

**NSW Food
and Nutrition
Monitoring Project**



Recommendations for Food and Nutrition Monitoring in NSW



The University of Sydney

NSW HEALTH
Better Health Good Health Care

Health
Working as a Team
The Way Forward

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Abbreviations used in this document

ABS	Australian Bureau of Statistics
ACHPER	Australian Council for Health, Physical Education and Recreation
AGPS	Australian Government Publishing Service
AIHW	Australian Institute of Health and Welfare
ANZFA	Australia and New Zealand Food Authority
BMI	Body mass index
FSI	Fat and sugar index
HDL	High density lipoprotein
LDL	Low density lipoprotein
NATSIS	National Aboriginal and Torres Strait Islander Survey
NHMRC	National Health and Medical Research Council
NHS	National Health Survey
NNMS	National Nutrition Monitoring System
NNS	National Nutrition Survey
NPHP	National Public Health Partnership
SIGNAL	Strategic Inter Governmental Nutrition Alliance
YRBS	Youth Risk Behaviour Survey

Contextual note - Links with the Australian Food and Nutrition Monitoring Unit

The work undertaken in the development of this document preceded the establishment of the Australian Food and Nutrition Monitoring Unit. The Unit was established at the University of Queensland in 1999 by the Commonwealth Department of Health and Aged Care to develop an ongoing nationally coordinated food and nutrition monitoring system for Australia.

Many of the modules and recommendations contained in this document are still current and relevant to NSW. However, since the writing of this document, the Australian Food and Nutrition Monitoring Unit has begun work on several key areas which will contribute to and enable better food and nutrition monitoring at the State and Area level in NSW.

Key projects of the Australian Food and Nutrition Monitoring Unit include:

Compendia of data sources, Methodological Guidelines, and Indicators

- a food and nutrition data sources catalogue, and a framework for its use;
- guidelines for the use and interpretation of dietary data from the 1995 national nutrition survey;
- guidelines for using and comparing existing national dietary survey data;
- specifications of standard questions and guidelines for measuring selected food habits in the Australian population (including the prevalence of breastfeeding);
- a set of nationally agreed indicators for monitoring the nutrition situation in Australia

Reports on the food and nutrition situation in Australia

- a comprehensive report on the food and nutrition intake trends of Australians
- a status report on the diet and health of the Australian population
- an interim evaluation of the effects of folate fortification, and
- collation of data on food and nutrition status of population subgroups.

It is within this context that the information and recommendations contained herein should be considered. Further work in nutrition monitoring in NSW will need to be undertaken in collaboration with AFNMU, and focus on those monitoring activities which are best undertaken at State and Area levels.

Further information about the Australian Food and Nutrition Unit can be found at the website address <http://www.sph.uq.edu.au/nutrition/monitoring> or contact

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Executive Summary

What is the purpose of the Recommendations document?

Recommendations for Food and Nutrition Monitoring in NSW makes recommendations for meeting food and nutrition monitoring needs in NSW which:

- provide timely, high-quality, accessible and appropriate data for decision-making about nutrition policy and programs, and
- complement national, State and local monitoring initiatives.

The recommendations outlined in this document suggest future directions for food and nutrition monitoring in NSW and will be used by NSW Health to guide the development of the Food and Nutrition Monitoring system in NSW.

Recommendations made relate to:

- indicators for nutrition monitoring in NSW,
- appropriate tools and mechanisms for collection, analysis, reporting, feedback and dissemination of data on chosen indicators,
- appropriate roles for the various agencies and levels of government in relation to data collection, analysis, and dissemination.

Why make recommendations for food and nutrition monitoring in NSW?

Up-to-date information is needed to make good management decisions about nutrition policies and programs. Monitoring systems can contribute valuable information to meet many of these requirements, such as: tracking progress towards goals and targets; assessing the impact of the total effort to improve nutrition; and planning and improving policies, programs and services.

Food and nutrition monitoring is important at the national, State and local levels of the health system. The **monitoring responsibilities** and the **types of information** which are relevant at the three levels vary. A planned approach to nutrition monitoring at the State level is needed to ensure that State priorities are addressed, that local monitoring activities relevant to these priorities are well coordinated, and that State monitoring complements national and local monitoring initiatives.

Who are the recommendations for?

1. **NSW Health Department:** Sun Exposure, Nutrition and Physical Activity Unit; Health Promotion Branch; Research and Clinical Policy Branch; Epidemiology and Surveillance Branch; and the Chief Health Officer,
2. **NSW Area Health Service personnel:** Area Planners, Area Health Promotion and Public Health Unit personnel, Community Nutritionists, Health Outcomes Councils, and

3. **Other** potential suppliers and users of nutrition information, including: federal agencies, researchers and public health academics, nutrition-related non-government organisations and other State governments.

In order to meet the needs of users, **consultations** were conducted with health professionals throughout NSW. Participants identified the most important issues and indicators needed for State-wide monitoring and how they use nutrition information. This consultation process, together with an extensive literature review and liaison with national groups contributed to determining which components to include in *Recommendations for Food and Nutrition Monitoring in NSW*.

Components of the Recommendations:

- **Short modules:** Short sets of questions have been compiled which are suitable for use in population-based surveys, including the NSW Health Survey. These measure key aspects of dietary habits, such as intake of fruit, vegetables, breads and cereals; and habits related to fat, saturated fat, calcium and iron intake; breastfeeding and other infant feeding practices; food security; barriers to dietary change and meal patterns. Questions have been extensively researched and the rationale for inclusion of each are given in detail.
- **A guide for monitoring overweight and obesity in NSW:** This includes recommendations on what should be measured and how to measure overweight and obesity; standards for classifying weight status; and options for obtaining information on various population groups in NSW.
- **A validity study of self-reported weights and heights:** The error associated with self-reported weight and height data differs between population groups, over time, and with the mode of questions, (e.g., telephone questions versus face-to-face interviews). Estimates of the error were therefore required from the NSW Health Survey. A detailed proposal was developed for the measurement of weights and heights on a sub sample of respondents from this survey and a validation study was subsequently conducted.
- **The National Nutrition Survey NSW data:** Specifications for information required from the 1995 National Nutrition Survey are outlined, including recommendations for analysis, presentation and dissemination of NSW data.
- **Update of Catalogue:** Recommendations are made for the production and dissemination of the first update of □Food and Nutrition in NSW - a catalogue of data□. This catalogue provides a comprehensive source of data and is widely used by health and nutrition professionals in NSW.

- **Other activities:** Recommendations are made concerning other monitoring activities which require development, implementation and support in NSW including:
 - Identifying and monitoring indicators of the food 'environment'
 - Development of short questions for population-based surveys of vulnerable groups, including selected ethnic groups and children;
 - Growth monitoring of children in vulnerable population sub-groups;
 - Improved documentation of outcomes of recent nutrient fortification programs;
 - Surveys of household food insecurity among disadvantaged groups;
 - Improved information about the initiation and duration of breastfeeding;
 - Monitoring meals available in institutional settings, e.g. child care centres, hospitals;
 - Establishing a National Network for sharing expertise, methods, and development of assessment tools for food and nutrition monitoring.

Chapter 1: Introduction

1.1 The role and importance of nutrition monitoring

1.1.1 What is food and nutrition monitoring?

The terms ‘**monitoring**’ and ‘**surveillance**’ have been defined in many different ways and are sometimes used interchangeably (Mason et al 1984, Marks 1991, Lester 1994, Coles-Rutishauser and Lester 1995, LSRO 1995). For the purpose of this document, the term ‘**nutrition monitoring**’, is defined as:

‘A description of trends in indicators of the food and nutrition situation useful for decision-making that will lead to improvements in the nutritional status of populations.’

Effective nutrition monitoring systems have the following characteristics, they:

- have some person or unit responsible for coordinating the activities,
- focus only on data necessary for making important decisions,
- address all components of the food and nutrition system, i.e., food production and distribution, food and nutrient intake, nutritional status and related health outcomes of the population,
- pay particular attention to subgroups of the population which may be at risk,
- include appropriate and timely analysis, interpretation, presentation and dissemination of information,
- include mechanisms for evaluation and feedback on the information’s usefulness for decision-making, and
- are practical and cost-effective (United Nations 1975, Mason et al 1984, MMWR 1988, Marks 1991, Habicht and Mason 1983, Thacker and Stroup 1994, Lester 1994, Coles-Rutishauser and Lester 1995, LSRO 1995).

1.1.2 What nutrition information do managers require and how much of this information can be provided by a monitoring system?

Up-to-date information of various types is needed to make good management decisions about nutrition policies and programs. The types of information required are shown in Figure 1.1. Monitoring systems can contribute valuable information to meet many of these requirements (highlighted in Figure 1.1), but not others. For instance, documentation of the prevalence of nutrition problems in the general population and vulnerable groups can be supplied as part of a monitoring program. However, conclusive evidence about the causes of nutrition problems cannot be supplied by monitoring systems; experimental and/or quasi-experimental studies are required.

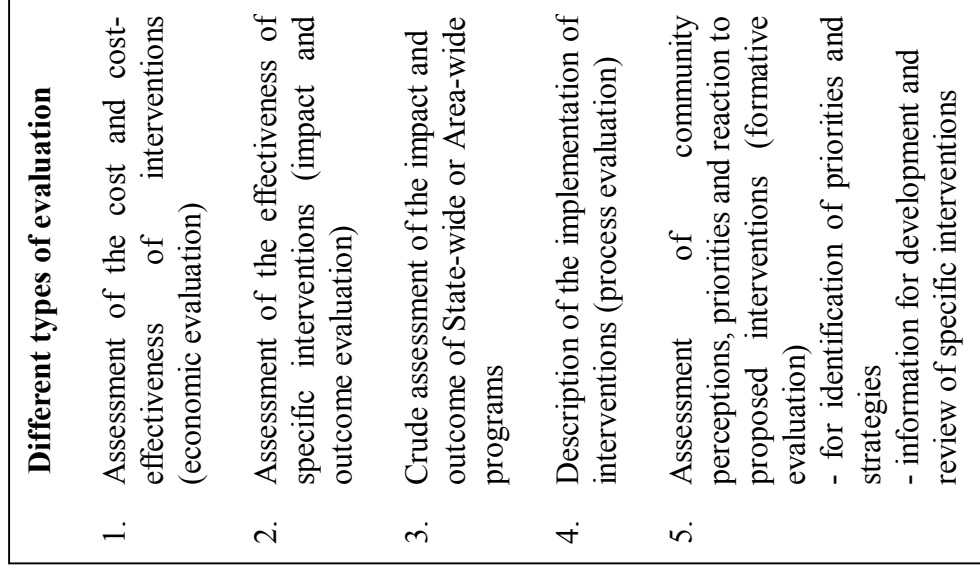
The relative burden of nutrition-related diseases can be described using monitoring data, but costing of such diseases involves complex economic analysis. Tracking of changes in the food system, behaviours and/or nutritional and health status of the population is a major part of the

monitoring process, but only the highest priorities for information can usually be afforded. Tracking provides a crude assessment of the impact of State-wide or Area-wide nutrition policies and programs, but it is difficult to be sure that the effects seen are the result of particular programs. Monitoring can be used to indicate uptake of particular strategies and provide consumer information for selection of priorities and strategies. The more detailed evaluation results required for assessment of the effect of specific programs, process evaluation for program management, and economic evaluations are beyond the realms of monitoring systems.

The types of information represented in Figure 1.1 are used for a variety of purposes, including:

- tracking progress towards goals and targets,
- assessing the impact of the total effort to improve nutrition,
- policy formulation,
- planning and review of policies, programs and services,
- identifying intervention priorities, resource allocation,
- selection and development of interventions,
- initiating and sustaining political support for particular policies and programs,
- identification of further research priorities,
- predicting future trends,
- development of goals and targets, and
- education of health professionals and the public (Mason et al 1984, Marks 1991, Habicht and Mason 1983, Thacker and Stroup 1994, Pelletier and Shrimpton 1994, Lester 1994, Coles-Rutishauser and Lester 1995, Pelletier 1995).

Figure 1.1: Information used by managers and policy-makers - how much can be supplied by monitoring^a?



^aTypes of information which can be supplied by monitoring initiatives are shaded and italicised

1.1.3 The role of nutrition monitoring at different levels of the health system

Food and nutrition monitoring is important at the national, State and local levels of the health system. There are organisational links between these three levels and each can support the others in the development and implementation of monitoring initiatives. However, the **monitoring responsibilities** and the **types of information** which are relevant at the three levels vary.

For instance, some initiatives are most appropriately carried out at the **national level**, such as:

- the development of standard definitions and questions for monitoring - to ensure comparability of survey results across States and Territories, and
- ensuring the adequacy of trend data for reporting progress on the achievement of national nutrition goals and targets and for meeting Australia's international reporting commitments, such as OECD reports on food supply for member countries.

At the **State level**, monitoring should:

- specifically address State priorities and involve coordination of local monitoring relevant to these priorities. Most of the initiatives proposed in *Recommendations for Food and Nutrition Monitoring in NSW* will be useful and appropriate at the State-wide and local levels, involving State-level coordination and local-level cooperation (and in some cases local data collection and analysis),
- include State-wide surveys which provide sufficient sample sizes to allow Area-based comparisons, and
- include sentinel site monitoring of specific issues (i.e., selection of sites based on demographic characteristics and/or risk profiles of their residents).

Local monitoring systems:

- should be tailored to program and organisational needs, as well as reporting requirements of funders and needs of State and national nutrition monitoring systems,
- should include Area-wide monitoring of some nutrition indicators, such as those included in the NSW Health Survey (refer to Chapter 4) and suggested for inclusion in Area Performance Contracts. Most of these local monitoring initiatives, however, are best coordinated and directed at the State level to allow meaningful comparisons between the results obtained in different Area Health Services,
- include the evaluation of specific nutrition interventions, including process evaluation of program implementation, providing useful information not strictly within a monitoring framework, but nonetheless valuable for decision-making by public health planners and practitioners,
- may be supplemented with external data for overall program management purposes, such as needs assessment and assessing a program's contribution toward State and national goals and targets.

The priorities for food and nutrition **issues** to be monitored also vary at the local, State and national levels. For instance, the assessment of the adequacy of the food supply in relation to the energy and nutrient needs of the population is best made using national apparent consumption statistics which are not available at the State or local level. Conversely, the assessment of the quality of the food supply in school canteens is appropriate at the State and local levels. Other issues, such as food intake in relation to current goals and targets, the prevalence and duration of breastfeeding and the weight status of the population, are important issues for monitoring at all three levels. Where issues are of common interest, the use of standard health and nutrition indicators will assist in comparison of results. In addition to priorities which have been identified at the national and State levels, Area Health Services may identify specific nutrition issues for monitoring at the local level which are of particular interest because of the demographic profile of their population or the programs and services which require tracking.

1.2 The NSW Food and Nutrition Monitoring Project and Recommendations document

1.2.1 What is the NSW Food and Nutrition Monitoring Project?

The NSW Food and Nutrition Monitoring Project was a time-limited project funded by the NSW Department of Health with the following goals and objectives:

Goals

1. To provide timely, high-quality, accessible, appropriate data for decision-making for nutrition in NSW.
2. To complement national, State and local initiatives relevant to nutrition monitoring.
3. To take particular account of the needs of nutritionally vulnerable groups such as Aboriginal communities and lower socio economic groups.

Objectives

1. To recommend indicators for nutrition monitoring in NSW, with an appropriate balance between process and outcome indicators.
2. To specify appropriate tools and mechanisms for collection, analysis, reporting, feedback and dissemination of data on chosen indicators.
3. To recommend appropriate roles for the various agencies (including Area Health Services) and levels of government in relation to data collection, analysis, and dissemination.
4. To ensure that the proposed systems are feasible and affordable.

1.2.2 Documents produced by the NSW Food and Nutrition Monitoring Project

Recommendations for Food and Nutrition Monitoring in NSW

This document (which you are currently reading) is an overview of recommendations for meeting food and nutrition monitoring needs in NSW. Each chapter is devoted to a specific aspect of NSW monitoring as follows:

- Chapter 2 contains *Recommendations for specific monitoring initiatives in NSW*. This includes a recommendation for the NSW Health Department to establish strategic partnership with a suitably experienced group to carry out or support the development of specific monitoring initiatives,
- Chapter 3 - *National Networking to enhance NSW Food and Nutrition Monitoring*, contains recommendations for discussion of issues to enable and support States and Territories to conduct more effective monitoring systems, and
- Chapters 4-6 address specific methods (*Short modules for measuring key aspects of food habits and food intakes in population-based surveys in NSW*), surveys (*Information required from the National Nutrition Survey*) or issues (*Recommendations for monitoring overweight and obesity in NSW*).

Recommendations for Food and Nutrition Monitoring in NSW is intended primarily for people working in NSW health services who require nutrition-related information to set policies and priorities, or who manage or conduct nutrition-related programs and services, including:

- the NSW Health Department: Sun Exposure, Nutrition and Physical Activity Policy Unit; Health Promotion Branch; Research and Clinical Policy Branch; Epidemiology and Surveillance Branch; and the Chief Health Officer, and
- NSW Area Health Service personnel: Area Planners, Area Health Promotion and Public Health Unit personnel, Community Nutritionists, Health Outcomes Councils.

It is also intended for:

- federal agencies that use or supply nutrition information, such as the Commonwealth Department of Health and Aged Care: Public Health Division Nutrition Group, the Australian Institute of Health and Welfare and the National Public Health Partnership group, and
- researchers and public health academics, nutrition-related non-government organisations and other State governments.

Such agencies have an interest in the direction that NSW takes with regard to food and nutrition monitoring initiatives, and how NSW efforts can complement and contribute to national efforts.

Two separate reports accompany *Recommendations for Food and Nutrition Monitoring in NSW*, and provide more detail for those who wish to assess and monitor the issues and indicators addressed by the reports:

1. *Measuring key aspects of food habits and food intakes in population-based surveys in NSW: recommendations for short modules* (Hewitt et al 1998).
2. *Recommendations for monitoring overweight and obesity in NSW* (NSW HD 2000).

1.2.3 Issues and indicators addressed by Recommendations for Food and Nutrition Monitoring in NSW

Recommendations for Food and Nutrition Monitoring in NSW and accompanying reports do not address **all** of the nutrition issues and indicators which have the potential to be used in decision-making at the State and local levels in NSW. The main aim of the NSW Food and Nutrition Monitoring Project was to enhance food and nutrition monitoring in NSW in relation to current priority needs. It was not designed to fulfil all State and local monitoring requirements, but instead, to:

- focus on information that managers and policy-makers currently use and which can be provided by a monitoring system,
- enhance current initiatives, and
- make recommendations regarding appropriate future monitoring directions.

Given that there may be few new resources available for food and nutrition monitoring in NSW in the immediate future, the 'list' of initiatives has been kept relatively short and the cost implications kept as low as possible. The elements of *Recommendations for Food and Nutrition Monitoring in NSW* were designed with flexibility in mind, so that new priorities or issues which may emerge in the near future can be incorporated into the ongoing NSW monitoring program.

The subset of indicators which are addressed by *Recommendations for Food and Nutrition Monitoring in NSW* are highlighted in Table 1.1, and the component of *Recommendations for Food and Nutrition Monitoring in NSW* which addresses each indicator is included.

