Maori’ providers
- were evaluated by Whariki, the Maori research team based at Auckland University’s Alcohol and Public Health Research Unit, in 1998. Process and outcome evaluations were undertaken.

The major achievements of the community nutrition pilot projects were that they:

- succeeded in accessing hard to reach Maori in urban and rurally isolated communities
- utilised significant networks including accessing Whanau, hapu and iwi through all tiers of the projects
- succeeded in providing a suitable delivery and management framework for a community development and health promotion initiative
- met the community development objectives of participation, ownership and empowerment
- increased the use of wholemeal bread, salads, fresh fruit, lean meat, cereals and water, and decreased fat and salt intakes
- improved presentation of food and knowledge of food safety, particularly in relation to food storage, resulting in improvements on many marae and in other community settings
- developed designated smokefree areas on many marae and introduced smokefree policies (Moewaka Barnes et al 1998a, 1998b; Pipi et al 1994; Tunks et al 1998).

Although health benefits are expected, they will accrue over the longer term and will decrease nutrition-related diseases. Some minor changes have been made. All programmes continue, with the Waipareira programme now extended to South Auckland and also overseeing the technical quality of the Te Pataka programme.

The Ola Fa’autauta Project (Samoan Lifewise Project) was a community-based health promotion project undertaken in Auckland from 1994 to 1997. The aims of the project were to measure the current health status of the communities and to assess the impact of nutrition, physical activity and educational programmes. The project:

- involved 1,033 people from three church communities
- intended to ensure sufficient people in the community were trained to continue the programmes after the research project was completed
- used the Pacific Islands Heartbeat nutrition programme to train Heartbeat leaders and hold large group sessions focusing on healthy food
- was evaluated throughout the project and used a variety of methods, including needs assessment, process evaluation, and qualitative and quantitative outcome measures
- found that the role of community leaders, such as church ministers and their wives, was crucial to the success of the project
- found that the aerobic sessions were the most popular and visible aspect of the project, that eating habits seemed to be changing and the use of healthier foods was becoming part of the church culture (Swinburn et al 1997).

Breastfeeding

A review of the literature identified a number of published papers that identify interventions showing improvements or that identify the characteristics contributing to improved breastfeeding rates.

Two reports on successful breastfeeding among women with low incomes found the following characteristics contribute to increased rates of breastfeeding.

- A United Kingdom study found contributing factors were positive attitudes, higher self-esteem, realistic expectations, supportive family and partner, and ability to cope with perceived temporary social isolation. Also contributing was a range of midwifery practice factors, such as not being separated from the baby, having good quality advice and adequate time from health workers, not being given supplementary feeding and improving social support networks (Whelan and Lupton 1998).
- In a United States study, use of non-professional peer support and individualised support from peer counsellors resulted in better initiation and sustained breastfeeding rates. The hospital environment and family attitudes also influenced these rates (Shaw and Kaczorowski 1999).

One study of why women stop breastfeeding found that all women were well informed about the benefits of breastfeeding (Basire et al 1997).

Numbers of midwifery home visits were increased from 1998 to support the establishment of breastfeeding. Supportive environments are identified as important. Many public, private and voluntary health agencies support breastfeeding. Some workplaces are also developing policies and facilities to support breastfeeding. The BFHI, which is under development in New Zealand, is expected to have a positive impact on full breastfeeding rates within maternity facilities and communities. A Bill proposing 12 weeks' paid maternity leave in New Zealand is likely to be introduced during the current Parliamentary term. Its adoption into law would be expected to have a beneficial impact on breastfeeding.

Evaluation

Evaluation of existing nutrition programmes and services is necessary to assess which projects are effective and how to overcome some of the barriers to improving nutrition. With the exception of the four Maori nutrition pilot projects and the Ola Fa'atauta Project (Samoan Lifewise Project), few programme evaluations have been reported in the literature or are otherwise available. Many local or regional health promotion projects and programmes are evaluated internally but may not meet the requirements for publication. Thus it is difficult to determine which strategies, and what combination of interventions, should be adopted to improve nutrition most effectively.

