WATCHING OVER AND IMPROVING THE FOOD,

NUTRITION AND CHRONIC/NON COMMUNICABLE

DISEASES SITUATION

IN THE

FEDERATED STATES OF MICRONESIA

by

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South Pacific Commission
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EXECUTIVE SUMMARY

A National Nutrition Survey was conducted in 1987-88 by the Federated States of Micronesia (FSM). A National workshop was then conducted in March 1989 and State workshops in 1989 and 1990 to present the results of the survey, discuss priorities and prepare plans for nutrition improvement. Several **recommendations** were made at these workshops to "monitor the impact of nutrition intervention programs through the regular reporting of information and statistics on key indicators such as food supply and availability, nutritional status and food patterns". Activities proposed at State level included child growth monitoring and overweight screening.

A **National Conference on Chronic Diseases** Prevention and Control was held in Palikir in November 1991. Participants from each State, from a wide range of National, State and non government organisations, prepared State plans which all included screening, follow up and monitoring activities.

Following from the recommendations and needs identified for nutrition and NCD surveillance by these workshops an initial **consultancy** in the Federated States of Micronesia was carried out by the South Pacific Commission from 27 March to 12 April 1992 by Ms Cecily Dignan, Nutritionist and Dr. François Bach, Epidemiologist. This consultancy was conducted in close association with the National Department of Human Resources and State Health Services.

It is now recognised that diseases related to poor nutrition and lifestyle are the **leading causes of death and morbidity** in most Pacific Island nations including the FSM. For many years surveillance systems have been developed for infectious diseases, to quickly control the spread of epidemics. As we are now facing a very large number of NCD, under-diagnosed in their early stages, it is urgent to set-up routine procedures to watch over and control this large but hidden epidemic.

Nutrition and Chronic Non-Communicable Diseases (NCD) surveillance means monitoring or finding out what changes occur over time in the nutritional status, in the risk factors for chronic diseases and in the prevalence of chronic diseases, in the population. The usefulness of NCD and nutritional surveillance is primarily dependent on the potential for taking action to improve nutrition and prevent NCD and their complications. Decisions that will improve the nutritional status of the population need to be made at different levels: at national, state and at the community level.

Nutrition and NCD surveillance cover a wide range of diseases such as child and mother under-nutrition, and hypertension, diabetes type II, heart diseases, cancer, stroke, gout and their related complications in adults. It also includes risk factors for NCD such as obesity, and tobacco and alcohol consumption. Additionally, information on food availability and food consumption, as well as various socioeconomic statistics are also needed.

Very large **amounts of data** are collected by the departments of Health, Agriculture, Customs, Trade and Statistics, but with very limited information fed-back to the local users at the various levels. The quality of this data is often questionable because of the lack of clear case definitions and clear guidelines for follow-up actions. An additional constraint is the often limited coverage of the population, especially in the outer islands.

Based on both the priorities and recommendations of NCD and nutrition workshops held in the FSM in recent years together with discussions, with mainly Health personnel during the consultancy the following eight areas were identified for surveillance activities:

- Undernutrition in children 0-5 years
- Reduction of overweight in adults
- Improved nutritional status of school children
- Diabetes control and prevention of complications
- Hypertension control, prevention of heart diseases and stroke
- Cancer prevention and early detection
- Reduction in the use of tobacco, alcohol abuse and the consumption of certain imported foods
- Promotion of local food production and consumption

For each area, the purpose of the surveillance, indicators to be collected, their method of collection and analysis, the action to be taken, and by whom, together with needs (in terms of resources and training) are outlined.

A practical **implementation plan** for nutrition surveillance is proposed covering the remainder of the year 1992 to test and refine some of the surveillance activities suggested in the report. A follow-up visit is planned later in 1992 to assist with the implementation of some of these activities, and further refine components of the surveillance system.

USER'S GUIDE

As you can see this is quite a long report. That is because a Food, Nutrition and NCD surveillance system needs to collect information from many different sectors and then use that information to take a variety of actions to improve the situation.

Not everyone will need to read the report from cover to cover. But several people should, including members of the National Food and Nutrition Commission, national and state planners, statisticians, and NCD coordinators, the National Nutrition Coordinator and Health Statistician.

For most users, you will need to read through the first four chapters, especially chapter 4, in order to understand what Food, Nutrition and NCD surveillance in FSM is about. Then choose one or more of the eight surveillance areas in chapter 5 that is relevant to you. These go into the details of how surveillance should be done. For example:

- Agriculturalists will go to section 5.8 on promotion of local food production. Section 5.7 will also have somthing of interest for them.

- MCH supervisors and nurses will mainly want to study section 5.1 on under-nutrition in children 0-5 years.

- Teachers, curriculum staff of the Education Department and school nurses will want to concentrate on Section 5.3 on improved nutritional status of school children.

- Health staff working on NCDs, doctors, nurses, nutrition educators and public health supervisors will want to read 5.2, 5.4., 5.5 and 5.6.

- Laboratory staff should read 5.6.