Table 1.1: Nutrition-related issues and indicators for monitoring

	Nutrition issue	Potential topics for indicators^a	Component of the document which addresses highlighted indicator^b
Anthropometry	Weight status of adults	◆ weights, heights, BMI	◆ R2, R3, R4, R5, R6, M, OO
		◆ waist-hip ratio	◆ R2, R3, R5, R6, OO
Nutrient intake	Growth and weight status of children	◆ weights, heights, BMI	◆ R2, R3, R5, R6, OO
		◆ weight for age,	◆ R2, R6, OO
		◆ weight for height ratio	◆ R2, R6, OO
		◆ total fat intake	◆ R2, R3, R5
		◆ saturated fat intake	◆ R2, R3, R5
Iron intake	Iron intake	◆ intake of cereals and meat	◆ R4, M
		◆ iron intake	◆ R2, R3, R5
Calcium intake	Calcium intake	◆ intake of milk and milk products	◆ R4, M
		◆ calcium intake	◆ R2, R3, R5
Physical and Biochemical Measures	Folate intake	◆ folate intake	◆ R2, R3, R5
		◆ blood cholesterol	◆ R3
	Blood pressure status	◆ blood pressure	◆ R3
		◆ iron deficiency anaemia	◆ R3
	Iron status	◆ iron deficiency anaemia	◆ R3
		◆ folate status	◆ R3

	Nutrition issue	Potential topics for indicators ^a	Component of the document which addresses highlighted indicator ^b
Attitude and beliefs	Weight status	<ul style="list-style-type: none"> ◆ weight related attitudes 	
Food habits	Intake of core food groups	<ul style="list-style-type: none"> ◆ breads and cereals, fruit and vegetables 	<ul style="list-style-type: none"> ◆ R2, R3, R4, R5, M
	Breastfeeding	<ul style="list-style-type: none"> ◆ prevalence and duration 	<ul style="list-style-type: none"> ◆ R2, R4, M
	Infant feeding	<ul style="list-style-type: none"> ◆ age of introduction of formula, cow's milk and solids 	<ul style="list-style-type: none"> ◆ R4, M
	Meal patterns	<ul style="list-style-type: none"> ◆ number of eating occasions, breakfast, takeaways and meals outside home ◆ usual way of eating 	<ul style="list-style-type: none"> ◆ R2, R3, R4, R5, M ◆ R4, M
	Fat consumption habits	<ul style="list-style-type: none"> ◆ use of reduced fat dairy products, fried foods and high fat meats 	<ul style="list-style-type: none"> ◆ R2, R3, R4, R5, M
	Salt consumption habits	<ul style="list-style-type: none"> ◆ salt added to foods 	<ul style="list-style-type: none"> ◆ R2, R3, R5
	Alcohol consumption habits	<ul style="list-style-type: none"> ◆ alcohol consumption habits 	
	Dietary change patterns	<ul style="list-style-type: none"> ◆ self-reported changes to diet and reasons ◆ desire to change diet ◆ barriers to change 	<ul style="list-style-type: none"> ◆ R4, M ◆ R4, M ◆

	Nutrition issue	Potential topics for indicators^a	Component of the document which addresses highlighted indicator^b
Food habits continued	Food security	<ul style="list-style-type: none"> ◆ missing meals for reasons of money ◆ more detailed investigations of food security 	<ul style="list-style-type: none"> ◆ R2, R3, R4, R5, M
Other health-related habits	Weight status	<ul style="list-style-type: none"> ◆ weight related behaviours 	<ul style="list-style-type: none"> ◆ R2, R4, M
Food system	Food production (agriculture)	<ul style="list-style-type: none"> ◆ farms/farmers, hectares ◆ value and quantity of production ◆ local farmers markets 	
	Processing	<ul style="list-style-type: none"> ◆ salt content of staple foods ◆ fortification of foods 	<ul style="list-style-type: none"> ◆ R3 ◆ R3
	Food retailing	<ul style="list-style-type: none"> ◆ sales, price, availability and promotion of healthy choices ◆ supermarkets/shops to population 	<ul style="list-style-type: none"> ◆ R2, R3 ◆ R2
	Food safety	<ul style="list-style-type: none"> ◆ food handlers trained ◆ compliance with hygiene ◆ compliance of labeling ◆ micro biological contamination ◆ prevalence of reported food borne illness ◆ consumer confidence in food supply 	<ul style="list-style-type: none"> ◆ R3 ◆ R3 ◆ R3 ◆ R3 ◆ R3 ◆ R3
	Food service in institutions (hospitals,	<ul style="list-style-type: none"> ◆ purchases of selected wholesale 	<ul style="list-style-type: none"> ◆ R3

	Nutrition issue	Potential topics for indicators ^a	Component of the document which addresses highlighted indicator ^b
continued	child care centres, schools, nursing homes)	<ul style="list-style-type: none"> ◆ menus/recipes consistent with products ◆ catering practices 	<ul style="list-style-type: none"> ◆ R2, R3 ◆ R3
	Food service in commercial settings, e.g., takeaway shops	<ul style="list-style-type: none"> ◆ purchases of selected wholesale products ◆ menus/recipes consistent with criteria ◆ catering practices 	<ul style="list-style-type: none"> ◆ R3 ◆ R3 ◆ R3

^aThose addressed by the Recommendations for Food and Nutrition Monitoring in NSW are shaded and italicised

^b Key to abbreviations for various components of Recommendations for Food and Nutrition Monitoring in NSW and accompanying reports:

R2= Recommendations, Chapter 2: Recommendations for specific monitoring initiatives in NSW

R3= Recommendations, Chapter 3: National networking to enhance NSW Food and Nutrition Monitoring

R4= Recommendations, Chapter 4: Short modules for measuring key aspects of food habits and food intakes in population-based surveys

R5= Recommendations, Chapter 5: Information required from the National Nutrition Survey

R6= Recommendations, Chapter 6: Recommendations for monitoring overweight and obesity in NSW

M= Report on *Measuring key aspects of food habits and food intakes in population-based surveys in NSW: recommendations for short modules* (Hewitt et al 1998)

OO= Report on *Recommendations for monitoring overweight and obesity in NSW* (NSW HD 2000)

1.2.4 What influenced the choice of components for Recommendations for Food and Nutrition Monitoring in NSW?

In 1994, the NSW Health Department published *Food and Nutrition in NSW - a catalogue of data* (Stickney et al 1994). This document provided a comprehensive collation and interpretation of the information available at that time about the food supply, food intake and nutritional status of the NSW population. ‘The *Catalogue of data*’ was instrumental in identifying the major gaps in nutrition data collection, analysis and interpretation for use by those working in public health nutrition in NSW. It was essentially the first step in the development of *Recommendations for Food and Nutrition Monitoring in NSW*.

In order to ensure that *Recommendations for Food and Nutrition Monitoring in NSW* will meet users needs, the Project consulted a wide variety of people working in the field of public health nutrition. Community nutritionists, Area Health Promotion and Public Health personnel, NSW Health Department administrators and policy-makers, academics and non-government organisations were contacted to identify:

- the most important issues and indicators for State-wide monitoring,
- how these people use nutrition information, and
- how they prefer to receive information about food and nutrition.

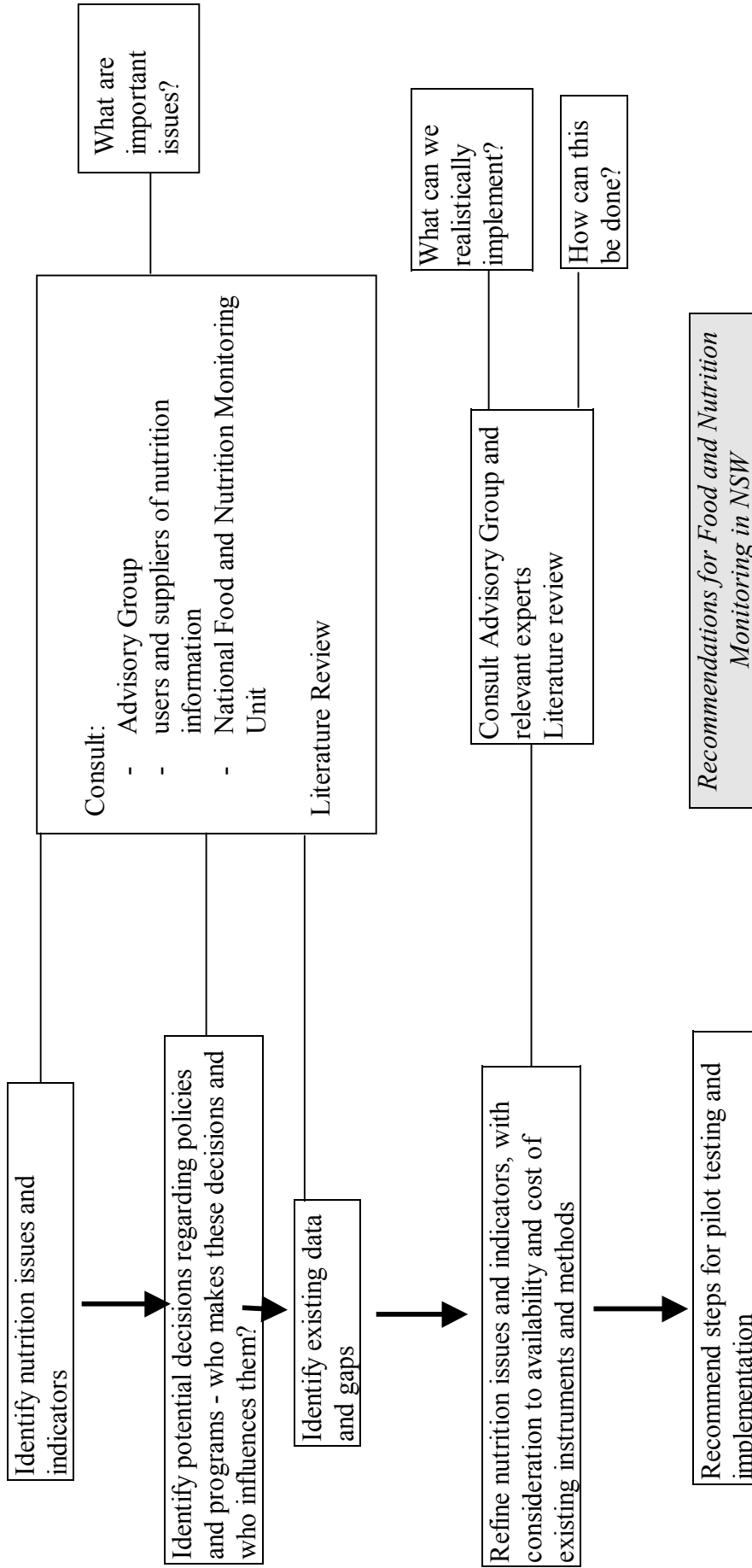
A summary report of these consultations can be found in Appendix 1.

A formal Advisory Group was established to guide the work of the NSW Food and Nutrition Monitoring Project and consisted of representatives of several units of the NSW Health Department, selected members of the NSW Food and Nutrition Monitoring Team and a regional nutrition representative. The Advisory Group assisted with decisions at all stages of the development of *Recommendations for Food and Nutrition Monitoring in NSW*. Figure 1.2 shows the development process for the document. The Advisory Group was particularly important for keeping the Project informed of current national, State and local initiatives which were relevant to monitoring in NSW (refer to Figure 1.3 below). These initiatives also had a major influence on the content and structure of the document.

In addition to these consultations, liaison with the National Food and Nutrition Monitoring Unit of the Australian Institute of Health and Welfare, and an extensive literature review, were conducted to identify the most appropriate issues and indicators, the kinds of decisions which were likely to be made based on nutrition information, and the current availability of NSW food and nutrition data (including identification of gaps in the information system).

Further consultations with the Advisory Group and relevant experts were conducted to refine the list of nutrition issues and indicators for monitoring, with consideration to the availability and cost of existing instruments and methods. *Recommendations for Food and Nutrition Monitoring in NSW* contains recommended steps for pilot testing and implementation of monitoring initiatives in NSW.

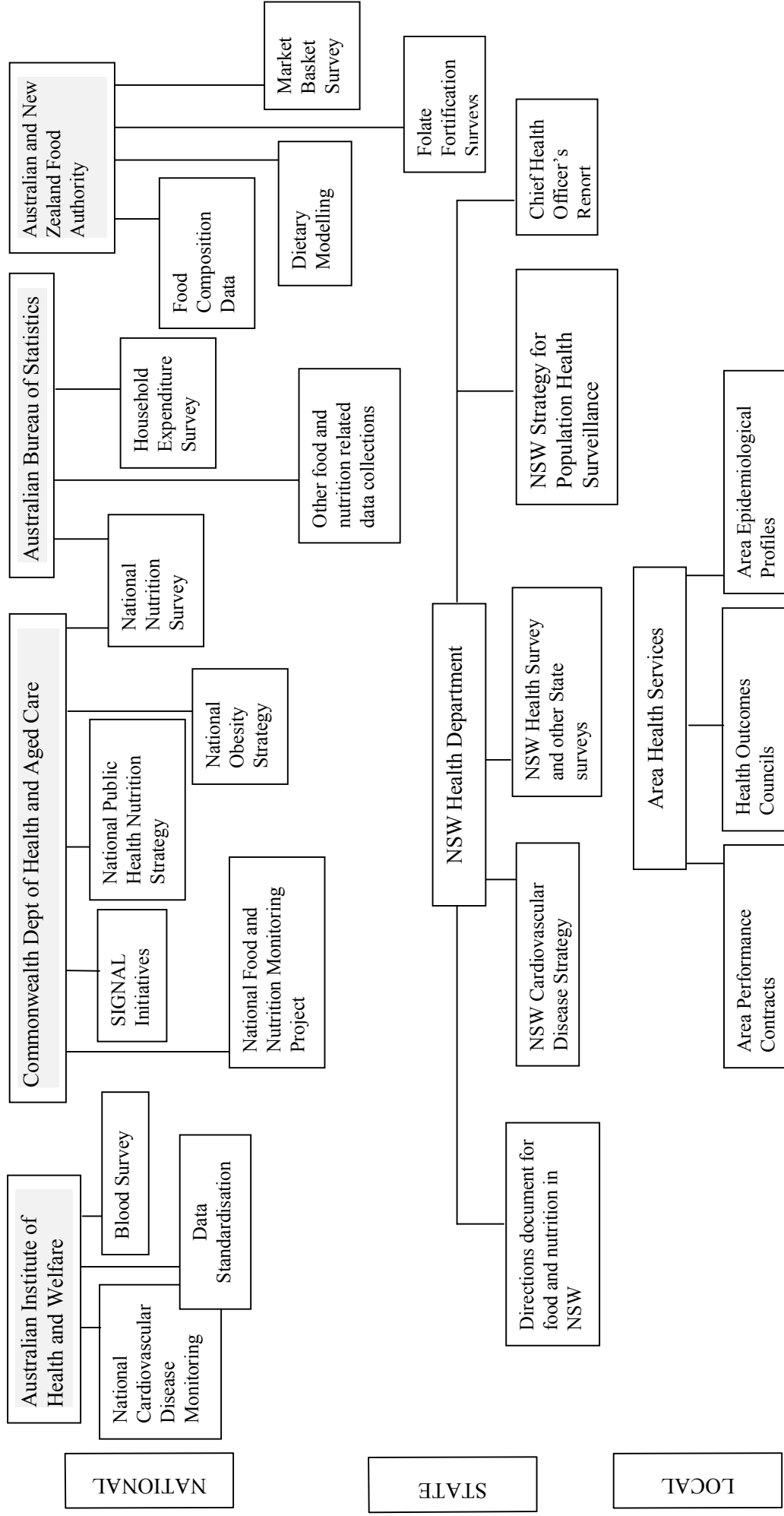
Figure 1.2: Development process for Recommendations for Food and Nutrition Monitoring in NSW



1.2.5 Current initiatives that will benefit from a planned approach to nutrition monitoring in NSW

There are many initiatives currently underway at the national, State and local level which are relevant to a planned approach to nutrition monitoring in NSW. Some examples of these initiatives are shown in Figure 1.3 and a description of how the major initiatives relate to *Recommendations for Food and Nutrition Monitoring in NSW* is contained in Appendix 2.

Figure 1.3: Some current examples of initiatives that will benefit from a planned approach to nutrition monitoring in NSW



References

- (AIHW) Australian Institute of Health and Welfare. *National Health Data Dictionary. Version 7.0.* AIHW Catalogue no. HWI 15. AIHW, Canberra, 1998.
- Bennett S, Dobson AJ and Magnus P. *Outline of a national monitoring system for cardiovascular disease.* (Cardiovascular Disease Series; no. 4). Australian Institute of Health and Welfare, Canberra, 1995.
- Catford J, Sindall C, Clark R and Stafford H. *Australia's Food and Nutrition Policy Phase 2. Building a National Public Health Nutrition Strategy. A framework for Government Health Authorities.* Health Strategies Deakin, July 1997.
- (CDHHC) Commonwealth Department of Health, Housing and Community Services. *Food and Nutrition Policy.* AGPS, Canberra, 1992.
- Coles-Rutishauser IHE and Lester IH. *Plan for a national food and nutrition monitoring program.* Food and Nutrition Monitoring Unit Working Paper No. 95.2, Australian Institute of Health and Welfare, Canberra, 1995.
- Coles-Rutishauser IHE. *A guide to instruments for monitoring food intake, food habits and dietary change.* Food and Nutrition Monitoring Unit Working Paper No. 96.2, Australian Institute of Health and Welfare, Canberra, 1996.
- Habicht J-P and Mason J. Nutritional Surveillance: Principles and Practice. In: McLaren DS (editor). *Nutrition in the Community.* John Wiley and Sons Ltd, 1983.
- Health Strategies Deakin. *Towards a National Strategic Framework for implementing Australia's Food and Nutrition Policy.* Issues paper, Health Strategies Deakin, Feb 1997.
- Hewitt M, Stickney B and Webb K. *Measuring key aspects of food habits and food intakes in population-based surveys in NSW: recommendations for short modules.* NSW Health Department, 1998.
- Lester IH. *Australia's Food and Nutrition.* AGPS, Canberra, 1994.
- (LSRO) Life Sciences Research Office. *Third Report on Nutrition Monitoring in the United States.* US Government Printing Office, Washington D.C., 1995.
- Marks GC. Nutritional surveillance in Australia: a case of groping in the dark? *Aust J Public Health* 1991; 15(4): 277-280.
- Martin S and Macoun E. *Food and Nutrition - Directions for NSW 1996-2000.* Health Promotion Branch, NSW Health Department, 1996. ISBN 0 7310 925X. State Health Publication No: (HP) 96-0116.

Mason JB, Habicht J-P, Tabatabai H and Valverde V. *Nutritional surveillance*. WHO, Geneva, 1984.

(MMWR) Morbidity and Mortality Weekly Report. *Guidelines for evaluating surveillance systems*. MMWR, Centers for Disease Control 1988; 37 (suppl. no. S-5):(1-18).

(NHMRC) National Health and Medical Research Council. *Acting on Australia's Weight - A strategic plan for the prevention of overweight and obesity*. NHMRC, 1997a.

(NSW CHD EWG) NSW Coronary Heart Disease Expert Working Group. *Coronary Heart Disease, NSW Goals and Targets and Strategies for Health Gain*. NSW Coronary Heart Disease Expert Working Group, NSW Health Department, 1995.

(NSW HD) NSW Health Department. *The Health of the People of New South Wales - Report of the Chief Health Officer*. Public Health Division, NSW Health Department, 1996.

(NSW HD) NSW Health Department. *Strategy for population health surveillance in New South Wales*. Epidemiology and Surveillance Branch, NSW Health Department, 1997. ISBN 0 7313 0698 8. State Health Publication No. (ESB) 970147.

(NSW HD) *Recommendations for monitoring overweight and obesity in NSW*. NSW Health Department, 2000. ISBN: 0 7347 31434 State Health Publication No (HP) 00028

Pelletier DL and Shrimpton R. The role of information in the planning, management and evaluation of community nutrition programs. *Health Policy and Planning* 1994; 9(2): 171-184.

Pelletier D. The Role of Information in Enhancing Child Growth and Improved Nutrition: A Synthesis. In: Pinstrup-Anderson P, Pelletier D and Alderman H. *Child Growth and Nutrition in Developing Countries*. Cornell University Press, Ithaca, 1995.

Stickney B, Webb KL, Campbell C and Moore AR. *Food and Nutrition in New South Wales: a catalogue of data*. NSW Health Department, 1994. ISBN 0 7310 3658 1. State Health Publication No. (HP) 94-066.

Thacker SB and Stroup DF. Future Directions for Comprehensive Public Health Surveillance and Health Information Systems in the United States. *Am J Epi* 1994; 140(5): 383-397.

United Nations. *Report of the World Food Conference, Rome, 5-6 November 1974*. New York, United Nations, 1975 (Publication E/Conf. 65/20).

Watson MJ, McDougall MK and Coles-Rutishauser IHE. *Scanned retail sales data: an assessment of their potential for nutrition monitoring*. Australian Institute of Health and Welfare, 1995.