Evaluating Health Promotion: A guide for health promoters and health managers (Casswell and Duigan 1989) provides a useful framework for evaluating health promotion programmes. Three key types of evaluation are:

- formative evaluation, which encompasses needs assessment and developmental research, and may be used for new programmes to monitor early developments and provide feedback to staff
- process evaluation, which provides a detailed description of the programme, its objectives and methods, and is usually qualitative
- impact or outcome evaluation, which is most often quantitative and usually attempts to measure if the programme objectives have been met (Casswell and Duigan 1989).

Evaluation should, where appropriate, be planned as an integral part of all major new programmes and services. About 10 to 15 percent of the total programme budget should usually be allocated for the evaluation component.

The Ministry of Health's strategic project for nutrition, healthy weight and physical activity, Healthy Food: Healthy Action, should provide some future direction for new or modified public health nutrition initiatives. Based on a review of the National Plan of Action for Nutrition, the strategy will assess what has been achieved, new research and information, and any changes to social policy and the structure of the health sector.

Data and information

Food and nutrients

The 1997 National Nutrition Survey provided significant data on the food and nutrient intakes and related information on New Zealanders aged 15 years and over. However, in spite of oversampling the numbers of Pacific peoples were too small when considered by age group and gender.

The NNS97 data are available nationally but have not been analysed by DHB area, as the numbers of subjects would be insufficient for analysis by age and gender groupings. A useful summary of some of the key results of the NNS97 for Maori is available in leaflet form (Ministry of Health 1999b). In some areas, including for Pacific peoples, further analysis of those data may also be necessary.

As already discussed there are no nationally representative data on the food and nutrient intakes of New Zealand children. The Children's Nutrition Survey, intended to commence in 2002, should bridge this gap. Data from this survey are expected to be available from 2003/04.

Breastfeeding

The Royal New Zealand Plunket Society collects the breastfeeding data that the Ministry of Health uses to monitor the existing targets. The key issue here seems to be that the goals in the targets need review, although a random survey of breastfeeding practices and prevalence may also be useful. There is also a need for some objective measurement of what works in maintaining or improving breastfeeding rates in New Zealand.

Collection of data on rates of full breastfeeding at discharge from maternity facilities and six weeks after birth, using the Ministry of Health's definitions and by ethnic group, should be possible from lead maternity carers as part of their reporting requirements. These data will enable the Ministry and DHBs to identify the groups that require specific strategies to support, promote and protect breastfeeding. Data on breastfeeding rates will be collated by DHB area in future and can be used by DHBs to plan their services and programmes.

Checklist for District Health Boards *to improve nutrition*

District Health Boards should ensure that they:

- maintain current programmes and services that are effective and based on community needs and best practice
- encourage the provision of programmes that are planned and implemented to meet the demographic, socioeconomic and social needs of the community
- employ dietitians and registered nutritionists to be a resource and work with health professionals, health workers and community practitioners to develop health promotion programmes and services to promote the Ministry of Health's Food and Nutrition Guidelines
- support effective approaches to networking within the public health nutrition workforce across regions, non-government organisations and food industry groups to promote the sharing of information and activities
- support co-ordination of local, regional and national public health nutrition activities and liaison between dietitians and registered nutritionists
- provide public health nutrition services that interface with and complement the clinical and personal health services to ensure an integrated and continuous service
- ensure that evaluation is included, where appropriate, as part of the programme
- fund and support Maori and Pacific provider groups that are promoting good nutrition in a manner consistent with the Food and Nutrition Guidelines
- fund and support community initiatives that are consistent with the Food and Nutrition Guidelines
- fund and support programmes and services that improve nutrition and reduce inequalities
- provide an environment that promotes, protects and supports full breastfeeding
- ensure that all maternity facilities are working towards meeting the criteria for the Baby Friendly Hospital Initiative and have a plan and timeline for its implementation.