Chapter 2: Recommendations for specific monitoring initiatives in NSW

2.1 What is the best way to ensure support for future nutrition monitoring initiatives in NSW?

2.1.1 *The establishment of a mechanism for decision-making regarding food and nutrition monitoring in NSW*

During the life of the NSW Food and Nutrition Monitoring Project, the Project team and the NSW Health Department Advisory Group to the Project were the core decision-making groups for nutrition monitoring in NSW. Beyond the life of the Project, no established group will take responsibility for implementation of *Recommendations for Food and Nutrition Monitoring in NSW*. The NSW Health Department needs to consider ways to address the support of the implementation of the document, for example a working party to make decisions regarding future monitoring initiatives and to provide the State-based forum for discussion of issues relevant to national nutrition monitoring (refer to Chapter 3).

2.1.2 *The establishment of an ongoing strategic partnership to support nutrition monitoring*

To ensure that future nutrition monitoring initiatives in NSW are relevant, timely and effective, the NSW Health Department could consider establishing a partnership with a group which has expertise in nutritional epidemiology and nutrition monitoring.

Establishing formal links between the practice of ‘public health epidemiology’ (in government health departments and their regional offshoots), and ‘research epidemiology’ (in universities and other research organisations) has been recommended as a method of:

- effectively utilising the methodological expertise which is too often isolated in universities,
- linking relevant research and policy development, and
- establishing a mechanism for quickly initiating research on questions that arise through surveillance (Kaldor 1997).

Such a partnership would:

- provide the flexibility necessary to cope with changing demands and expectations for nutrition information in NSW,
- furnish an expert group with sufficient ‘critical mass’ to address nutrition monitoring needs as they arise,
- prevent the dissipation of expertise, and support capacity building and corporate memory for nutrition monitoring in NSW,

- support a long-term arrangement which is essential for ongoing data collection, analysis, dissemination and future planning of monitoring initiatives,
- provide an alternative to the current practice of tendering for individual projects, which is an inefficient mechanism for a process which needs to be coordinated, flexible, innovative and both responsive and pro-active, and
- establish a capacity to respond to special requests for data analysis, including the statistical support required for such analysis.

During the development of *Recommendations for Food and Nutrition Monitoring in NSW*, the Project team was called upon to support several major initiatives relevant to nutrition monitoring in NSW. These included:

- development of the request for analysis of NSW data from the National Nutrition Survey,
- development of nutrition questions for the NSW Health Survey,
- analysis of the nutrition questions from the NSW Health Survey,
- technical advice regarding the analysis of the nutrition questions from the NSW Health Promotion Survey,
- development of nutrition questions for the Drug and Alcohol Schools' Survey,
- development of State-wide nutrition indicators for the NSW Health Department's Model Area Performance Contract,
- assisting in preparation and review of nutrition section of the 1997 Chief Health Officer's Report,
- answering many requests from Area Health personnel for help with nutrition monitoring (short questionnaires, data analysis, etc.).

The number and type of requests made during this one year period was not unusual. In the past, some support was provided for such requests by the Department of Public Health and Community Medicine, University of Sydney but the capacity to respond was limited. The proposed strategic partnership would ensure timely availability of the necessary capacity to respond to these types of requests.

Such a partnership could be established by providing a basic level of core funding to an existing department, for example, for a five year period, which would become the NSW Food and Nutrition Monitoring Unit. This funding would need to be allocated through the NSW Health Department tendering process. A precedent for longer-term funding arrangements has been set by the triennial funding of non-government organisations by the NSW Health Department.

2.2 What are the main nutrition monitoring initiatives which require support for implementation or development in NSW?

2.2.1 Validation of self-reported heights and weights from the NSW Health Survey

The NSW Health Survey includes information on self-reported weights and heights in order to determine weight status of the NSW population. However, previous research has highlighted

the limitations of self-reported weight and height data, including considerable misclassification of weight status, with the extent of misclassification varying between population subgroups, over time and with the conditions under which people self-report the information. It is particularly important to validate self-reported data taken from telephone interviews (the method used in the NSW Health Survey) as this may vary from data collected in face-to-face interviews (National Health Survey - validation study ABS 4359.0 1998) and/or when respondents know their weights and heights will later be measured (National Heart Foundation Risk Factor Prevalence Surveys - validation study Waters 1993).

As part of the work of the NSW Food and Nutrition Monitoring Project on monitoring of overweight and obesity (refer to Chapter 6 and NSW HD 2000), a detailed proposal was developed for the measurement of weights and heights on a sub sample of respondents from the NSW Health Survey. This validation study was subsequently conducted (Flood et al 1999). The results give some indication of the validity of self-reported weight and height data in telephone surveys and will therefore be of interest for all users of the NSW Health Survey and others planning telephone surveys that include such self-reported data. However, because the survey was conducted on a small sample with a low response rate in one Area Health Service, further investigation of this issue would be worthwhile before drawing conclusions. In addition, such validation studies need to be repeated at regular intervals as the relationship between self-reported and measured values is likely to change over time.

2.2.2 Analysis and dissemination of National Nutrition Survey data for NSW

The 1995 National Nutrition Survey (NNS) is the most comprehensive nutrition survey of the Australian population ever undertaken and provides:

- the first nationally representative data on the food and nutrient intakes of Australians since the 1983 and 1985 National Dietary Surveys,
- the first data on food and nutrient intakes for many population subgroups including young children, young adults, older people and rural Australians,
- an opportunity to link the nutrition data from the NNS with National Health Survey data on socio-economic status, self-reported health status and use of health services.

The NNS NSW sample is sufficiently large for some analyses by age and sex, and by metropolitan/rural areas. There are three national NNS publications, but these only contain limited State information. The Australian Bureau of Statistics (ABS) are responsible for the analysis and presentation of NNS data for national purposes and have produced a set of State tabulations for particular issues not included in the national publications. These have been provided to States as paper copies of data tables - no official reports with summaries or interpretation of data are planned.

The NSW Food and Nutrition Monitoring Project identified the NNS information most relevant to NSW priorities (refer to Chapter 5 and Appendix 3). Together with the three national publications, the State tabulations provide NSW with approximately one third of the data identified in the definition of NSW priorities. Thus, there is a substantial amount of useful data available regarding NSW priorities which has not been analysed.

Chapter 5 contains a detailed discussion of the need for analysis and dissemination of NSW NNS data beyond what has been prepared by the ABS, including options for conducting this analysis and dissemination of the results.

2.2.3 Short modules for use in population-based surveys of children and adolescents

Short questions included in population-based surveys can provide useful information about food habits on a regular basis. Recommendations for nutrition-related questions for use in population-based surveys in NSW have been made as part of the work of the NSW Food and Nutrition Monitoring Project (refer to Chapter 4 and Hewitt et al 1998). It is essential that such questions be appropriately tested for their validity so that users of the information can be confident of the results and their interpretation for particular population subgroups. There has been limited validation of food and nutrition-related questionnaires and no validation of short sets of diet questions for use with children and adolescents in population-based surveys in Australia. The major food sources of selected nutrients of concern in the diets of children differ from those of adults. Further, children's attention to what they have consumed, their ability to recall what they have eaten and to average dietary intake to report 'usual' consumption, is different to that of adults. Thus, questions and methods developed for adults are not directly relevant to children and adolescents.

The development of such questions and their subsequent validation is timely and would provide important information for users of the NSW Health Survey and for others conducting population-based surveys involving children and adolescents, such as the school-based surveys conducted by the NSW Health Department.

2.2.4 Production and dissemination of the first update of Food and Nutrition in New South Wales - a catalogue of data

Food and Nutrition in New South Wales - a catalogue of data (Stickney et al 1994) was the first comprehensive collation of information about the food and nutrition situation in NSW, and essentially the first step in the development of recommendations for food and nutrition monitoring in NSW. The production of this publication, funded by the NSW Health Department, was a substantial undertaking. Updating of the catalogue in its current form would not be an efficient method of disseminating the food and nutrition information which has become available since 1994. The production of short reports updating specific aspects of the food and nutrition situation in NSW would be a more feasible and user-friendly option.

Topics for short reports should be chosen based on:

- current requirements for nutrition data for policy and program planning and evaluation,
- the types of data which have become available since the last update.

The topics most relevant for the first update of the NSW Food and Nutrition Catalogue would be the consumption of core food groups (fruits, vegetables, breads and cereals) and the prevalence of overweight and obesity.

This would involve appropriate analysis and presentation of NSW data which have been collected since the production of the 1994 NSW Food and Nutrition Catalogue (including data from the 1995 National Nutrition Survey, the 1994 NSW Health Promotion Survey, the 1996 NSW School Survey and the NSW Health Survey).

Such an update in compilation of existing data would be useful for many purposes, for example, it would provide information relevant to the State-wide promotion of fruits and vegetables and confirm trends in overweight and obesity in NSW.

2.2.5 Options for improving our understanding of the retail food supply in NSW

2.2.5.1 A NSW Food Supply Project

The Queensland Food Supply Project was conducted in 1995-96 to 'describe the Queensland food system and identify the major factors that influence food availability, price, quality and variety, with particular emphasis on rural and remote areas' (Hughes et al 1997). Specific objectives were to:

- describe the food system in Queensland,
- define strategies to address factors that impact upon the food supply and identify where they should be implemented, and
- identify areas for investigation/intervention which could be best achieved by government working collaboratively with industry, other States, Territories and/or Commonwealth agencies.

The project included identification of major distributors and wholesalers, and measurement of price, range, quality and access to foods across rural and remote Queensland. Information was collected through a range of activities, including:

- collection and review of relevant literature,
- collection of demographic, economic and health statistics,
- field trips to over 50 Queensland communities and consultations with over 250 community leaders, health professionals, food producers, wholesalers and retailers, transport operators, government representatives, and consumers across rural and remote Queensland,
- creation of a retail food database containing over 550 food retail establishments in Queensland,
- community surveys on price, quality, quantity, range and access to foods in retail food outlets,
- inputs from and intersectoral steering committee, and
- a workshop with food and transport industry representatives.

Recommendations were made for a food system strategy in Queensland, including implications for public health nutrition policy formulation and implementation.

At the time of compilation of data for *Food and Nutrition in New South Wales - a catalogue of data* (Stickney et al 1994), the information available about the food retail sector in NSW was limited, particularly for rural and remote areas of NSW where problems of limited access

are likely to be greatest. Conducting a project in NSW, using the same methodology as the Queensland Food Supply Project, would provide a detailed analysis of the NSW food retail system, including price, availability, quality, quantity and access to food in retail food outlets, and the factors which influence the retail food supply. This would:

- update, and improve, the food retail data from the NSW Food and Nutrition Catalogue,
- provide information which would be relatively comparable to the Queensland study (given the time difference between the two studies), and
- support the development of NSW policies and programs relevant to the food retail system.

2.2.5.2 *Use of scanning retail sales data for nutrition monitoring*

As part of the work of the National Food and Nutrition Monitoring Unit of the AIHW, an assessment was made of the potential to use scanned retail sales data for nutrition monitoring purposes. A report was produced based on a study using retail sales records for 12 stores in Melbourne in 1993-94 (Watson et al 1995), and included discussion of issues such as:

- access to data,
- data management,
- data quality,
- constraints on data interpretation,
- contribution of scan data to nutrition monitoring, and the
- cost-effectiveness of scan data for monitoring.

The authors concluded that:

- access to data from a representative sample of stores would best be negotiated through the Australian Supermarket Institute or with a major company which has outlets throughout Australia,
- there were issues relating to data management, quality, analysis and interpretation which would need to be taken into account if scan data were used for nutrition monitoring, but that,

scan data:

- have the potential to provide information which is not available on a regular basis from other existing data sources currently used for nutrition monitoring,
- are useful for provision of regular, up-to-date information about shifts in the cost, availability and relative market share of specific food products of nutritional interest, such as polyunsaturated and monounsaturated fat spread, whole and reduced-fat milks and fortified and unfortified breakfast cereals,
- have the potential to be used for local and regional as well as national level monitoring,
- have limited potential for monitoring socio-demographic differentials in food product sales, and
- are likely to be a relatively cost-effective source of data for nutrition monitoring.

There are currently no plans at the national level to investigate brand scan data further, or to establish a national system for collation, analysis and interpretation of brand scan data for monitoring purposes. The establishment of such a system in NSW, however, has the potential to provide valuable information about sales of food products relevant to current State nutrition

priorities, such as breads and cereals. Funding of such a system is therefore one option for updating and improving the currently available food retail data for NSW.

2.2.6 Growth monitoring of children in vulnerable population sub-groups

Growth is a sensitive indicator of nutritional status early in life. Growth stunting and wasting are uncommon in the general population, and so there would be little point to monitoring the growth of all children. However, malnutrition that can be detected by growth monitoring is more common in vulnerable groups such as Aborigines, and those of low socioeconomic status. Growth monitoring in sentinel areas would enable us to identify, track and address rates of malnutrition amongst these vulnerable groups in NSW. Timely feedback of data to relevant community workers and representatives is a well-documented and effective intervention as well as a monitoring process.

The development of a system for monitoring growth among nutritionally vulnerable children in NSW, as an outcome measure of childhood nutritional status, is needed to contribute to improved nutrition programs that target growth. Steps would include:

- consultation and literature review to identify the major purposes of a growth monitoring system, the users and potential users of growth data, what should be measured, among whom, where (sentinel communities in NSW appropriate for such growth monitoring), how, and who would be responsible for data collection, and
- development of a model for analysis and feedback of results which will contribute to better nutrition interventions.

2.3 Other nutrition monitoring initiatives which require support in NSW

2.3.1 Improved documentation of trends in the incidence of neural tube defects and Wernicke's encephalopathy

Two important questions relating to the impact of current Australian food fortification initiatives are:

- what effect has the mandatory thiamine enrichment of bread-making flour had on the incidence of Wernicke's encephalopathy, and
- what effect will the fortification of the food supply with folate have on the prevention of neural tube defects (Coles-Rutishauser and Lester 1995).

Documentation of trends in the incidence of these conditions in NSW and many other States and Territories is currently inadequate (Bower et al 1993, Ma and Truswell 1995, Wood 1998). Improvements in the NSW monitoring of these conditions is therefore essential to contribute to national statistics in order to answer these questions.

2.3.2 Studies of food insecurity among disadvantaged groups

Recommendations for monitoring food insecurity as part of the NSW Health Survey have been made in Chapter 4 of this document and the accompanying report on questions for use in population-based surveys in NSW (Hewitt et al 1998). However, only limited questions can be used in general health surveys of this kind, and telephone methodology tends to exclude the most socio-economically disadvantaged groups, as they are the most likely to be without a phone, to be transient and/or to be living in temporary accommodation.

To provide an adequate picture of the extent of food insecurity in NSW, including an assessment of those groups most at risk, a more detailed investigation is required. The best method would be sentinel site studies in selected areas which have a high proportion of residents from subgroups of the population most at risk of food insecurity, including Aboriginals, people of low socio-economic status and the elderly. Some information about the elderly population will be provided by the Blue Mountains Eye Study, but this data will need appropriate analysis, dissemination and repeat measurements which are not part of the current plans for this survey. Thus, specific funding will be needed to adequately assess food insecurity in NSW.

2.3.3 Improved collation and dissemination of data on the initiation and duration of breastfeeding

Monitoring of trends in breastfeeding rates has been identified as a priority at the national level (CDHHCS 1993, Nutbeam et al 1993, Coles-Rutishauser and Lester 1995) and specific funds have recently been allocated to improve national breastfeeding monitoring as part of the Commonwealth's National Food and Nutrition Monitoring Project. At a minimum, a monitoring system should include the collection of data on full and partial breastfeeding at the time of hospital discharge, and at 3 and 6 months postpartum.

Monitoring of breastfeeding initiation rates and duration has been somewhat haphazard in most Australian States, including NSW. Data about patterns of pregnancy care services and pregnancy outcomes are collected for every birth in NSW via the NSW Midwives Data Collection. This data collection provides a precedent for the gathering and collation of hospital data about mothers and babies in NSW. The most consistent data about the duration of breastfeeding has been collected by the Victorian Department of Community Services and Health, compiled on an annual basis by staff at Maternal and Child Health Centres (Lester 1994).

Questions about breastfeeding were included in the 1989-90 National Health Survey (NHS), but these provided only limited data on the prevalence and duration of breastfeeding. More extensive data were collected in the 1995 NHS, but these will not provide estimates at the Area Health Service level, or for specific subgroups of the population such as Aboriginals, and the NHS occurs only at five yearly intervals. Recommendations have been made for inclusion of the 1995 NHS questions in the NSW Health Survey at three yearly intervals (refer to Chapter 4), but the inclusion of these questions is not guaranteed.

In NSW, better information on the initiation and duration of breastfeeding is needed to allow monitoring of progress towards national breastfeeding targets. The National Food and Nutrition Monitoring Project will assess the quality and relevance of data gathered in the most recent NHS and on that basis will seek consensus between States and Territories on the best questions for monitoring breastfeeding incidence and duration. NSW should participate actively in this process. In addition, NSW Health could investigate the feasibility of using current NSW collections which include breastfeeding data to improve information about the prevalence and duration of breastfeeding in NSW.

2.3.4 Development, piloting and validation of a feasible monitoring system for the assessment of the food supply in child care centres

A checklist was developed as part of the *Caring for Children* package (Bunney and Williams 1996) which can be applied to menus in child care centres to give guidance on the food provided. This checklist is widely used by nutritionists, health workers and child care centres in NSW, but it has several limitations:

- there is no standard method recommended for collection of data about the foods provided by the centres, i.e., the data to which the checklist is applied varies,
- more detailed instructions are required to ensure that the criteria are used consistently by different users - to prevent misclassification errors,
- there are no recommendations for standard collation of data from several centres, analysis and interpretation of data for reporting on progress at the Area or State level,
- there has been no validation of a standard method which includes instructions about data collection, application of the checklist, collation, analysis and interpretation of the data.

A project to design a feasible monitoring system for child care centres, including development of a comprehensive method for application of the *Caring for Children* criteria, and the pilot testing and validation of this method would ensure that currently available and widely used methods were standardised, and that the interpretation of the data they provided was clear and consistent.

2.3.5 Continued funding of the development of a method for assessing the adequacy of menus in NSW Healthcare Facilities

A Menu Assessment Tool for Healthcare Facilities was developed as the first stage in a NSW Health Department Project designed to answer the question, 'Are menus in NSW healthcare facilities meeting the nutritional requirements of the clients and patients?'

Stages of the project were development, testing, documentation and dissemination. The manual version of the assessment tool was disseminated in 1999 (NSW HD1999). The computerised version is on hold pending developments with CBORD conversion to Windows version, and assessment of demand for a computerised version. Funding of the next stages of this project will be required to ensure that the tool is integrated into a useable method, that the method is accepted and adopted by those who assess menus in healthcare facilities, and that the data are appropriately collated, analysed and disseminated.

References

- (ABS) Australian Bureau of Statistics. *How Australians measure up*. Catalogue no. 4359.0, 1998.
- Bower C, Raymond M, Lumley J and Bury G. Trends in neural tube defects 1980-1989. *Med J Aust* 1993; 158: 152-154.
- Bunney C and Williams L. *Caring for children. Food, nutrition and fun activities. 3rd Edition. A practical guide to meeting the food and nutrient needs of children in care*. NSW Health Department, 1996.
- (CDHHCS) Commonwealth Department of Health, Housing and Community Services. *Review of the implementation in Australia of the WHO international code of marketing of breast milk substitutes*. CDHHCS, Canberra, 1993.
- Coles-Rutishauser IHE and Lester IH. *Plan for a national food and nutrition monitoring program*. Food and Nutrition Monitoring Unit Working Paper 95.2. Australian Institute of Health and Welfare, November 1995.
- Flood V, Pang G, Webb K, Lazarus R and Baur L. *A validation study of self-reported weights and heights*. Department of Public Health and Community Medicine, University of Sydney, 1999.
- Hewitt M, Stickney B and Webb K. *Measuring key aspects of food habits and food intakes in population-based surveys in NSW: recommendations for short modules*. NSW Health Department, 1998.
- Hughes RG, Beck KM, Ambrosini GL and Marks GC. *The Queensland Food System: Description of Distribution, Marketing and Access. Final Report, Technical Report Series 97-01*. Nutrition Program, Australian Centre for International and Tropical Health and Nutrition, University of Queensland, 1997.
- Kaldor J. Public health epidemiology versus research epidemiology - Does it have to be one or the other? *Australian Epidemiologist* 1997; 4(1): 1-2.
- Lester IH. *Australia's food and nutrition*. AGPS, Canberra, 1994.
- Ma JJ and Truswell AS. Wernicke-Korsakoff syndrome in Sydney hospitals: before and after thiamine enrichment of flour. *Med J Aust* 1995; 163(10): 531-534.
- Nutbeam D, Wise M, Bauman A, Harris E and Leeder S. *Goals and targets for Australia's health in the year 2000 and beyond*. Report prepared for the Commonwealth Department of Health, Housing and Community Services. Department of Public Health, University of Sydney, 1993.
- NSW Department of Health (1999) Hospital Menu Assessment Tool: manual version. State Publication No (HP)990109

(NSW HD) *Recommendations for monitoring overweight and obesity in NSW*. NSW Health Department, 2000. ISBN: 0 7347 31434 State Health Publication No (HP) 00028

Stickney B, Webb KL, Campbell C and Moore AR. *Food and Nutrition in New South Wales: a catalogue of data*. NSW Health Department, 1994. ISBN 0 7310 3658 1. State Health Publication No. (HP) 94-066.

Waters AM. *Assessment of self-reported height and weight and their use in the determination of body mass index - Analysis of data from the 1989 Risk Factor Prevalence Survey*. Australian Institute of Health and Welfare, Canberra, 1993.

Watson MJ, McDougall MK and Coles-Rutishauser IHE. *Scanned retail sales data: an assessment of their potential for nutrition monitoring*. Australian Institute of Health and Welfare, September 1995.

Wood B. Evaluation of the mandatory thiamin enrichment of breadmaking flour in Australia, 1998.

Chapter 3: National networking to enhance NSW Food and Nutrition Monitoring

3.1 What is the most efficient method of national networking for food and nutrition monitoring?

3.1.1 Need for coordination

There are structural and organisational links between the national, State and local levels of the health system and each can support the others in the development and implementation of monitoring initiatives. To date, however, the cooperation between these three levels with regard to monitoring initiatives has been somewhat haphazard, resulting in duplication of effort, incompatibility of survey methods and vastly different ‘stages’ of development of monitoring systems in each of the States and Territories. Thus, there is a need for a forum to encourage discussion of food and nutrition monitoring issues which are relevant to all three levels of the health system. In particular, national networking between all of the States and Territories is required to ensure that State level monitoring is efficient, standardised and useful.

3.1.2 The National Public Health Partnership

The National Public Health Partnership (NPHP) has been set up to identify ways that national, State and local government responsibilities in public health services, policies, research etc can be made more consistent, coordinated and collaborative. The Partnership provides considerable capacity to manage issues such as strategy development and coordinated implementation of the National Food and Nutrition Policy and plans to provide a vehicle for coordination of health information (refer to the introduction of this document for more information on the NPHP).

3.1.3 SIGNAL

A national partnership of the key government stakeholders in food and nutrition has been established as the first step in the development of a National Public Health Nutrition Strategy (Catford et al 1997). This strategy will form the basis of the government health sector’s response to Phase 2 of the implementation of Australia’s Food and Nutrition Policy. The **Strategic Inter Governmental Nutrition Alliance (SIGNAL)**, consists of representatives from the Commonwealth Department of Health and Aged Care, State and Territory Health Departments, the Australian Institute of Health and Welfare (AIHW), the Australia and New Zealand Food Authority (ANZFA) and the National Health and Medical Research Council (NHMRC). SIGNAL reports to the NPHP (Catford et al 1997). SIGNAL will provide a useful forum for discussion of, advocacy for and development of the monitoring initiatives in Section 3.2. Use of this forum to discuss monitoring initiatives would also maximise the

contribution of the States and Territories to national monitoring enterprises, for instance, some of the work of this NSW Food and Nutrition Monitoring Project and the Queensland Health Monitoring Project would be useful in considering State-specific roles, responsibilities and comparability of methods.

3.1.4 The National Food and Nutrition Monitoring Project

The Commonwealth Department of Health and Aged Care has awarded a contract to Dr. Geoff Marks, Nutrition Program, University of Queensland, with involvement from Dr. Karen Webb, Department of Public Health and Community Medicine, University of Sydney for the development and management of Australia's food and nutrition monitoring and surveillance system. This is a major initiative that will form the basis of ongoing monitoring and surveillance activities in Australia. Major elements involve: analysis and reporting on existing national data sources, including the 1995 National Nutrition Survey; developing standardised approaches to the collection, analysis, and reporting of food and nutrition data; collation and analysis of data to address specific nutrition policy issues; and developing strategies for effective dissemination and application of information to decision making. The project will complement and benefit state-level efforts in nutrition monitoring, by working towards a consistent approach to nutrition information with consideration for various user needs.

This project will be a valuable partner in national networking of monitoring initiatives.

3.2 What are the main issues which require networking at the national level to enhance NSW Food and Nutrition Monitoring?

3.2.1 Better analysis and dissemination of national data collections

3.2.1.1 The National Nutrition Survey

The 1995 National Nutrition Survey (NNS) provides the best information available on the food and nutrient intakes of the Australian population. In order for this information to be useful for monitoring purposes, the survey must be repeated at regular intervals. It is possible that the NNS will be repeated, but federal commitment to such an endeavour is uncertain and is tied to future political and health system change. Nutrition representatives from the States and Territories of Australia therefore have a role in:

- advocating for future National Nutrition Surveys to occur,
- ensuring a forum and process for discussion of content, methodology, analysis, presentation and interpretation of data, and
- gaining commitment at the federal level for adequate resources to conduct data analysis and interpretation for States and Territories.

3.2.1.2 The Household Expenditure Survey

The ABS *Household Expenditure Survey (HES)* (ABS 6535.0) is conducted periodically and provides information on average weekly expenditure on broad level items (e.g., housing, food and beverages, transport etc), as well as medium and fine level items (over 100 food categories at the fine level). Differences in household expenditure between States, household income deciles, and rural and urban residence are also published. The main limitations of the data are that:

- the food categories cannot be disaggregated sufficiently to assess expenditure on more and less nutritious foods within groups, and
- the quantities of food purchased are not identified, so that differences in expenditure do not necessarily indicate differences in food consumption, and may reflect only the purchase of more or less expensive varieties of the same commodities.

If data about the quantities of food purchased (and more specific foods types), as well as the amount of money spent on food, were collected as part of the HES, this would provide information about differentials in household food acquisition and expenditure, and the price of foods, in rural and urban areas. Such changes in the HES methodology would be a cost-effective way of obtaining such information (Coles-Rutishauser and Lester 1995). Thus, there is a need for networking at the national and State level to advocate for improvements in the HES survey methodology to maximise the value of the data for nutrition monitoring purposes.

3.2.1.3 *The National Aboriginal and Torres Strait Islander Survey*

The 1994 *National Aboriginal and Torres Strait Islander Survey (NATSIS)* included short questions on intake of foods high in sugar and fat, food security and breastfeeding (ABS 4190.0 1994). However, there is uncertainty about the validity of the nutrition questions used.

Measured heights and weights were collected, but:

- the information about overweight and obesity presented in a major publication from this survey is difficult to interpret as adolescents and adults were grouped together using adult BMI categories (ABS 4190.0 1994), and
- there was no presentation of data about the weight status of children 5-12 years of age.

Liaison at the national and State levels is needed to discuss:

- methodology and analysis of future surveys involving Aboriginal and Torres Strait Islander people, and
- the possibility of further analysis and presentation of the data on overweight and obesity from the 1994 survey.

3.2.1.4 *Surveys of food prices*

The ABS publications *Consumer Price Index* (ABS 6401.0) and *Average Retail Prices of Selected Items, Eight Capital Cities* (ABS 6403.0) provide regular information about food prices for metropolitan areas in Australia. There is currently no coordinated and regular data collection about the price of foods in rural and remote areas of Australia, where transport and other costs have a greater impact on prices (Coles-Rutishauser and Lester 1995).

There is a need for State and national support for an expanded collection of retail price information outside metropolitan areas for foods of nutritional interest, including expansion of the sampling for the *Consumer Price Index* and *Average Retail Prices of Selected Items, Eight Capital Cities*.

3.2.1.5 *Surveys of food retail outlets and food service outlets*

Information about the number and turnover of selected food retail outlets, cafes and restaurants is available periodically from the ABS, the latest publication being *Retailing in Australia* (ABS 8613.0 1993). Information is not collected from institutional food service outlets such as child care centres, schools and hospitals, nor does it provide any indication as to the types of foods sold or the promotion and pricing of foods.

BIS Shrapnel produce regular summaries of food retail and food service data for Australia, aimed mainly at retailers, food service providers and food manufacturers.

The Queensland Food Supply Project was conducted in 1995-96 to 'describe the Queensland food system and identify the major factors that influence food availability, price, quality and variety, with particular emphasis on rural and remote areas' (Hughes et al 1997). This study provides a model for assessment of the food supply in NSW.

Retail brand scan data has the potential to provide timely information on trends in cost, availability, and sales of specific food products - data which are not available on a regular basis from other existing data sources currently used for nutrition monitoring.

Recommendations for NSW have been made in Chapter 2 regarding:

- replication of the Queensland Food Supply Survey in NSW,
- collation and analysis of State-wide brand scan data from retail outlets, and
- monitoring food services in NSW, including child care centres and healthcare facilities.

In addition to these recommendations, State and national liaison and discussion are needed in relation to:

- improving current data collections about food retail outlets,
- improvement, use and dissemination of current summaries of food retail and food service data, and
- the possibility of a national system for collation, analysis and interpretation of brand scan data.

3.2.2 Continued development of standard measures for indicators relevant to food and nutrition

3.2.2.1 General

Recommendations have been made in Chapter 4 for short modules, i.e., sets of questions or scales, for use in population-based surveys in NSW and NSW Health Areas. These are 'interim' recommendations, based on the best available information at the time of publication. They do not replace the need for continuing research and development, at the national level, regarding the best short modules for nutrition monitoring. Commissioning methods-oriented research of this nature is best done at the national level, to ensure comparability between national surveys and those conducted in different States and Territories of Australia.

3.2.2.2 Monitoring food habits and intakes in ethnic population groups

In Australia, to date, little work has been done to develop short sets of diet-related questions for use with ethnic populations. Thus, methods are not available to measure food habits of ethnic groups in population-based surveys (refer to Chapter 4 and Hewitt et al 1998). Some of the questions which have been recommended for inclusion in the NSW Health Survey, are likely to be as valid for the main ethnic subgroups as they are for the general population of NSW, for example, those relating to fruit, vegetable, bread and cereal intake. However, questions about food habits relating to fat intake may not be appropriate for use with ethnic groups, because main sources of fat in their diets differ considerably from the general Australian population.

Five of the main language groups represented in NSW are Arabic, Chinese, Italian, Greek and Vietnamese populations. Together, those who speak these languages at home account for approximately 10% of the NSW population (NSW HD 1996). Although the traditional diets of these ethnic groups have some nutritional advantages over the Australian way of eating, acculturation to Australian eating habits will tend to increase the risk of diet-related chronic diseases such as cardiovascular disease among ethnic groups.

There is a need for the development and validation of questions that reflect the food habits and nutrient intakes of groups such as the Chinese, Greek and Vietnamese populations. Data from previous studies of the dietary intake of these groups could be used to develop short sets of questions. For other groups, developmental work will need to be undertaken initially, in order to identify relevant food habits and appropriate questions (refer to Hewitt et al 1998 for more information).

The development and validation of short questionnaires for ethnic groups is a national, as well as a State priority and should be coordinated at the national level (Coles-Rutishauser and Lester 1995).

3.2.2.3 *Monitoring food habits and intakes in Aboriginal and Torres Strait Islander populations*

At present, the 1994 *National Aboriginal and Torres Strait Islander Survey* (ABS 4190.0 1994) provides the only questions for use in population-based surveys that specifically monitor the food habits and food intakes of Aboriginal and Torres Strait Islander populations. These questions aim to categorise the population broadly with respect to fat and sugar intake. Questions were also included in this survey on breastfeeding initiation and duration. How well these questions perform in different settings and geographic locations is not known (refer to Chapter 4 and Hewitt et al 1998).

There is a need for further development and validation of questions for use in population-based surveys that assess breastfeeding initiation and duration, as well as the food habits and intakes, of Aboriginal and Torres Strait Islander populations. The differences in dietary intake between sub-groups of this population (e.g., Torres Strait Islanders compared with mainland Aboriginal people, those living in the Top End compared with those living in the southern Australian states, and rural compared with urban Aboriginal populations) need to be considered in the development of such questions.

As with questions for ethnic populations, the development and validation of questions for use with indigenous populations is relevant at the national, as well as State level, and should therefore be coordinated nationally (Coles-Rutishauser and Lester 1995).

3.2.3 *Developmental work for monitoring overweight and obesity*

The AIHW and the NHMRC are currently in the process of developing standards and methods for monitoring overweight and obesity as part of the implementation phase of the documents - *Outline of a national monitoring system for cardiovascular disease* (Bennett et al 1995) and *Acting on Australia's Weight - A strategic plan for the prevention of overweight and obesity* (NHMRC 1997). Recommendations made in Chapter 6 of this document may be of interest to these groups. The NSW Health Department should maintain involvement with the national planning process to ensure compatibility between State and national initiatives.

Priorities should include the assessment of trends in weight status, particularly among vulnerable groups. The target groups identified at the national level do not include people from non-English speaking backgrounds, people of low socio-economic status or older people. The NSW Health Department should therefore advocate for the monitoring of overweight and obesity in these at-risk population sub-groups at the national level.

3.2.4 *Assessment of nutrition-related biochemical indices*

The AIHW, in their *Outline of a national monitoring system for cardiovascular disease* (Bennett et al 1995) recommended that the National Nutrition Survey (NNS) be converted into a continuous data collection which includes blood sampling. The National Heart Foundation (NHF) Risk Factor Prevalence Surveys of 1980, 1983 and 1989 provide the only

national data collections of blood samples in recent years. There are no plans for the NHF Risk Factor Prevalence Surveys to be repeated and the 1995 National Nutrition Survey did not include blood measurements. Given the lack of current information about the cholesterol levels of the Australian population, the AIHW plans to recommend that a survey be conducted which includes the collection of blood samples as well as some physical measurements. Although blood cholesterol is of particular interest, such a survey has the potential to provide information for monitoring purposes on other nutrition-related biochemical indices such as iron and folate status. These are of particular concern among specific subgroups of the population and because of current advertising and/or fortification programs.

The NSW Health Department should advocate for this survey to be conducted and for the inclusion of analyses for measurements of interest, such as folate levels, haemoglobin concentrations, iron stores, total cholesterol, high density lipoprotein cholesterol (HDL), and low density lipoprotein cholesterol (LDL). Other physical measurements collected as part of this survey are likely to include blood pressure and measured weight and height which will contribute monitoring data for NSW.

State and Territory assistance with the conduct of such a survey may increase the likelihood of the survey occurring. Assistance might involve, for example, the inclusion of data collection into regional staff responsibilities and/or the ‘piggy-backing’ of blood collection onto existing State-wide surveys.

The repeated collection of blood samples on a representative sample of the Australian population, including appropriate analysis and dissemination of the results, is essential for a comprehensive food and nutrition monitoring system at both the national and State levels. Discussion at the national level, involving representatives from all States and Territories, is needed to ensure that such data collection occurs and that it provides the most appropriate data in relation to current nutrition priorities.

3.3 Other issues which require networking at the national level to enhance NSW Food and Nutrition Monitoring

Other issues currently on the monitoring agenda at the national level, and which NSW should support, are the **assessment of the effectiveness of folate fortification of foods** and the **development of new food safety reporting mechanisms**.

Monitoring of sodium intakes is another identified priority. Given that most of the sodium in the diets of Australians comes from processed foods, the best way to monitor the **sodium intake of the population** is by tracking the sodium content of processed foods and their relative market share. Nutrient composition data are compiled and updated at the national level and thus, advocacy for improved tracking of the sodium content of processed foods should be directed towards the Commonwealth. Monitoring the relative market share of processed foods high in sodium could be accomplished by using brand scan data (refer to Section 3.2.1.5).

References

- (ABS) Australian Bureau of Statistics. *Household Expenditure Survey, Australia. Detailed Expenditure Items*. Catalogue no. 6535.0.
- (ABS) Australian Bureau of Statistics. *Consumer Price Index*. Catalogue no. 6401.0.
- (ABS) Australian Bureau of Statistics. *Average Retail Prices of Selected Items, Eight Capital Cities*. Catalogue no. 6403.0.
- (ABS) Australian Bureau of Statistics. *Retailing in Australia*. Catalogue no. 8613.0, 1993.
- (ABS) Australian Bureau of Statistics. *National Aboriginal and Torres Strait Islander Survey 1994. Detailed Findings*. Catalogue no. 4190.0, 1994.
- Bennett S, Dobson AJ and Magnus P. *Outline of a national monitoring system for cardiovascular disease*. (Cardiovascular Disease Series; no. 4). Australian Institute of Health and Welfare, Canberra, 1995.
- Catford J, Sindall C, Clark R and Stafford H. *Australia's Food and Nutrition Policy Phase 2. Building a National Public Health Nutrition Strategy. A framework for Government Health Authorities*. Health Strategies Deakin, July 1997.
- Coles-Rutishauser IHE and Lester IH. *Plan for a national food and nutrition monitoring program*. Food and Nutrition Monitoring Unit Working Paper No. 95.2, Australian Institute of Health and Welfare, Canberra, 1995.
- Hewitt M, Stickney B and Webb K. *Measuring key aspects of food habits and food intakes in population-based surveys in NSW: recommendations for short modules*. NSW Health Department, 1998.
- Hughes RG, Beck KM, Ambrosini GL and Marks GC. *The Queensland Food System: Description of Distribution, Marketing and Access. Final Report, Technical Report Series 97-01*. Nutrition Program, Australian Centre for International and Tropical Health and Nutrition, University of Queensland, 1997.
- (NHMRC) National Health and Medical Research Council. *Acting on Australia's Weight - A strategic plan for the prevention of overweight and obesity*. NHMRC, 1997.
- (NSW HD) NSW Health Department. *The Health of the People of New South Wales. Report of the Chief Health Officer*. Public Health Division, NSW Health Department, 1996.

Chapter 4: Short modules for measuring key aspects of food habits and food intakes in population-based surveys in NSW

4.1 Why make recommendations for short modules for monitoring nutrition issues in population-based surveys?

The need has been widely recognised for standard short methods to assess food intake and food habits of various population groups in Australia. *A guide to instruments for monitoring food intake, food habits and dietary change* was developed by the Food and Nutrition Monitoring Unit of the AIHW to encourage debate on the topic (Coles-Rutishauser 1996). This document presents instruments used for measuring particular indicators. It also summarises the issues that need to be addressed in the development of standard questions. The document does not provide recommendations as to which instruments should be used for each indicator. The report states that “information about the repeatability and validity of most instruments in current use is lacking” and recommendations can not be made confidently until the results of current validation studies are available.

The NSW Health Department and NSW Health Areas need to monitor progress toward the achievement of nutrition goals and targets. Population-based surveys are a cost-effective and timely way of monitoring selected food habits and food intakes relevant to current policy initiatives. It is unlikely that any ‘single topic’ surveys will be conducted on a regular basis in NSW in the near future. It is therefore important to include nutrition questions in population surveys of risk factors, fitness and other health issues which sample representative groups of the NSW population. These types of surveys are conducted regularly but when nutrition topics are included, there is little consistency in the questions used. This limits the comparability of data (Stickney et al 1994, Coles-Rutishauser 1996). The use of standard instruments by those conducting population-based surveys will help ensure comparability of results from State, regional and local surveys and will assist in monitoring progress over time toward nutrition goals and targets.

4.2 Why is it important to monitor key aspects of food habits and food intakes in NSW

- To provide information on the prevalence of, and trends in, selected food habits and food intakes;
- To provide information for policy and program development;
- To assess the impact of intervention ;
- To monitor progress towards the achievement of nutrition goals and targets;
- To provide information relevant to Area Performance Contracts.

4.3 Modules for use in the NSW Health Survey and other surveys of the general adult population in NSW

Short questionnaires are not intended to replace periodic population dietary surveys, but they are useful for tracking selected food habits and food intakes. Recommendations for diet-related questions for use in population-based surveys in NSW were made as part of the work of the NSW Food and Nutrition Monitoring Project. Recommended questions, the rationale for their selection and relevant indicators are described in detail in a separate report - *Measuring key aspects of food habits and food intakes in population-based surveys in NSW: recommendations for short modules* (Hewitt et al 1998).