APPENDIX 1:

Key benefits of breastfeeding

Some key benefits of breastmilk are that it:

- meets the full term baby's complete nutritional needs for the first four to six months of life
- is readily available with no heating required
- has low risk of bacterial contamination
- is low cost
- has less risk of over- or under-feeding
- contains optimal ratios of the fatty acids required for eye and brain development
- contains nutrients that are more bioavailable than in infant formula.

Other benefits for the baby are that:

- breastfeeding reduces the risk of infectious disease such as meningitis, gastroenteritis, respiratory and ear infections because it contains maternal antibodies
- it reduces the risk of food allergy
- it may reduce the risk of sudden infant death syndrome
- it may reduce the likelihood of overweight during childhood and adolescence (Dietz 2001; Gillman et al 2001; Hediger et al 2001).

For the mother, benefits of breastfeeding are that:

- it speeds up the involution of the uterus after birth
- it provides emotional and physical satisfaction to the mother and may help the mother to return to her pre-pregnancy weight
- it does not require preparation
- exclusive on-demand breastfeeding may help to space pregnancies
- it may reduce the risk of premenopausal breast cancer (Zheng et al 2001).

APPENDIX 2:

Proposed indicators

The Ministry of Health has negotiated accountability agreements with District Health Boards which contain indicators related to NZHS priority areas. These indicators will be re-examined, in conjunction with DHBs, in the light of work carried out in completing this Toolkit. Some nutrition related indicators are included within the accountability agreements and are contained within child health indicators. These indicators relate to breastfeeding rates at six weeks and three months, and the Baby Friendly Hospital Initiative. These indicators are listed below.

Child Health Indicators 15 and 16: Breastfeeding rates at 6 weeks and 3 months

Rationale

Ideally every infant should be exclusively breastfed for the first four to six months of life. Human milk offers species-specific immunological advantages to the infant, and it contains an optimal combination of nutrients for growth and development. Both colostrum and mature milk provide host-resistance factors against bacterial and viral infection. Breastfeeding insures intimate contact between mother and infant, an important factor in the process of bonding.

Numerator (Data source: Plunket)

The number of babies, aged six weeks, that are fully breastfed (fully breastfed means only breast milk, water, or medicine), during the reporting period.

Denominator (Data source: Plunket)

The number of babies, aged six weeks, seen during the reporting period.

Numerator (Data source: Plunket)

The number of babies, aged three months, that are fully breastfed (fully breastfed means only breast milk, water, or medicine), during the reporting period.

Denominator (Data source: Plunket)

The number of babies, aged three months, seen during the end of the reporting period.

Indicator	Full breastfeeding rate at 6 weeks
Reporting period	6 months ending 31 December 2001; 12 months ending 30 June 2002
Indicator type	Primary outcome
Accountability status	Accountability indicator
Interpretation issues	
Population breakdown	Total population, and Maori/Pacific peoples/Other
Methodology	These data will be generated centrally and forwarded to DHBs
Baseline data	Refer p95 of <i>Indicator Dictionary (2001/02) Personal and Family Health</i>

Indicator	Full breastfeeding rate at 3 months
Reporting period	6 months ending 31 December 2001; 12 months ending 30 June 2002
Indicator type	Primary outcome
Population breakdown	Total population, and Maori/Pacific peoples/Other
Methodology	These data will be generated centrally and forwarded to DHBs
Baseline data	Refer p96 of <i>Indicator Dictionary (2001/02) Personal and Family Health</i>

Child Health Indicator 02: Progress in implementing the Baby Friendly Hospital Initiative in maternity facilities

Objective

Current breastfeeding rates in New Zealand are high in terms of initiation but decrease significantly within the first three months. The benefits of breastfeeding are well documented for the baby and mother. Increasingly the benefits of breastfeeding are also being linked to reducing the risk of some major non-communicable diseases and improving health status into adulthood to increase breastfeeding rates.

The Baby Friendly Hospital Initiative (BFHI) is a World Health Organization initiative. It is recognised as making a positive contribution to promoting successful breastfeeding in maternity facilities. Currently no maternity facilities in NZ are designated as baby friendly according to the BFHI criteria.

Measure

Progress in implementing the BFHI in maternity facilities.

Frequency

Annual

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