The detailed report (Hewitt et al 1998) was designed for:

- The **NSW Health Department** including the Sun Exposure, Nutrition and Physical Activity Policy Unit; Health Promotion Branch; Research and Clinical Policy Branch and the Epidemiology and Surveillance Branch,
- **Area Health Personnel** including Health Promotion and Public Health Unit personnel, Community Nutritionists, and Health Outcomes Councils, and
- **Public Health and Nutrition researchers** and anyone else who needs to use nutrition data.

Recommendations were made, in the first instance, regarding questions for use in the NSW Health Survey. The questions would also be appropriate for use in other surveys in NSW.

The recommendations included:

- short modules for inclusion in the annual ‘core’ component of the NSW Health Survey
 - weight status
 - core food group intake (fruit, vegetables, breads and cereals)
 - fat intake
- supplementary modules for periodic inclusion in future NSW surveys
 - breastfeeding and other infant feeding practices;
 - food security, barriers to dietary change and meal patterns;
 - food habits related to intake of saturated fat, calcium and iron;
 - core food group intake as assessed in the 1996 Tasmanian Food and Nutrition Study;

4.4 Nutrition issues and methods for use in short modules

4.4.1 Children and adolescents

Children’s attention to what they have consumed, their ability to recall what they have eaten and to average dietary intake to report ‘usual’ consumption, is different to that of adults. Thus, questions and methods developed for adults are not directly relevant to children and adolescents.

Observation methods to obtain accurate dietary assessments of children avoid errors of recall (Simons-Morton and Baranowski 1991), but these methods are expensive and time-consuming and are not appropriate for large-scale studies. Some form of self-report is therefore required to assess children's diets. Self-reported information necessarily reflects cognitive processes which differ at different stages of childhood and adolescence (Baranowski and Domel 1994).

Age and respondent capability are important reasons for designing different dietary interview methods (Frank 1994). There is a rapid increase in the capability of children to respond to eating behaviour inquiries beginning at 7-8 years of age. Frank (1977, 1991) proposes that by 10-12 years of age, children can self-report their own diets. This capability plateaus throughout adolescence into adulthood until about age 60-70 years.

The consensus is that children's ability to accurately describe foods they consume is improved by using prompts (such as visual aids), probes and adequate instruction (Baranowski et al 1986, Jenner et al 1989, Karvetti and Knutts 1992, Persson and Carlgren 1984). Telephone surveys are limiting since visual prompts are not a possibility. However, probing questions, such as questions about food eaten around certain daily events, may be a useful alternative.

The *Youth Risk Behaviour Survey* (YRBS), a national survey conducted among high school students (aged 15-18 years) in the USA in 1993, included a short module on weight status and food habits (Kann et al 1995). The survey used a self-administered questionnaire conducted in the classroom during a regular class period. These questions are not recommended for use in Australia because the types of foods included and/or the wording of the questions are not appropriate for Australian diets.

There has been limited validation of food and nutrition-related **questionnaires** and no validation of **short sets of diet questions** for use with children and adolescents in population-based surveys in Australia. Recommendations for the **development** of short questions for use with Australian children are made in Chapter 2 of this report (refer to Section 2.2.3).

4.4.2 Ethnic population groups

In Australia, to date, little work has been done to develop short sets of diet-related questions for use with ethnic populations. Thus, methods are failing to assess food and nutrient issues of current public health interest among ethnic groups. Some questions recommended for inclusion in the NSW Health Survey are likely to be as valid for the main ethnic subgroups as they are for the general population of NSW, for example, those relating to fruit, vegetable, bread and cereal intake. However, questions about food habits relating to fat intake may not be appropriate for use with ethnic groups, because main sources of fat in their diets differ considerably from the general Australian population.

There is a need for the development and validation of questions that reflect the food habits and nutrient intakes of groups such as Chinese, Greek and Vietnamese populations. Data from previous studies of the dietary intake of these groups could be used to develop short sets of questions (Hsu-Hage et al 1995, Ireland et al 1994, Mitchell 1995). For other groups, such as the Arabic and Italian populations, developmental work will need to be undertaken to identify relevant food habits and appropriate questions.

The development and validation of short sets of questions for ethnic groups is a national as well as a State priority and recommendations have been made for national networking of this issue in Chapter 3 of this report (refer to Section 3.2.2.2).

4.4.3 Aboriginal and Torres Strait Islander populations

At present, the 1994 *National Aboriginal and Torres Strait Islander Survey* (NATSIS) (ABS 1994) provides the only questions for use in population-based surveys that specifically monitor the food habits and intakes of Aboriginal and Torres Strait Islander populations. These questions aim to rank the population with respect to fat and sugar intake. Questions were also included in this survey on breastfeeding initiation and duration and food security.

The validity of the fat and sugar index (FSI) questionnaire was assessed in a pilot study in the Katherine region of the Northern Territory prior to the NATSI survey (Paterson 1994) but it is not known how well these questions perform in different settings and geographic locations. Until the validity and reliability of these questions has been assessed, they are not recommended for use in other surveys.

Poor housing and sanitation in many Australian Aboriginal communities highlights the importance of the promotion of breastfeeding with this population. Thus, there is a need for further development and validation of questions for use in population-based surveys that assess breastfeeding initiation and duration, as well as the food habits and intakes of Aboriginal and Torres Strait Islander populations. The differences in dietary intake between subgroups of this population (e.g., Torres Strait Islanders compared with mainland Aboriginal people, those living in the Top End compared with those living in the southern Australian states, and rural compared with urban populations) need to be considered in the development of dietary questions.

As with questions for ethnic populations, the development and validation of questions for use with Aboriginal groups should be a national, as well as a State priority. Recommendations have been made for national networking of this issue in Chapter 3 of this report (refer to Section 3.2.2.3).

4.5 Analysis and dissemination of the data

The analysis and dissemination of limited food and nutrition data from the NSW Health Survey is carried out by the Epidemiology and Surveillance Branch of the NSW Health Department as part of their reporting on key survey results.

The following are some possibilities for further analysis and dissemination of the food and nutrition information from the NSW Health Survey:

- a) a short report containing more detailed food and nutrition information, such as Area-specific analyses, interpretation of findings, and graphical presentation of data, similar to

- the style used in *Food and nutrition in New South Wales - a catalogue of data* (Stickney et al 1994). This report should be widely promoted through the NSW Nutrition Network, Area Health Promotion Units, Public Health Units and Area Executives,
- b) the most important findings should be included in the Chief Health Officer's Report of the NSW Health Department,
 - c) key points could be included in the NSW Health Department *Public Health Bulletin*, and any newsletters and/or circulars which are distributed to Area Executives.

Detailed suggestions for analysis and interpretation of the data can be found in *Measuring key aspects of food habits and food intakes in population-based surveys in NSW: recommendations for short modules* (Hewitt et al 1998).

References

- (ABS) Australian Bureau of Statistics. *1994 National Aboriginal and Torres Strait Islander Survey Questionnaire*. ABS, 1994.
- Baranowski T, Dworkin R, Henske J, Clearman D, Dunn J, Nader P. The accuracy of children's self-reports of diet: family health project. *J Am Diet Assoc*. 1986; 86: 1381-5.
- Baranowski T and Domel S. A cognitive model of children's reporting of food intake. *Am J Clin Nutr* 1994; 59(S): 212S-7S.
- Coles-Rutishauser IHE. *A guide to instruments for monitoring food intake, food habits and dietary change*. Food and Nutrition Monitoring Unit Working Paper No. 96.2, Australian Institute of Health and Welfare, Canberra, 1996.
- Frank G. Taking a bite out of eating behaviour: food records and food recalls of children. *J Sch Health* 1991; 61: 198-200.
- Frank G. Environmental influences on methods used to collect dietary data from children. *Am J Clin Nutr*. 1994; 59 (S): 207S-11S.
- Frank G, Berenson G, Schilling P, Moore M. Adapting the 24-hour dietary recall for epidemiologic studies of school children. *J Am Diet Assoc* 1977; 71: 26-31.
- Hewitt M, Stickney B and Webb K. *Measuring key aspects of food habits and food intakes in population-based surveys in NSW: recommendations for short modules*. NSW Health Department, 1998.
- Hsu-Hage B, Ibiebele T and Wahlqvist M. Food intakes of Adult Melbourne Chinese. *AJPH*, 1995; 19 (6): 623-628.
- Ireland P, Jolley D, Giles G, O'Dea K, Powles J, Rutishauser I, Wahlqvist ML and Williams J. Development of the Melbourne FFQ: a food frequency questionnaire for use in an Australian prospective study involving an ethnically diverse cohort. *Asia Pacific J Clin Nutr*, 1994; 3: 19-31.
- Jenner D, Neylon K, Croft S, Beilin L, Vandongen R. A comparison of methods of dietary assessment in Australian children aged 11-12 years. *Eur J Clin Nutr* 1989; 43: 663-73.
- Kann L, Warren C, Harris W, Collins J, Douglas K, Collins M, Williams B, Ross J, Kolbe L. Youth Risk Behaviour Surveillance - United States, 1993. *Morbidity Mortality Weekly Report*. March 24 1995; 44 (SS-1): 1-53.
- Karvetti R, Knuts L. Validity of the estimated food diary: comparison of 2-day recorded and observed food and nutrient intakes. *J Am Diet Assoc*. 1992; 92: 580-3.

Mitchell J. *Heart Disease Risk Factors in the Vietnamese Community of South Western Sydney*. South Western Sydney Area Health Service. Health Promotion - A unit of the Division of Public Health. June 1995.

Paterson J. *Validation Study of a Simplified Fat and Sugar Index Questionnaire against a 24-hour Dietary Recall Method*. A report to the Australian Bureau of Statistics by the Nutrition Programme. University of Queensland. 1994. Unpublished report.

Persson L, Carlgen G. Measuring children's diets: evaluation of dietary assessment techniques in infancy and childhood. *Int J Epidemiol*. 1984; 4: 506-17.

Simons-Morton B, Baranowski T. Observation methods in the assessment of children's dietary practices. *J Sch Health* 1991; 61: 204-7.

Stickney B, Webb KL, Campbell C and Moore AR. *Food and Nutrition in New South Wales - a catalogue of data*. NSW Health Department, 1994. ISBN 0 7310 3658 1. State Health Publication No. (HP) 94-066.

Chapter 5: Information required from the National Nutrition Survey

5.1 Introduction

5.1.1 Why is the National Nutrition Survey so important?

The 1995 National Nutrition Survey (NNS) provides the first nationally representative data on the food and nutrient intakes of Australians since the 1983 National Dietary Survey of Adults and the 1985 National Dietary Survey of Schoolchildren (aged 10-15 years). Data were collected in the NNS on individuals of all ages from two years and upwards, thus making it the most comprehensive nutrition survey of the Australian population ever undertaken. The NNS supplies the first data on food and nutrient intakes for many population subgroups including young children, young adults, older people and rural Australians. It also provides trend data for comparison with the 1983 and 1985 National Dietary Surveys.

The NNS was conducted in conjunction with the 1995 National Health Survey (NHS), thus making it possible to link the NNS data with NHS data on socio-economic status, self-reported health status and use of health services. The NNS was conducted by the Australian Bureau of Statistics (ABS) for the Commonwealth Department of Health and Family Services (DHFS) and was the first dietary survey to be conducted under the statistics legislation. The NNS survey sample was selected from households responding to the NHS. The NNS sample was approximately 13,800 across Australia, thus permitting national estimates of dietary patterns by age (i.e., for each year of age) and sex.

The NNS included several short questions relating to current food and nutrition policy objectives as well as 24-hour recall interview and food frequency questionnaire data. Such information will enable an assessment of the validity of these short questions compared with more comprehensive dietary assessment methods. Thus, until we have a nationally agreed set of short questions, they provide a good option for those seeking questions for statewide or local population surveys as there is potential for validation and they provide information comparable to the NNS (as discussed in Chapter 4).

5.1.2 What data were collected in the NNS?

The data collected in the NNS are summarised in the following three tables.

Table 5.1: Summary of dietary and related data collected in the NNS

Information	Age
Individual Food Intake Questionnaire (IFIQ = 24 hour recall, see Table 5.2 for details)	2 years
Intake on recall day not considered usual	2 years
Reason recall day not considered usual	2 years
Previous day vitamin and mineral supplement use	2 years
Previous day drinking water quantity	2 years
Usual way of eating	2 years
Usual daily number of eating occasions	2 years
Frequency of breakfast consumption	2 years
Frequency of salt use in cooking	2 years
Frequency of salt use at table	2 years
Weight change over previous year	16 years
Desire for specific dietary changes	16 years
Barriers to dietary changes	16 years
Dietary change due to mouth, throat conditions	16 years
Food security	16 years
Frequency of food consumption over past 12 months (118 item food frequency questionnaire)	12 years

Table 5.2: Food and nutrition information collected in, and calculated from, the Individual Food Intake Questionnaire (IFIQ) of the NNS

Information^a
1. The consumption of separate food and beverage items, served individually, as components of mixed dishes and together with other foods as meals.
2. Food preparation methods including the type and amount of fat added in cooking and at the table, and whether salt was used in cooking.
3. The type of food, whether fresh, frozen, canned, dried etc.
4. The sources of the food such as from shops, restaurants, hotels, vending machines, home grown etc.
5. The time the item was eaten and whether it was consumed at home or ever in the home.
6. Exact portion size information.
7. The nutrient intake of all foods and beverages consumed.

^a **All respondents aged 2 years**

Table 5.3: Physical measurements collected in the NNS^a

Information	Age
Blood pressure	16 years
Height	2 years
Weight	2 years
Waist circumference	2 years
Hip circumference	2 years

^a **Not collected from pregnant respondents**

5.1.3 NNS publications

There are three reports which present results from the 1995 National Nutrition Survey:

1. *National Nutrition Survey: Selected Highlights, Australia, 1995* (ABS and DHFS 4802.0 1997) - which presents selected summary statistics covering eating patterns, foods consumed, nutrient intake and anthropometric indicators for adults and children in Australia.
2. *National Nutrition Survey: Nutrient Intakes and Physical Measurements, Australia, 1995* (ABS and DHFS 4805.0 1998) - which presents detailed information on energy, water and nutrient intakes; and physical measurements such as weight and height (and weight in relation to height), waist and hip circumference (and waist to hip ratio), and blood pressure.
3. *National Nutrition Survey: Foods Eaten, Australia, 1995* (ABS and DHFS 4804.0 1999) - which includes mean and median daily intake and percent consuming for 2 and 3 digit food categories (see explanation below).

These three publications contain only limited State information.

The NNS Confidentialised Unit Record Files (CURF) are available for interested parties to perform their own analyses on the NNS data sets.

The food grouping system used to code the food data includes three levels:

1. the two-digit level, e.g., 19 = milk; milk products and dishes
2. the three-digit level, e.g., 191 = dairy milk
3. the four-digit level, e.g., 1912 = milk, fluid, regular whole, full-fat

The 'Nutrient Intakes and Physical Measurements' publication includes information on the following nutrients:

- energy;
- moisture;
- macronutrients - protein, fat (total, saturated, monounsaturated and polyunsaturated), cholesterol, carbohydrate (total, starch and sugars), dietary fibre and alcohol;
- vitamins - vitamin A (retinol equivalents, preformed and provitamin), thiamin, riboflavin, niacin equivalents, folate, vitamin C; and
- minerals - calcium, phosphorus, magnesium, iron, zinc and potassium.

5.1.4 Why obtain NSW-specific information?

As noted above, the 1995 NNS provides the first representative data about food and nutrient intakes of Australians since the 1983 and 1985 National Dietary Surveys (NDSs), the only representative data for several important population subgroups (including nutritionally vulnerable subgroups) and trend data for comparison with the 1983 and 1985 National Dietary Surveys. The NNS NSW sample is sufficiently large for some analyses by age and sex, and by metropolitan/rural areas. The analysis and presentation of a comprehensive set of State-specific data would:

- provide a good snapshot of the nutrition situation in NSW compared with other States,
- provide trend data for comparison with the previous NDSs,
- provide new baseline data for population subgroups of interest, and
- answer questions posed by practitioners and policy-makers in NSW.

There are many users of nutrition information in NSW, including community nutritionists; State and Area health promotion, public health and research/evaluation personnel; Area Chief Executive Officers; nutrition and public health academics; non-government organisations and the food industry. Most of these groups have some interest in the State-based information about food and nutrient intakes available from the NNS, particularly in relation to current initiatives to increase the consumption of fruits, vegetables, breads and cereals, and to decrease fat intake. Other issues covered by the NNS were also identified, by the public health workers consulted as part of the NSW Nutrition Monitoring Project, as important issues for Statewide monitoring. These included weight status, dietary change patterns, meal patterns and food security (refer to Chapter 1 for more detail on these consultations).

5.1.5 NSW analyses

In addition to the limited State data presented in the three major NNS publications, the then Public Health Food and Nutrition Unit (PHFNU) of the Commonwealth Department of Health and Family Services (DHFS) negotiated for the Australian Bureau of Statistics (ABS), who were responsible for the analysis and presentation of NNS data for national purposes, to produce a set of State tabulations of the NNS data. These tabulations included detailed State data about particular issues not included in the national publications.

NSW, Queensland and Victoria provided substantial funding for collection and analysis of data from the NNS and have sufficient sample sizes to provide some State figures by age group (e.g., 19-24 years) and sex. These States were therefore contacted to provide their priorities for the State tabulations. The NSW Health Department asked the NSW Food and Nutrition Monitoring Project to negotiate with the DHFS and the ABS in this regard. The State tabulations were only provided to States as paper copies of data tables. No official reports with summaries or interpretation of these State level data are planned.

5.2 Recommendations

5.2.1 The process of identifying NSW priorities for NNS analysis

The NSW Food and Nutrition Monitoring Project was thus given the task of identifying NSW priorities (from the NNS data available) for information to be included in the State tabulations produced by the ABS. The identification of these 'NSW priorities' included an assessment of the need for information in relation to:

- NSW goals and targets for coronary heart disease (NSW CORONARY HEART DISEASE EWG 1995),
- current strategic directions for improving nutrition in NSW (Martin and Macoun 1996, NSW HD 1997), and
- consultations conducted for the NSW Nutrition Monitoring Project (as described in Chapter 1).

Priority nutrition issues and those which are addressed by the data available from the NNS are shown in Table 5.4.

Table 5.4: NSW priorities for food and nutrition information

Source	Priority nutrition issues ^a
<p><i>Coronary Heart Disease - NSW goals and targets and strategies for health gain</i> (NSW CORONARY HEART DISEASE EWG 1995)</p>	<ul style="list-style-type: none"> • <i>Increase intake of fruit, vegetables, breads and cereals</i> • <i>Reduce the total and saturated fat content of the diet of NSW residents (not including infants and children)</i> • <i>Reduce dietary sodium intake</i> • <i>Increase the proportion of adults with an acceptable body weight</i> • <i>Reduce the prevalence of obesity among adults</i>
<p><i>Food and Nutrition - Directions for NSW 1996-2000</i> (Martin and Macoun 1996)</p>	<ul style="list-style-type: none"> • <i>Promote demand for breads, cereals, vegetables and fruits</i> • <i>Increase the proportion of NSW schools, childcare centres, hospitals and Meals on Wheels services which adopt food and nutrition policies consistent with national dietary guidelines</i> • <i>Develop community-based food and nutrition programs with Aboriginal and Torres Strait Islander peoples</i> • <i>Develop an ongoing nutrition monitoring and surveillance system for NSW to:</i> <ul style="list-style-type: none"> - <i>monitor demand for healthy food choices, food supply in institutions, nutrition status, food borne illness, and</i> - <i>provide data to support planning and evaluation of State-wide nutrition programs</i> • <i>Promote the safety of the food supply</i>
Source	Priority nutrition issues ^a
<p><i>Caring for Health. Implementation Statement: Putting policy into action</i> (NSW HD 1997)</p>	<ul style="list-style-type: none"> • <i>Increased per capita consumption of bread, cereal, fruit and vegetables</i> • <i>Increased availability of nutritious food in institutional settings</i> • <i>Improved nutrition, awareness, knowledge and eating behaviour amongst Aboriginal people</i> • <i>Improved food habits relating to fat intake</i>
<p>NSW Food and Nutrition Monitoring Project 1997: Consultations</p>	<p>Nutrition issues considered important enough to warrant the collection of routine data included (in order of priority):</p> <ul style="list-style-type: none"> • <i>Fat consumption habits</i> • <i>Weight status of adults</i> • <i>Dietary change patterns</i> • <i>Food service in institutions</i> • <i>Food retailing</i> • <i>Intake of core food groups</i> • <i>Meal patterns</i>

Source	Priority nutrition issues ^a
	<ul style="list-style-type: none"> • Growth and <i>weight status of children</i> • <i>Fat intake</i> • Alcohol consumption habits • Breastfeeding • <i>Food security</i> • Food service in commercial settings

^a Issues which are addressed by the data available from the NNS are shaded and italicized

5.2.2 Liaison with the Commonwealth Department of Health and Family Services and the ABS regarding NSW priorities for NNS analysis

A set of dummy tables was prepared which outlined the NNS information most relevant to NSW priorities (refer to Appendix 3). These tables included topics such as:

- weight status,
- detailed information on food intake (including core food group intake and intake of selected foods of particular interest),
- nutrient intakes (including contribution of nutrients to total energy intake),
- the proportion of the population meeting recommendations for nutrient intakes,
- the proportion of the population with particular dietary habits, and
- the use of vitamin and mineral supplements.

In general, data were requested by sex, by age categories and for metropolitan and rural areas (with the proviso that the statisticians at the ABS would not produce data for the age categories as requested for any cell sizes which were too small). Statistical differences by sex, age and metropolitan/rural were also requested. The 23 tables presented were further prioritised by indicating the 12 most important tables for NSW purposes (identified by an asterisk in Appendix 3).

Data for weight status of adults were chosen for comparability to the most recent National Heart Foundation Risk Factor Prevalence Study (1989) and for children to enable comparison with recommendations (refer to Chapter 6 and NSW HD 2000).

To obtain food intake data which were comparable to the National Dietary Surveys of Adults (1983) and Schoolchildren (1995) and recommendations for core food group intake (NHMRC 1995):

- mean and % consuming were included (medians were also included because population distributions of food intakes tend to be skewed, and so the median is a better estimate of central tendency than the mean),
- ‘per capita’ results (i.e., denominator for calculation of intakes = total number of respondents) were requested in preference to ‘per consumer’ results (i.e., denominator = total number of respondents who consumed that food), and
- the same core food group categories were chosen as in recommendations for core food group intake (NHMRC 1995). At the time the tables in Appendix 3 were prepared,

The Australian Guide to Healthy Eating (Smith et al 1998) had not been published, so *The Core Food Groups* (NHMRC 1995) were used.

Both grams/person/day and serves/person/day were included for core food group intake. Grams/person/day allows easy comparison with recommendations and increases the likelihood of detecting trends in intake. Serves/person/day allows easy interpretation of data for presentation in summary documents.

Food intakes comparing higher and lower-fibre varieties of breads and breakfast cereals and higher and lower fat-milk and spreads were chosen because:

- the NNS is the only recent survey which provides detailed data on food groups, and
- analysis of the national surveys to date does not allow easy interpretation of such data.

All data were to be weighted to the age and sex profile of the NSW population.

The ABS provided 22 'tables in common' for all States and offered 8 additional tables for each of the key States. Together with the three national publications, the State tabulations provide NSW with approximately one third of the data requested. Thus, there is a substantial amount of useful data available regarding NSW priorities which has not been analysed.

5.2.3 Needs for NHS data analysis for NSW

Data relating to breastfeeding and infant feeding, and the use of vitamin and mineral supplements, were collected as part of the 1995 National Health Survey. Depending on the extent to which the ABS disaggregate State data about these issues in their reporting of results from the survey, it may be worthwhile for the NSW Health Department to consider commissioning further analysis in this regard.

5.3 Analysis and dissemination of the data

5.3.1 Who will be responsible for analysing and preparing NSW data?

A considerable amount of data analysis and presentation design is needed for NSW to make optimal use of the data from the NNS.

Several options are available for these tasks:

1. The job could be 'outsourced' to a research organisation in NSW which has experience in analysis and presentation of data from dietary surveys, e.g., the Centre for Clinical Epidemiology and Biostatistics, University of Newcastle or the Department of Public Health and Community Medicine, University of Sydney.
2. It may be possible to negotiate with the National Food and Nutrition Monitoring Project, who have further NNS analysis as part of their work program, to undertake some limited analyses for NSW.

3. Another option is for the NSW Health Department to pay the ABS to produce additional tables. The ABS has indicated its willingness to carry out additional data analysis. However, this option would be relatively expensive and there may be delays given the current work program related to the NNS.
4. One of the recommendations made in this document for supporting future NSW monitoring initiatives is for the NSW Health Department to establish a partnership with a group with expertise in nutritional epidemiology and nutrition monitoring (refer to Section 2.1.2). Such a group could undertake the additional NNS analysis required.

Options 2 and 3 would require planning expertise from groups such as those described in options 1 and 4, to produce specifications for tables and to interpret and prepare reports on receipt of the tables.

Option 4, and to a lesser extent option 1, would build the capacity of the NSW Health Service to process large data sets such as the NNS to meet their own information needs.

5.3.2 How can the information best be presented and disseminated?

The State tabulations produced by the ABS are quite detailed and lack a summary and interpretation. Any analysis which the NSW Health Department commissions, beyond these ABS State tabulations, should similarly be presented in detailed tabular format. In addition, a more user-friendly mode of presentation will be required for all NSW NNS data. Following are some suggestions for making the NSW NNS data accessible to a wide audience, thus ensuring optimal use for policy and program development and evaluation:

1. A short report could be produced which contains key information from the ABS State tabulations and any further analysis beyond the ABS State tabulations, including graphical presentation and interpretation of data, similar to the style used in *Food and nutrition in New South Wales - a catalogue of data* (Stickney et al 1994). This report could be widely promoted through the NSW Nutrition Network, Area Health Promotion Units, Public Health Units and Area Executives.
2. The most important findings should be included in the *Chief Health Officer's Report* of the NSW Health Department.
3. Key points could be included in the NSW Health Department's *Public Health Bulletin*, and any newsletters and/or circulars which are distributed to Area Executives.

References

(ABS and DHFS) Australian Bureau of Statistics and Department of Health and Family Services. *National Nutrition Survey: Selected Highlights, Australia, 1995*. Catalogue no. 4802.0, 1997.

(ABS and DHFS) Australian Bureau of Statistics and Department of Health and Family Services. *National Nutrition Survey: Nutrient Intakes and Physical Measurements, Australia, 1995*. Catalogue no. 4805.0, 1998.

(ABS and DHFS) Australian Bureau of Statistics and Department of Health and Family Services. *National Nutrition Survey: Foods Eaten, Australia, 1995*. Catalogue no. 4804.0, 1999.

Martin S and Macoun E. *Food and Nutrition - Directions for NSW 1996-2000*. Health Promotion Branch, NSW Health Department, 1996. ISBN 0 7310 925X. State Health Publication No: (HP) 96-0116.

(NHMRC) National Health and Medical Research Council. *The Core Food Groups - The Scientific Basis for Developing Nutrition Education Tools*. AGPS, Canberra, 1995.

(NSW CORONARY HEART DISEASE EWG) NSW Coronary Heart Disease Expert Working Group. *Coronary Heart Disease - NSW goals and targets and strategies for health gain*. NSW Health Department, 1995. ISBN 0 7310 0731 X. State Health Publication No: (PHD) 950110.

(NSW HD) NSW Health Department. *Caring for Health. Implementation Statement: Putting policy into action*. NSW Health Department, 1997.

(NSW HD) *Recommendations for monitoring overweight and obesity in NSW*. NSW Health Department, 2000. ISBN: 0 7347 31434 State Health Publication No (HP) 00028

Smith A, Kellett E and Schmerlaib Y. *The Australian Guide to Healthy Eating*. Commonwealth of Australia, 1998.

Stickney B, Webb KL, Campbell C and Moore AR. *Food and Nutrition in New South Wales - a catalogue of data*. NSW Health Department, 1994. ISBN 0 7310 3658 1. State Health Publication No. (HP) 94-066.

Chapter 6: Recommendations for monitoring overweight and obesity in NSW

6.1 Why is it important to monitor overweight and obesity?

- To provide information on prevalence and trends.
- To provide information for policy makers and field workers, who when consulted, identified overweight and obesity as a priority issue for nutrition monitoring.
- To assess progress towards State cardiovascular disease goals and targets and Area Performance Contracts.
- To contribute to the overall information required for national monitoring of this significant problem.

6.2 Recommendations for monitoring overweight and obesity in NSW

Recommendations for standard methods for collecting, measuring and analysing data about overweight and obesity in NSW were part of the work of the NSW Food and Nutrition Monitoring Project. These recommendations and their rationale are described in detail in a separate report - *Recommendations for monitoring overweight and obesity in NSW* (NSW HD 2000). Main references used in the development of this report are included at the end of this chapter.

This report includes a review of the literature, current views about measurement, and **recommendations** regarding:

- what target groups to monitor,
- what and how to measure overweight and obesity,
- standards for classifying people as overweight or obese,
- how to sample a population to give a representative picture, and
- options for obtaining NSW information.

The report (NSW HD 2000) has been designed for :

- The **NSW Health Department** - including the Sun Exposure, Nutrition and Physical Activity Policy Unit; Health Promotion Branch; Research and Clinical Policy Branch and the Epidemiology and Surveillance Branch,
- **NSW Area Health personnel** - including Health Promotion and Public Health Unit personnel, Community Nutritionists, and Health Outcomes Councils, and
- **Others** interested in monitoring overweight and obesity, for example, the NHMRC and AIHW who are considering standardised methods for monitoring weight status and weight-related beliefs and practices.

6.3 Summary of recommendations

The rationale for the following recommendations is given in the full report on *Recommendations for monitoring overweight and obesity in NSW* (NSW HD 2000). These recommendations will need to be reviewed in light of recommendations from the Expert Working Group for Anthropometric Measurement as part of the National Obesity Strategy.

6.3.1 Recommended target groups

- men aged 25 - 40 years
- menopausal women
- Aboriginals
- children and adolescents
- older people
- people from low socio-economic groups
- people from non-English speaking backgrounds

6.3.2 Recommended measures

- weight
- height
- abdominal circumference - in the adult population
- socio-demographic information
- attitudes and practices related to weight management

6.3.3 Recommended indices derived from measurements

- Body Mass Index (BMI) - compare to cut-points for children and adults
- z-scores - compare to reference population for young children

6.3.4 How to measure overweight and obesity

The recommended methods for measuring weight, height and abdominal circumference are described in the protocols in (NSW HD 2000), adapted from the World Health Organisation (WHO) recommended protocols.

6.3.5 Recommended questions to obtain self-reported data

1. How tall are you without shoes?
_____ centimetres

or
_____ feet _____ inches
2. How much do you weigh without clothes or shoes?
_____ kilograms

or
_____ stones _____ pounds

6.3.6 The validation of self-reported data

The validity of self-reported data needs to be assessed at regular intervals by measuring weights and heights. Those who are overweight are more likely to under-report their weight and over-report their height. It also appears likely that the way people self-report their heights and weights may vary over time. The validation study of the NSW Health Survey data on heights and weights provides information on the accuracy of self-reported data using telephone methodology (refer to Section 2.2.1).

6.3.7 Self-reported data in children and adolescents

Until more information is available about the validity of self-reported heights and weights in this group, it is recommended that surveys of children and adolescents should **not** rely on self-reported weight and height as a means to determine weight status.

6.3.8 Measuring heights and weights in children and adolescents

Priority should be given to surveying weights and heights of children and adolescents on a routine basis, and disseminating results and planning actions to address problems identified.

6.3.9 Measured or self-reported abdominal circumferences

Until more information is available about the validity of self-reported abdominal measurements, only measured or self-measured (with clear instructions and tape provided) abdominal measurements should be conducted on the adult population.

6.3.10 Standards for classifying individuals and populations as overweight and obese in the general population

Commonly used categories for comparisons with past surveys are grouped as: ‘underweight’, ‘acceptable weight’, ‘overweight’ and ‘obese’.

Underweight	BMI < 20
Acceptable weight	BMI ≥ 20 <25
Overweight	BMI ≥ 25 <30
Obese	BMI > 30

To maintain consistency with the National Nutrition Survey, a further refined breakdown of categories is recommended (using a modified version of the latest recommendations by WHO).

Underweight BMI <18.5	(WHO grade 1, 2 and 3 thinness)
Normal weight	(report the two categories of cut-points separately to allow comparison with past data sets)
	18.5 ≥ BMI <20 (WHO normal range 18.5-24.99)
	20 ≥ BMI <25
Overweight	25 ≥ BMI <30 (WHO grade 1 overweight)
Obese	BMI > 30 (WHO grade 2 overweight 30.0-39.99, WHO grade 3 overweight 40.00)

Example of interpretation of BMI category: 25 BMI < 30 = 25.00 - 29.99.

Combine the ‘thin’ categories and 18.5 - < 20 of the normal category to provide an ‘underweight’ category for comparisons with past surveys.

6.3.11 Weight categories for use with the Aboriginal population

Until more information is available about the distribution of fat and its relationship with BMI in the Aboriginal population, the BMI categories recommended for the general adult population should be used for interpreting information about the Aboriginal population. Acknowledging the limitations of this weight classification, this information still provides a means of tracking change over time.

6.3.12 Weight categories for people from different ethnic backgrounds

There are no definitive BMI categories for use with people from different ethnic populations (though these are currently being researched). For the present, the BMI categories recommended for the general adult population should be used for people from different ethnic populations. Acknowledging the limitations of the weight classification for ethnic groups, the

information still provides a means of tracking change over time. If different BMI categories are eventually recommended, they are likely to vary between these groups.

6.3.13 Standards for classifying weights of children 0-8 years

Use the z-score definitions for classifying the weight status of children aged 0-8 years. Compare these to the National Center for Health Statistics/WHO reference population until improved international reference population data exists. The z-scores are:

For children of low weight:

- low weight for height: < -2 z-scores of the sex specific reference value for age
- (Represents degree of thinness or wasting)
- low weight for age : < -2 z-scores of the sex specific reference value for age
- (Represents degree of lightness or underweight)

For children overweight:

- high weight for age: $> +2$ z-scores of the sex specific reference value for age
- (Represents degree of heaviness or overweight)
- high weight for height: $> +2$ z-scores of the sex specific reference value for age
- (Represents degree of heaviness or overweight)

Based on the normal distribution of a population, the expected values for each of these -2 and $+2$ z-scores is 2.3%. If the z-score exceeds this amount then there is cause for concern.

6.3.14 Classifying weights of children 9-15 years

Reference data recommended for use:

1. Australian data derived from the Australian Health and Fitness Survey (Lazarus et al 1995). This provides a reference data set from an Australian population of children.
2. US reference data (National Health and Nutrition Examination Survey-I) (Must et al 1991) for comparisons to the National Nutrition Survey and international data.

‘At risk of overweight’: 85th percentile BMI and < 95 th percentile BMI (when BMI > 30) for age and sex of reference population (see above).

Overweight: 95th percentile for age and sex or BMI > 30 .

To indicate **thinness:** < 5 th percentile BMI.

6.3.15 Classifying weights of 16-24 year olds

Given the similarity of the US cut points in this age range to the adult recommended cut points, and the common use of 18-24 year old age group using adult cut points, it is recommended that weight classification for this age group be consistent with the general **adult weight classification**.

This recommendation should be reviewed as more population-based survey data becomes available, especially for the 16-17 year old age group.

6.3.16 Possible options to obtain weight status information about the NSW general population

- National Nutrition Survey
- New survey that measures weights and heights
- Self-reported data from the NSW Health Survey
- Measure weights and heights from a sub sample of the NSW Health Survey
- Women's Health Study - longitudinal survey, 1996- 2016
- Blue Mountain's Eye Study

6.3.17 Possible options to obtain weight status information about NSW children

- Include measured weights and heights in the Drug and Alcohol Survey
- Repeat the School Survey of Fitness and Physical Activity
- Regularly collect weights and heights of all schoolchildren to monitor overweight, obesity and growth

6.3.18 Presentation and analysis of data

Descriptive statistics:

For population / sample data report the following:

- mean
- median
- standard deviation
- standard error of mean
- 95% confidence intervals
- centile distribution

In adults:

- Report the above information by sex and 5-year age groups (where the sample permits).
- Report proportion of population classified as:
Underweight
Acceptable weight
Overweight
Obese

In adolescents:

- Report the above descriptive statistics by sex and year of age for BMI
- Report frequency of adolescents with BMI > 30.
- Report frequency of those considered at risk of overweight (85th percentile) relative to the reference data.
- Report frequency of those considered overweight (95th percentile) relative to the reference data.
- Report frequency of thinness (<5th percentile) relative to the reference data.

References

- (ABS) Australian Bureau of Statistics. NATSIS: Health of indigenous Australians. Cat. No. 4395.0 1994.
- (ABS) Australian Bureau of Statistics. 1989-90 National Health Survey: user's guide. Cat no. 4363.0 1995.
- (ABS NHS) Australian Bureau of Statistics. 1995 National Health Survey. First Results. Catalogue number 4392.0 1996.
- (AHFS) Australian Health and Fitness Survey 1985. The Australian Council for Health, Physical Education and Recreation Inc (ACHPER). 1987.
- Alexander H, Dugdale A. Which waist-hip ratio? *Med J Aust.* 1990; 153: 367.
- Armitage P, Berry G. *Statistical methods in medical research*, 2nd Ed. Oxford, Blackwell, 1987.
- Ashwell M, Cole T, Dixon A. Ratio of waist circumference to height is strong predictor of intra-abdominal fat. *BMJ.* 31 August 1996; 313: 559-560.
- Baghurst KI, Record SJ, Baghurst PA, Syrette JA et al. Socio-demographic determinants in Australia of the intake of food and nutrients implicated in cancer aetiology. *Med J Aust.* 1990; 153: 444-452.
- Bennett S, Magnus P. Trends in cardiovascular risk factors in Australia. Results from the National Heart Foundation's Risk Factor Prevalence Study, 1980-1989. *Med J Aust.* 1994; 161, 9: 519-527.
- Bennett S. Cardiovascular risk factors in Australia: trends in socioeconomic inequalities. *J of Epidemiology and Commun Health.* 1995; 49: 363- 372.
- Bennett, S. Inequalities in risk factors and cardiovascular mortality among Australia's immigrants. *Aust J Pub Health.* 1993; 17, 3: 251 - 261.
- Boyle CA, Dobson AJ *Cardiovascular disease risk factors in New South Wales: a summary of available data in 1991.* Newcastle: Department of Statistics, University of Newcastle, 1992.
- Coles-Rutishauser I. Body mass and body composition in Australian Aboriginal women. In: Rae C, Green J, eds. *Nutrition and health in the tropics.* Proceedings of the Menzies Symposium. Darwin: Menzies School of Health Research, 1987: 226-232. In Rutishauser I, *Body composition of Aboriginal Australians.*
- Cox B, Whichelow M. Ratio of waist circumference to height is better predictor of death than body mass index. *BMJ.* 7 December 1996; 313: 1487-88.
- Crawford D, Owen N. The behavioural epidemiology of weight control. *Aust J Pub Health.* 1994; 18, 2 143-8.
- Crawford D. Recent trends in obesity - is it time for action? *Aust J Nutr & Diet.* 1995; 52, 3: 162.
- de Ridder C, de Boer R, Seidell J, Nieuwenhoff C, Jeneson J, Bakker C, Zonderland M, Erich W. Body fat distribution in pubertal girls quantified by magnetic resonance imaging. *Int J Obesity* 1992; 16: 443-449.

Donovan RJ, Holman CDJ, Corti B, Jalleh G. Face-to-face household interviews verses telephone interviews for health surveys. *Aust and NZ J Pub Health*. 1997; 21, 2: 134-140.

English RM, Bennett S. Overweight and obesity in the Australian community. *J Food and Nutr*. 1985; 42 (1): 2-12.

Fiscella K, Franks P. Poverty or income inequality as predictor of mortality: longitudinal cohort study. *BMJ*. 1997; 314: 1724 - 1727.

Goran M, Kaskoun M and Shuman W. Intr-abdominal adipose tissue in young children. *Int J Obes*. 1995; 19: 279-283.

Guest CS, O'Dea K, Hopper JL, Larkins RG. Hyperinsulaemia and obesity in Aborigines of south-eastern Australia, with comparisons from rural and urban Europid populations. *Diab Res Clin Prac* . 1993; 20: 155-164.

Harvey P. Increasing prevalence of overweight in Australian children. *ANF National Newsletter* (and personal communication), January, 1997.

Harvey P, Marks G, Heywood P. Variations in estimates of overweight and obesity in Australia. *MJA*. 1991; 155: 724.

Hawe P, Degeling D, Hall J. *Evaluating Health Promotion*. MacLennan and Petty Pty Ltd, 1990.

Himes J and Dietz W. Guidelines for overweight in adolescent preventive services: recommendations from an expert committee. *Am J Clin Nutr* 1994; 59: 307-16.

Lazarus R, Baur L, Webb K, Blyth F, Gliksman M. Recommended body mass index cutoff values for overweight screening programmes in Australian children and adolescents: Comparisons with North American values. *J Paediatr Child Health*. 1995; 31: 143-147.

Lazarus R, Baur L, Webb K, Blyth F. Body mass index in screening for adiposity in children and adolescents: systematic evaluation using receiver operating characteristic curves. *Am J Clin Nutr*. 1996; 63: 500-6.

Lean M, Han T, Morrison C. Waist circumference as a measure for indicating need for weight management. *BMJ*. 15 July 1995; 311: 158-161.

Lohmann TG, Roche AF, Martorell R. Eds. *Anthropometric standardization reference manual*. Champaign, IL, Human Kinetics Books. 1988.

(LSRO, FASEB) Life Sciences Research Office, Federation of American Societies for Experimental Biology. *Third Report on Nutrition Monitoring in the United States, Volume 1*. 1995; US Gov Printing Office: Washington.

Mathers C. *Health differentials among adult Australians aged 25-64 years*. AIHW: Health Monitoring Series, No.1 Canberra: AGPS, 1994.

Must A, Dallal G, Dietz W. Reference data for obesity: 85th and 95th percentiles of body mass index (wt/ht²) and triceps skinfold thickness. *Am J Clin Nutr*. 1991a; 53: 839-46.

Must A, Dallal G, Dietz W. Reference data for obesity: 85th and 95th percentiles of body mass index - a correction. *Am J Clin Nutr*. 1991b; 54: 773 (rapid communication).

(NHMRC) National Health and Medical Research Council. *Acting on Australia's Weight: a strategy for the prevention of overweight and obesity*. 1997.

(NSW CHDEWG) NSW Coronary Heart Disease Expert Working Group. *Coronary Heart Disease NSW Goals and Targets and Strategies for Health Gain*. NSW Health Department, 1995.

NSW Health Department. *NSW Health Promotion Survey 1994*. 1995.

(NSW HD) NSW Health Department. *NSW Health Promotion Survey 1994, Technical Report*. 1995.

(NSW HD) *Recommendations for monitoring overweight and obesity in NSW*. NSW Health Department, 2000. ISBN: 0 7347 31434 State Health Publication No (HP) 00028

Paxton S and Sculthorpe A, Gibbons K. Weight-loss strategies and beliefs in high and low socioeconomic areas of Melbourne. *Aust J of Pub Health*. 1994; 18 (4): 412-417.

Pelletier D. *From nutrition information to action: some recent improvements in theory and practical implications for community-based nutrition monitoring*. Workshop held in Ithaca, New York, 1994.

Quine S, Lancaster P. Indicators of social class - relationship between prestige of occupation and suburb of residence. *Community Health Studies*. 1989; 13 (4): 510-517.

(RFPSMC) Risk Factor Prevalence Study Management Committee. *Risk Factor Prevalence Study: Survey No. 3 1989*. Canberra: National Heart Foundation and Australian Institute of Health, 1990.

Rowland M. Self-reported weight and height *Am J Clin Nutr* 1990; 52: 1125-33.

Rutishauser I. Body composition in Aboriginal Australians. *Asia Pacific J Clin Nutr*. 1995; 4: 73-76.

Sangi H, Mueller W, Harrist R, Rodriguez B, Grunbaum J, Labarthe D. Is body fat distribution associated with cardiovascular risk factors in childhood? *Ann Human Biol*. 1992; 19, 6: 559-578.

Simons LA, Simons J, Magnus P, Bennett SA. Education level and coronary heart risk factors in Australians. *Med J Aust*. 1986; 145: 446-450.

Smith W, Mitchell P and Attebo K, Leeder S. Selection bias from sampling frames: telephone directory and electoral roll compared to door-to-door population census: results from the Blue Mountains Eye Study. *Aust and NZ J Pub Health*. 1997; 21, 2: 127-133.

Smith W, Chey T, Jalaludin B, Salkeld G, Capon A Increasing response rates in telephone surveys: a randomised trial. *J Public Health Med*. 1995; 17:17-22.

Swinburn B, Craig P, Daniel R, Dent D, Strauss B. Body composition differences between Polynesians and Caucasians assessed by bioelectrical impedance. *Int J Obes* 1996; 20: 889-894.

Tienboon P, Wahlquist M, Rutishauser I. Self reported weight and height in adolescents and their parents. *J Adol Health* 1992; 13: 528-532.

Valdez R; Seidell J, Ahn Y, Weiss K. A new index of abdominal obesity as an indicator of risk for cardiovascular disease. A cross-population study. *Int J Obesity*. 1993; 17: 77-82.

Van der Kooy K, Leenan R, Seidell J, Deurenberg P, Hautvast G. Effect of weight cycle on visceral fat accumulation. *Am J Clin Nutr.* 1993; 58: 853-7.

Wang J, Thornton J, Russell M, Burastero S, Heymsfield S, Pierson R. Asians have lower body mass index (BMI) but higher percent body fat than do whites: comparisons of anthropometric measurements. *Am J Clin Nutr.* 1994; 60: 23-8.

Waters AM. *Assessment of self-reported height and weight and their use in the determination of body mass index.* Australian Institute of Health and Welfare, Canberra. 1993.

Weaver T, Kushi L, McGovern P, Potter J, Ricj S, King R, Whitbecj J, Greensatin J, Sellers T. Validation study of self-reported measures of fat distribution. *Int J Obes.* 1996; 20: 644-650.

(WHO) World Health Organisation Expert Committee. *Physical status: the use and interpretation of anthropometry.* WHO Technical Report Series 854. Geneva: WHO. 1995.

Wiggers JH and Sanson-Fisher RW, Halpin SJ. Prevalence and frequency of health service use: associations with occupational prestige and educational attainment. *Aust J Pub Health.* 1995; 19(5): 512-519.

Wilkinson R. Commentary: Income inequality summarises the health burden of individual relative deprivation. *BMJ.* 1997; 314: 1727-1728.

Williamson N, Jorm L, Cardonna M, Chey T. *Blacktown health survey, 1993.* Sydney: Western Sydney Area Health Service, 1994. ISBN 1 875 398 84 8.

Appendix 1: Consultations with users of nutrition data in NSW

Introduction

The relevance and perceived importance of particular aspects of food and nutrition information in public health practice is a consideration when designing a food and nutrition monitoring system. In the United States, experience with state-level and community-based nutrition monitoring has shown that often, data are accumulated, but that improved access to data does not necessarily lead to the use of the information to improve decision-making of nutrition professionals (Pelletier et al 1994). The reasons for this are many but include a lack of relevance or perceived importance of the information to the priorities of practitioners, lack of interpretation and effective dissemination of the data, and limited knowledge and skills among practitioners about how to use data appropriately and effectively for the various purposes for which they are required. Hawe (1995) also argues that some types of information are more change-focussed and suggest intervention points, whereas other data simply re-state the problem.

Who was consulted ?

We sought the views of potential users of food and nutrition information in NSW who are involved, to varying extents, in planning and implementing preventive nutrition programs and services. The types and numbers of personnel consulted were:

- Managers of selected divisions within the central office of the NSW Health Dept.(n=16);
- Health Promotion Directors (n=15);
- Community Nutritionists(n=15);
- Research and Evaluation Co-ordinators of health promotion (n=13);
- Nutrition academics (n=5);
- Nutrition-related Non-government organisations (n=6);
- Dietitians Association of Australia (NSW Executive)(n=3).

Objectives of consultations

To identify, among selected public health professionals (users of nutrition data):

- their 'wish lists' for food and nutrition data;
- the importance they perceive in obtaining regular information about selected nutrition issues;
- how they use food and nutrition information; and
- how users of nutrition information would prefer to have data presented and supplied to them.

It was also hoped that the consultations would serve the additional purpose of allowing potential beneficiaries of the monitoring system to become involved in decisions about how the system would work, and thus be more likely to use and contribute to it, when developed.

The perceived importance by public health personnel of a nutrition issue is affected by many factors, such as:

- roles, responsibilities and current work priorities;
- knowledge about the absolute and relative public health significance of particular issues; and
- the availability of data about its prevalence and distribution.

Thus, the perceived ‘importance’ of an issue was not the only criteria for inclusion of an issue in the monitoring system. Other factors were also considered such as salience of a nutrition issue to current and likely future initiatives, and expert opinion about prevalent or severe nutrition-related conditions that have received little attention. The literature about nutrition issues of public health significance has been reviewed extensively in association with preparing the NSW Catalogue of Food and Nutrition (Stickney et al 1994) and this contributed to the final selection of issues to be monitored. The National Food and Nutrition Monitoring Plan (Coles-Rutishauser and Lester 1995) was also reviewed to guide priority-setting for NSW.

Methods

Consultations were conducted with users of food and nutrition information throughout NSW. Three methods were used to obtain information, suited to the interest and availability of those consulted.

1. A **short mail-out self-completed survey** was the most commonly used method of consultation. The mailed questionnaire was preceded by a phone call to explain the purpose of the consultation, and obtain consent to participate. Each mail-out survey included:

- an introductory letter;
- instructions for completing the questionnaire/table;
- a table that highlighted a range of food and nutrition issues and asked respondents to rank order them by importance for nutrition monitoring;
- a ‘uses’ table which described ways nutrition information may be used (for prompting);
- a set of cards with potential nutrition issues marked, to be sorted by respondents;
- a table with issues listed and a column to indicate what data is currently collected at Area/District level (or in the case of State respondents, consultants were asked if they knew of any other sources of data); and
- a table listing ways food and nutrition information could be supplied and disseminated (to be ticked by respondents).

2. **Group consultations** were conducted with the Research and Evaluation Coordinators, the Nutrition Network group, and the Health Promotion Directors. These group consultations were similar to the mail-out survey, with the exception that the rank ordering occurred in small groups, with an opportunity for discussion and clarification and group ranking (in addition to individual ranking);
3. **Interviews** were conducted with State Health Department representatives. These structured interviews followed a similar format to the mail-out survey. The questions included:
 - what five issues were considered the most important to monitor;
 - how nutrition information could be used, including planning and policy-development;
 - any other nutrition issues which could be considered for monitoring; and
 - how nutrition information could best be disseminated among NSW Health staff.

The survey was modified to its final form after pilot testing and consultation with Alan Sheill, Health Economist at the University of Sydney.

Respondents were asked to consider a list of important nutrition issues for monitoring in NSW, to rank order them in terms of their importance, and to add any additional issues they considered to be important to monitor. The list of issues was generated from those identified in the *Plan for a National Food and Nutrition Monitoring Program* (Coles-Rutishauser and Lester 1995), the *Outline of a National Monitoring system for Cardiovascular Disease* (Bennett et al 1995) and *Food and Nutrition: Directions for NSW 1996-2000* (Martin and Macoun 1996) (refer to Table 1.1 in the Introduction to this report).

A list of potential uses of nutrition information was also supplied, adapted from the work of Pelletier (1995).

Results

Ninety-three public health professionals were contacted to participate in the consultations, either in groups, as interviews or in the mail-out survey. Of these, seventy-three completed at least one of the methods of consultation, a **response rate of 78%**. There was a higher response rate among interviewees and group participants than for the mail-out survey, for example, the community nutritionists participating in the nutrition network meeting had a response rate of 94% compared with 38% for nutrition academics.

Table A1.1 shows the most common nutrition issues perceived as important to monitor by all groups of consultees combined. The rank order of issues varied according to types of public health professionals consulted. For example, nutritionists who were most familiar with the current emphasis on consumption of basic food groups, and with growth issues among disadvantaged groups, rated these issues higher than non-nutritionists. Health promotion personnel, and State health managers, who are currently asked to account for progress in

reducing fat intake to achieve improvements in heart disease mortality rates, ranked “fat consumption habits” higher than did other groups.

Several additional issues were nominated. The most common of these were the prevalence of eating disorders/disordered body image, and prevalence of limited access to nutritious food choices in food outlets. Many others were mentioned, each by only one or a small number of consultees. These were often highly specific and reflected the interests of individual workers, such as zinc intake in pregnancy and childhood, use of functional foods, and vitamin D status of the elderly. Others recognised the lack of information currently available as a basis for planning advice and interventions such as prevalence of use of medicinal herbs, garlic, and functional foods; cooking skills; prevalence of use of special diets; water consumption; views about government involvement in improving food and nutrition; quality of foods available; nutrition knowledge of various groups; and the ‘side effects’ of following the dietary guidelines. Others expressed a need for better information about population intakes and nutritional status related to: fibre, sodium, and energy intakes, and the vitamin status of various groups.

Broadly, four main uses of nutrition information were nominated:

1. to identify factors affecting nutrition problems;
2. to initiate and sustain political support for nutrition action;
3. to assess the impact of the total effort to improve nutrition; and
4. to assess the effectiveness of nutrition intervention strategies.

These uses of nutrition information were consistent across all categories of the consultees. Academics also considered an important use to be nutrition information to improve methods for future monitoring activities. The use of information about population nutritional status for education of the public and public health students was also identified as an important application.

For the most part, data about the important nutrition issues identified above, were also perceived as useful for at least one of the functions also described above. However, some individuals nominated particular data they would like, but did not rank it as one of the most important nutrition issues required for monitoring. For example, many coordinators of research and evaluation for Area Health Promotion Units said they would make use of information about alcohol consumption, but did not rate it as a priority issue for nutrition monitoring. A number of such additional specific pieces of information were nominated by consultees, and are included in Table A1.1 showing the fewest votes.

The preferred modes for presentation and dissemination of nutrition data were consistent between groups of information users: The main methods nominated were:

summary report;
fact sheets;
computer database; and
internet-based summary

Conclusions

The most important issues identified for nutrition monitoring were relatively similar across different groups of potential users of nutrition information. Common uses of nutrition information were those related to obtaining political support for acting on an issue, and to assist in planning and evaluating interventions and the ‘total effort’ devoted to tackling a nutrition problem.

The information from these consultations has been used in the development of Table 1.1 in the Introduction of this report. This table lists the issues and potential topics for indicator development and outlines which sections of the document address the monitoring required for these issues. These consultations served the important need of identifying which issues were perceived as most important and which information would actually be used for the development of policies and programs.

Table A1.1 Most important nutrition issues for a monitoring system

Important issues	Number of people identified issue as most important
1. Fat consumption habits	29
2. Weight status of adults	28
3. Dietary change patterns	27
4. Food service in institutions	25
5. Food retailing	24
6. Intake of core food groups	22
7. Meal patterns	19
8. Growth and weight status of children	15
9. Fat intake	11
10. Alcohol consumption habits	8
11. Breastfeeding	6
12. Food security	2
13. Food service in commercial settings	2

References

- Bennett S, Dobson AJ and Magnus P. *Outline of a national monitoring system for cardiovascular disease*. Cardiovascular Disease Series; no. 4. Canberra: Australian Institute of Health and Welfare, 1995.
- Coles-Rutishauser I and Lester IH. *Plan for a national food and nutrition monitoring program*. Food and Nutrition Monitoring Unit, Working paper No. 95.2. Canberra: Australian Institute of Health and Welfare, 1996.
- Coles-Rutishauser I. *A guide to instruments for monitoring food intake, food habits and dietary change*. Food and Nutrition Monitoring Unit Working paper No. 92.2. Canberra: Australian Institute of Health and Welfare, 1995.
- Commonwealth Department of Health. *Community Surveys - a practical guide*. Canberra: AGPS, 1985.
- Martin S and Macoun E. *Food and Nutrition: Directions for NSW 1996-2000*. Health Promotion Branch, NSW Health Dept, 1996. ISBN 07310925X. State Health Publication No: (HP)96-0116.
- Pelletier DL. *From nutrition information to action: some recent improvements in theory and practical implication for community based nutrition monitoring, Lessons learned and new directions in community-based nutrition monitoring*, New York, 1996.
- Pelletier DL, Kraak V, and Ferris-Morris M. *The CBNM Problem Solving Model: an approach for improving nutrition-relevant decision-making in the community*. New York: 1994.
- Pelletier DL. The role of information in enhancing child growth and improved nutrition: a synthesis. In: Pinstrup-Anderson P, Pelletier D and Alderman H. *Child Growth and Nutrition in Developing Countries*. Ithaca: Cornell University Press, 1995.
- Stickney EK, Webb KL, Campbell C, and Moore AR. *Food and Nutrition in New South Wales: a catalogue of data*. NSW Health Dept, 1994. ISBN 07310 36581. State Health Publication No. (HP) 94-066.

Appendix 2: Some current examples of initiatives that will benefit from a planned approach to nutrition monitoring in NSW

National initiatives

Implementation of the National Food and Nutrition Policy

The first implementation phase of the *National Food and Nutrition Policy* (CDHHCS 1992) included the 1995 National Nutrition Survey and the establishment of the Food and Nutrition Monitoring Unit of the Australian Institute of Health and Welfare (disbanded in 1996), both of which have featured highly in the development of *Recommendations for Food and Nutrition Monitoring in NSW*.

ARTD Management and Research Consultants have been contracted by the Commonwealth Department of Health and Aged Care to develop a strategic framework for the next phase of implementation of the Policy, within the context of the National Public Health Partnership (see below). The first stage involved consultation and development of a national framework document which will be provided to the National Public Health Partnership group for consideration and possible incorporation into the work program of the Partnership, forming the basis of a nationally coordinated approach to food and nutrition for the next ten years.

The Strategic Inter Governmental Nutrition Alliance of the National Public Health Partnership

The National Public Health Partnership (NPHP) provides a framework for building a cooperative approach to protecting and improving the health of Australians. The principal members of the Partnership are the Commonwealth Department of Health and Aged Care, the primary health agencies of each of the States and Territories, the National Health and Medical Research Council and the Australian Institute of Health and Welfare. Other stakeholders such as local government, non-government organisations, health industry organisations and consumer organisations may be involved via working groups that are being established.

The Partnership has been identified as a mechanism to ensure that government responsibilities in public health are consistent, coordinated and collaborative. The Partnership provides considerable capacity to manage issues such as strategy development and coordinated implementation of the National Food and Nutrition Policy. Several generic areas of activity which will form the basis of the NPHP work program have been proposed:

- Public Health Research and Development
- *Public Health Information Development*
- *Public Health Planning and Decision Making*
- *Public Health Strategies Coordination*
- Public Health Practice Improvement
- Public Health Workforce Development
- Public Health Regulation and Legislation

Of these areas which require attention in order to build the capacity for implementing the Food and Nutrition Policy, three are particularly relevant to nutrition monitoring (highlighted above).

The establishment of a national partnership of the key government stakeholders in food and nutrition has been recommended as the first step in the development of a National Public Health Nutrition Strategy (Catford et al 1997). This strategy would form the basis of the government health sector's response to Phase 2 of the implementation of Australia's Food and Nutrition Policy. The **Strategic Inter Governmental Nutrition Alliance (SIGNAL)**, consists of representatives from the Commonwealth Department of Health and Aged Care (DHAC), State and Territory Health Departments, the Australian Institute of Health and Welfare (AIHW), the Australia and New Zealand Food Authority (ANZFA) and the National Health and Medical Research Council (NHMRC). SIGNAL reports to the NPHP (Catford et al 1997).

Catford et al (1997) recommend that the National Public Health Nutrition Strategy should be focused on a small number of key priority issues, including '**information development**, e.g., enhancing monitoring and surveillance systems, consistent collection of behavioural and environmental data at State/Territory level, ensuring comparability across national data sets.' It is envisaged that SIGNAL will work with relevant agencies and groups to review and refine long range nutrition targets, and that SIGNAL and/or DHAC would be responsible for the development of a management information system for the National Public Health Nutrition Strategy.

Recommendations for Food and Nutrition Monitoring in NSW contains recommendations for 'National networking to enhance NSW Food and Nutrition Monitoring' (refer to Chapter 3). SIGNAL will provide a useful forum for discussion of, advocacy for and development of the initiatives included in Chapter 3.

The National Food and Nutrition Monitoring Project

The *Plan for a national food and nutrition monitoring program* (Coles-Rutishauser and Lester 1995) was developed as part of the work of the Food and Nutrition Monitoring Unit of

the Australian Institute of Health and Welfare (AIHW). This document provides a national context for food and nutrition monitoring at the State level and was used extensively in the development of issues and indicators for *Recommendations for Food and Nutrition Monitoring in NSW*.

Some of the initiatives which have been described in the National Plan require support and cooperation from the States and Territories and/or will provide specific support for food and nutrition monitoring at the State level. The most important of these from a NSW perspective are included in Chapter 3 of *Recommendations for Food and Nutrition Monitoring in NSW*.

Other documents produced by the AIHW Food and Nutrition Monitoring Unit, such as *A guide to instruments for monitoring food intake, food habits and dietary change* (Coles-Rutishauser 1996) and *Scanned retail sales data: an assessment of their potential for nutrition monitoring* (Watson et al 1995) have also been used in the development of *Recommendations for Food and Nutrition Monitoring in NSW*.

The Commonwealth Department of Health and Aged Care has awarded a contract to Dr. Geoff Marks, Nutrition Program, University of Queensland, with involvement from Dr. Karen Webb, Department Public Health and Community Medicine, University of Sydney for the development and management of Australia's food and nutrition monitoring and surveillance system. This is a major initiative that will form the basis of ongoing monitoring and surveillance activities in Australia. Major elements involve: analysis and reporting on existing national data sources, including the 1995 National Nutrition Survey; developing standardised approaches to the collection, analysis, and reporting of food and nutrition data; collation and analysis of data to address specific nutrition policy issues; and developing strategies for effective dissemination and application of information to decision-making. The project will complement and benefit state-level efforts in nutrition monitoring, by working towards a consistent approach to nutrition information with consideration for various user needs.

The National Nutrition Survey

The 1995 National Nutrition Survey (NNS) provides the first nationally representative data on the food and nutrient intakes of Australians since the 1983 National Dietary Survey of Adults and the 1985 National Dietary Survey of Schoolchildren (aged 10-15 years). The NNS NSW sample is sufficiently large for some analyses by age and sex, and by metropolitan/rural areas. The 1995 NNS therefore provides the best available information on the food and nutrient intakes of NSW residents. Some State data are included in the survey publications and a set of State tabulations which the ABS has prepared. However, there is a substantial amount of useful data available regarding NSW priorities which has not been analysed. Recommendations for analysis, presentation and dissemination of NSW data from the NNS are included in Chapter 5 of *Recommendations for Food and Nutrition Monitoring in NSW*.

The NNS included several short questions relating to current food and nutrition policy objectives as well as a 24-hour recall interview and a food frequency questionnaire. These data will allow the validation of the short questions, as possible key indicators for nutrition monitoring. Thus, until we have a nationally agreed set of short questions, they provide a

good option for those seeking questions for State-wide or local population surveys as there is potential for validation and they provide information comparable to the NNS (as discussed in Chapter 4).

Considerable negotiation and advocacy on behalf of the States and Territories will be required to ensure that:

- another national nutrition survey is conducted within a reasonable period of time,
- the information collected in future surveys fulfils State needs for data about food and nutrient intakes, biochemical and physical measurements, and
- the analysis and dissemination of data from future surveys meets State needs.

Recommendations for national networking to support these requirements are included in Chapter 3 of *Recommendations for Food and Nutrition Monitoring in NSW*.

National Strategy for the Prevention of Overweight and Obesity

The National Health and Medical Research Council's (NHMRC) document *Acting on Australia's Weight - A strategic plan for the prevention of overweight and obesity* (NHMRC 1997a), describes a strategy for the prevention of overweight and obesity in Australia, to be implemented over a five to 10 year time period. The strategy document indicates that successful implementation will involve collaboration at national and State levels, particularly with State Health Departments.

The national strategy has been a useful reference for *Recommendations for monitoring overweight and obesity in NSW* (refer to Chapter 6) and the section on national strategies for monitoring and evaluation has been taken into consideration in the development of the NSW recommendations. The NSW recommendations will provide an example of monitoring at the State level which will be useful for further national developments. As the strategies in the National plan are further developed, these should be incorporated into NSW initiatives relating to monitoring overweight and obesity.

The National Cardiovascular Disease Monitoring Plan

The Australian Institute of Health and Welfare's *Outline of a national monitoring system for cardiovascular disease* (Bennett et al 1995) describes a cardiovascular disease monitoring system, including information on risk factors. Nutrition-related risk factors include: 'diet and nutrition' and 'overweight'. Indicators for these risk factors are outlined in the document and have been referred to in the development of indicators for NSW monitoring. In addition, this group has developed a set of data items and definitions for the *National Health Data Dictionary* (AIHW 1998) for monitoring overweight and obesity.

State initiatives

The Directions document for food and nutrition in NSW

Food and Nutrition: Directions for NSW, 1996-2000 (Martin and Macoun 1996) provides ‘a clear statement of the NSW Health Department’s priorities for food and nutrition promotion and locates them within the context of national policy’. The priorities identified in this document include:

1. promoting demand for breads, cereals, vegetables and fruits,
2. promoting the supply of healthy food alternatives in the food service sector,
3. promoting Aboriginal nutrition,
4. developing ongoing monitoring and surveillance in nutrition, and
5. promoting food safety.

Recommendations for Food and Nutrition Monitoring in NSW is the main initiative designed to address the fourth priority, and has included the first priority in many of its suggested recommendations, including the short modules for use in population-based surveys (Chapter 4), the information required from the National Nutrition Survey (Chapter 5), recommendations for Area Performance Contracts and information to be included in the Chief Health Officer’s Report, and recommendations for nutrition-specific publications in NSW (Chapter 2).

The supply of healthy food alternatives in the food service sector has been included in recommendations for specific monitoring initiatives in NSW (Chapter 2). Promoting Aboriginal nutrition has been addressed in the short modules section (Chapter 4) and the recommendations for future monitoring work (Chapter 2).

The NSW Cardiovascular Disease Strategy

Coronary Heart Disease - NSW Goals and Targets and Strategies for Health Gain (NSW CHD EWG 1995) outlines goals and targets, and proposes specific strategies and policies, for State-wide and local implementation of a health outcomes approach to the prevention and control of cardiovascular disease in NSW. The priority area of ‘prevention in a healthy population’ includes ‘improved nutrition’ as one of its three key issues. The goals, targets and strategies contained in this document relate to some of the most important nutrition issues of *Recommendations for Food and Nutrition Monitoring in NSW*, for example, fat intake, saturated fat intake, intake of core foods (breads, cereals, fruit and vegetables), sodium intake and overweight and obesity.

The NSW Health Survey and other State surveys

The NSW Health Survey and other State surveys which may be repeated, for example the High School Drug and Alcohol Survey, are ideal opportunities for the inclusion of nutrition-related questions. It is unlikely that any ‘single topic’ surveys will be conducted on a regular basis in NSW in the near future. It is therefore essential that nutrition questions are included in risk factor surveys, fitness surveys and other surveys which cover a representative sample of

the NSW population. The availability of well-researched and standardised questions increases the likelihood of including nutrition in health surveys. Use of standard questions also ensures comparability of survey results to give a clearer picture than is currently available of progress towards nutrition goals and targets.

Recommendations for short modules, i.e., sets of nutrition-related questions or scales, for use in population-based surveys in NSW and NSW Health Areas have been made in Chapter 4 of this recommendations document.

The NSW Strategy for Population Health Surveillance

The Epidemiology and Surveillance Branch of the NSW Health Department has developed a *Strategy for Population Health Surveillance in New South Wales* (NSW HD 1997) which describes the context and current status of population health surveillance in NSW, and outlines priorities for its improvement. The document recommends the development of surveillance objectives in key areas, including, among others:

- cardiovascular disease,
- cancer,
- diabetes,
- asthma,
- physical activity,
- food and nutrition, and
- environmental health.

Recommendations for Food and Nutrition Monitoring in NSW addresses several of these (cardiovascular disease, cancer, food and nutrition), through the short modules recommended for use in population-based surveys (refer to Chapter 4), the information required from the National Nutrition Survey (refer to Chapter 5) and the recommendations for monitoring overweight and obesity in NSW (refer to Chapter 6).

The Chief Health Officer's report

Limited information about nutrition-related issues was included in *The Health of the People of New South Wales - Report of the Chief Health Officer* (NSW HD 1996). There was considerable potential for expansion of the nutrition section and the development of the 1997 Chief Health Officer's report involved consultation with the NSW Food and Nutrition Monitoring Project to establish the best nutrition-related data for inclusion in this publication.

Local initiatives

Area Performance Contracts

During the time frame of the NSW Food and Nutrition Monitoring Project, the NSW Health Department was in the process of developing a strategies implementation document for the NSW Coronary Heart Disease Goals and Targets (described above). This document formed the basis for negotiations with Area Health Services with respect to Area Performance Contracts and associated yearly reporting procedures. The strategies implementation document contains strategic activities, three year outcomes and performance indicators for different topic areas including food and nutrition. The NSW Food and Nutrition Monitoring Project commented on the draft food and nutrition section of the strategies implementation document, particularly in relation to appropriate indicators for Area Health Service reporting.

Health Outcomes Councils

Each Area Health Service is required to have a Health Outcomes Council. Their primary role is to advise Area Health Service Boards and senior executives on priority setting and strategies for improving health. This includes reviewing current services and programs and monitoring the effectiveness of strategies in relation to the NSW Health Goals and Targets in the key priority areas of:

- cardiovascular disease (CVD),
- cancer,
- injury,
- mental health, and
- diabetes.

Nutrition monitoring will provide information relevant to the areas of CVD, cancer and diabetes.

Appendix 3: NSW priorities for National Nutrition Survey data

***Table A3.1: Body mass index (adults)**
(physical measurement)

	Age							Total Met	Total X-Met
BMI	19-24	25-34	35-44	45-54	55-64	65-74	75+		
All ages									
	(Per cent)								
Males									
Underweight (<20)									
Acceptable weight (20-25)									
Overweight (>25 ≤ 30)									
Obese (>30)									
Not stated									
Total									
	(kg/m ²)								
Mean									
5th centile									
Median									
95th centile									
Standard error of mean									
	(Per cent)								
Females									
Underweight (<20)									
Acceptable weight (20-25)									
Overweight (>25 ≤ 30)									
Obese (>30)									
Not stated									
Total									
	(kg/m ²)								
Mean									
5th centile									
Median									
95th centile									
Standard error of mean									

***Table A3.2: Waist-to-hip ratio (adults)**
(physical measurement)

	Age								
WHR	19-24	25-34	35-44	45-54	55-64	65-74	75+	Total Met	Total X-Met
All ages									
								(Per cent)	
Males									
Acceptable									
Above recommended ^a									
Not stated									
Total									
								(Ratio)	
Mean									
5th centile									
Median									
95th centile									
Standard error of mean									
								(Per cent)	
Females									
Acceptable									
Above recommended ^a									
Not stated									
Total									
								(Ratio)	
Mean									
5th centile									
Median									
95th centile									
Standard error of mean									
^a								> 0.9 for men	
								> 0.8 for women	

***Table A3.3: Heights, weights, body mass index, waist-to-hip ratio (children)**
(physical measurement)

	Age																
	Fine age range																
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
HEIGHT																	
	(m)																
Boys																	
Mean																	
5th centile																	
10th centile																	
15th centile																	
25th centile																	
Median																	
75th centile																	
85th centile																	
90th centile																	
95th centile																	
Standard error of mean																	
Girls																	
Mean																	
5th centile																	
10th centile																	
15th centile																	
25th centile																	
Median																	
75th centile																	
85th centile																	
90th centile																	
95th centile																	
Standard error of mean																	
WEIGHT																	
	(kg)																
Boys																	
(As above)																	
Girls																	
(As above)																	
BMI																	
	(kg/m ²)																
Boys																	
(As above)																	
Girls																	
(As above)																	
WHR																	
Boys																	
(As above)																	
Girls																	
(As above)																	

Tables A3.4 - A3.8: Food intake (2, 3, and 4-digit food groups)

(from IFIQ)

Table A3.4: Mean (per capita)

Table A3.5: Mean (per consumer)

Table A3.6: Median (per capita)

Table A3.7: Median (per consumer)

Table A3.8: % consuming

Age

Foods

ages

2-3 4-7 8-11 12-15 16-18 19-24 25-34 35-44 45-54 55-64 65-74 75+ Total Met Total X-Met All

(g/person/day)

Males

2 digit

+3 digit

+4 digit

categories

Females

2 digit

+3 digit

+4 digit

categories

Table A3.13: Core food group intake - % above recommendation^a
(from FFQ or probability analysis IFIQ)

	Age														
	2-3	4-7	8-11	12-15	16-18	19-24	25-34	35-44	45-54	55-64	65-74	75+	Total Met	Total X-Met	All ages
Males															
breakfast cereal															
bread															
rice/pasta															
cereal total															
vegetables (excluding juice)															
vegetables (including juice)															
fruit (excluding juice)															
fruit (including juice)															
meat (all types-including fish)															
eggs															
meat/eggs total															
milk equivalents															
Females															
breakfast cereal															
bread															
(As above)															

^a as in *The Core Food Groups* (NHMRC, 1995)

Tables A3.14-18:

(from IFIQ)

*Table A3.14: Mean (per capita)

Table A3.15: Mean (per consumer)

*Table A3.16: Median (per capita)

Table A3.17: Median (per consumer)

*Table A3.18: % consuming

Selected food intake

Age

Food categories 2-3 4-7 8-11 12-15 16-18 19-24 25-34 35-44 45-54 55-64 65-74 75+ Total Met All ages

(g/person/day)

Males

high fibre bread

low fibre bread

high fibre breakfast cereals

low fibre breakfast cereals

high fat dairy fats/margarines

low fat dairy fats/margarines

full fat milk

reduced fat milk

low fat milk

(g/person/day)

Females

high fibre bread

low fibre bread

high fibre breakfast cereals

low fibre breakfast cereals

high fat dairy fats/margarines

low fat dairy fats/margarines

full fat milk

reduced fat milk

low fat milk

***Table A3.19: Nutrient intake - Mean (per capita)**
(from IFIQ)

Nutrients	Age														
	2-3	4-7	8-11	12-15	16-18	19-24	25-34	35-44	45-54	55-64	65-74	75+	Total Met	Total X-Met	All ages
ENERGY															
Males															
Mean															
5th centile															
Median															
95th centile															
Standard error of mean															
Females															
Mean															
5th centile															
Median															
95th centile															
Standard error of mean															
WATER															
Males															
(As above)															
Females															
(As above)															
Continue with other nutrients															

(unit as appropriate)

***Table A3.20: Contribution of nutrients to total energy intake
(from IFIQ)**

Nutrients	Age											Total Met	Total X-Met	All
	2-3 ages	4-7	8-11	12-15	16-18	19-24	25-34	35-44	45-54	55-64	65-74			
FAT														
Males														
Mean														
5th centile														
Median														
95th centile														
Standard error of mean														
Females														
Mean														
5th centile														
Median														
95th centile														
Standard error of mean														
SATURATED FAT														
Males														
(As above)														
Females														
(As above)														
CARBOHYDRATE														
Males														
(As above)														
Females														
(As above)														
ALCOHOL														
Males														
(As above)														
Females														
(As above)														
PROTEIN														
Males														
(As above)														
Females														
(As above)														

***Table A3.21: Persons who met selected dietary recommendations for nutrient intakes (adults)**
(FFQ or probability analysis IFIQ)

	Age									
Recommendation	19-24	25-34	35-44	45-54	55-64	65-74	75+	Total Met	Total X-Met	All ages
	(Per cent)									
Males										
Dietary fat intake $\leq 30\%$ of total energy intake										
Saturated fat intake $\leq 10\%$ of total energy intake										
Carbohydrate intake $\geq 55\%$ of total energy intake										
Alcohol intake $\leq 5\%$ of total energy intake										
Dietary cholesterol intake ≤ 300 mg/day										
Calcium intake \geq :										
800 mg/day (men)										
800 mg/day (women <54 years)										
1000 mg/day (women ≥ 54 years)										
Iron intake \geq :										
7 mg/day (men)										
12 mg/day (women <54 years)										
5 mg/day (women ≥ 54 years)										
Dietary fibre intake ≥ 30 g/day										
Females										
(As above)										

***Table A3.22 : Persons who had selected dietary habits**
(from specific questions unless otherwise stated)

	Age											Total	Total	
	2-3	4-7	8-11	12-15	16-18	19-24	25-34	35-44	45-54	55-64	65-74			75+
All ages													Met	X-Met

(as appropriate for each question)

(Per cent)

USUAL DAILY NUMBER OF EATING OCCASIONS

Males

- Once
- 2-4 times
- 5-6 times
- 7 or more times
- Don't know/varies/depends

Females

(As above)

USUAL FREQUENCY OF BREAKFAST CONSUMPTION

Males

- Rarely or never
- 1-2 days
- 3-4 days
- 5 or more day
- Don't know/varies/depends

Females

(As above)

FREQUENCY OF SALT USE IN COOKING

Males

- Never/rarely
- Sometimes
- Usually
- Don't know

Females

(As above)

FREQUENCY OF SALT USE AT TABLE

Males

- Never/rarely
- Sometimes
- Usually

Females

(As above)
Continued

Table A3.22 (continued)

	Age													Total	Total	
	2-3	4-7	8-11	12-15	16-18	19-24	25-34	35-44	45-54	55-64	65-74	75+				
All ages															Met	X-Met
(as appropriate for each question)																
(Per cent)																
TYPE OF MILK USUALLY CONSUMED																
Males																
Whole																
Low/reduced fat																
Skim																
Evaporated or sweetened condensed																
None of the above																
Don't know																
Females																
(As above)																
MEAT TRIMMING																
Males																
Never/rarely																
Sometimes																
Usually																
Don't eat meat																
Females																
(As above)																
SERVES OF VEGETABLES USUALLY EATEN EACH DAY																
Males																
1 serve or less																
2-3 serves																
4-5 serves																
6 serves or more																
Don't eat vegetables																
Females																
(As above)																
SERVES OF FRUIT USUALLY EATEN EACH DAY																
Males																
1 serve or less																
2-3 serves																
4-5 serves																
6 serves or more																
Don't eat fruit																
Females																
(As above)																

Table A3.22 (continued)

	Age													Total	Total
	2-3	4-7	8-11	12-15	16-18	19-24	25-34	35-44	45-54	55-64	65-74	75+			
All ages														Met	X-Met

(as appropriate for each question)

(Per cent)

WEIGHT CHANGE OVER PREVIOUS YEAR

Males

- Increased
- Decreased
- Stayed the same
- Don't know

Females

(As above)

REASONS FOR WEIGHT CHANGE OVER PREVIOUS YEAR

Males

- Change in kind of food/drink consumed
- Change in amount of food/drink consumed
- Ageing or physical growth
- Change in physical activity levels
- A medical condition
- No special reason
- Other

Females

(As above)

FOOD SECURITY

Males

- Yes
- No

Females

- Yes
- No

PROPORTION OF MEALS, SNACKS OBTAINED AWAY FROM HOME
(from IFIQ)

Males

Females

Table A3.23: Vitamin and mineral supplements^a
(from FFQ)

Supplement	Age										Total Met	Total X-Met	All ages
	12-15	16-18	19-24	25-34	35-44	45-54	55-64	65-74	75+				

(Per cent)

MULTIVITAMIN WITH IRON OR OTHER MINERALS

Males

- Never, or less than once a month
- 1-3 times per month
- Once per week
- 2-4 times per week
- 5-6 times per week
- Once per day
- 2-3 times per day
- 4-5 times per day
- 6+ times per day

Females

(As above)

MULTIVITAMIN

Males

(As above)

Females

(As above)

continue with other supplements as in FFQ

^a Average number of times consumed in the last 12 months

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