Getting started

The idea is to begin improving on what is already being done and gradually introduce some new activities. Chapter 6 suggests a time-frame for implementing surveillance activities. Read this plan to see if you and your sector are able and willing to do what is suggested in the next few months. After you have trialled some of these activities your suggestions can then be used to improve the surveillance system.

ACKNOWLEDGEMENT

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ANNEXES

1. BACKGROUND

A National Nutrition Survey was conducted in 1987-88 by the Federated States of Micronesia (FSM). A National workshop was then conducted in March 1989 and State workshops in 1989 (Pohnpei, Chuuk, Kosrae) and 1990 (Yap) to present the results of the survey, discuss priorities and prepare plans for nutrition improvement.

Several recommendations were made at these workshops to "monitor the impact of nutrition intervention programs through the regular reporting of information and statistics on key indicators such as food supply and availability, nutritional status and food patterns". Activities proposed at State level included child growth monitoring and overweight screening.

A National Conference on Chronic Diseases Prevention and Control was held in the FSM Capital, Palikir in November 1991. Participants from a wide range of National, State and non-government organisations, prepared State specific plans for chronic disease prevention and control, including screening, follow-up and monitoring activities.

Since the beginning of the National Nutrition Survey planning in 1985, SPC has been involved closely in Nutrition and NCD activities in FSM (the Nutrition Survey, follow-up workshops, and with curriculum and materials development). Additionally, FSM and State staff have participated in several SPC regional workshops and meetings. Ongoing support with nutrition and chronic disease activities has also been provided by Unicef (Suva and Manila) and WHO.

2. THE CONSULTANCY

In October 1991, the Government of Federated States of Micronesia requested technical assistance from the South Pacific Commission "to develop Malnutrition and Chronic Disease registries (as part of a Health Information Surveillance system) after the Chronic Disease workshop." The request included assistance to the FSM National staff as well as to the State staff, to be provided by a nutritionist and an epidemiologist.

This consultancy carried out in the four States of FSM from March 27 to April 12 by Ms Cecily Dignan and Dr. François Bach included meetings with Health, Statistics, Education, Agriculture, Customs and Trade personnel; Visits to hospitals, health centres, dispensaries in the States of Chuuk and Pohnpei by Dr. François Bach and Ms Jane Elymore, FSM Nutritionist and in the states of Kosrae and Yap by Ms Cecily Dignan and Mr. Amato Elymore, FSM Health Statistician. The consultancy was co-ordinated by the FSM Department of Human Resources, in particular by the Elymores who played a leading role in all the activities of these two weeks. The consultancy concluded with a briefing meeting for members of the National Food and Nutrition Commission and a two-hour seminar for National and Pohnpei state staff from the Health, Agriculture

and Education sectors Pohnpei to provide feed-back on the draft report. These comments and suggestions were included in the final report. A summay of this seminnar is at annex 21.

3. INTRODUCTION TO NUTRITION AND NCD SURVEILLANCE

3.1 The concept and some definitions

Nutrition surveillance means monitoring or finding out what changes occur over time in the nutritional status of a population. This is done in order to make decisions about how to improve the nutrition of the population.

The SPC has been involved in the planning, implementation and analysis of a number of Nutrition and NCD surveys in the Pacific islands to provide baseline information on poorly recognised diseases particularly emerging with the change in diet and lifestyle of Pacific islanders.

A number of countries have now expressed their need for ongoing information to monitor changes and evaluate their activities, that is, they wish to set-up regular surveillance systems. Such routine data collection activities already exist for various diseases and conditions such as notifiable infectious diseases and cancer at national and regional level. The concept has now to be extended to nutrition and other lifestyle related diseases grouped under the term of Non Communicable Diseases or Chronic Diseases.

Non Communicable Diseases include diabetes (type II of adult onset, usually associated with obesity), hypertension and related complications such as stroke, ischemic heart diseases, various cancers, gout, chronic lung and renal diseases. Other problems are often included as they related to similar risk factors. For example, motor vehicle injuries, when the accident is caused by alcohol abuse.

It is now recognised that diseases related to poor nutrition and lifestyle are the leading causes of death and morbidity in most Pacific Island nations including the FSM. Because we are now facing a very large number of poorly recognised and gradually developing diseases, it is urgent to set-up routine procedures to watch over and control this large but hidden epidemic.

There are many components to an NCD Surveillance system. These include information on:

* overweight and obesity in adults and children
* the dietary pattern of the population
* other lifestyle risk factors, such as lack of sufficient exercise, alcohol abuse and tobacco use
* prevalence of the diseases themselves, and their complications
* the availability of nutritious foods
* various socioeconomic statistics

Nutrition and NCD Surveillance obviously overlap. To monitor NCD certain nutritional status and food consumption data is needed.

Additionally other risk factor and socioeconomic statistics are required. Nutrition surveillance includes undernutrition and anaemia in pregnant and lactating women, as well as in children under 5-years-old and school-aged children.

Several countries have begun some components of surveillance programs for nutrition and NCD in the past few years and SPC has participated in such activities in Vanuatu and Fiji. In 1991 two consultancies were carried out in the Solomon Islands to assist in the implementation of a National Food and Nutrition Surveillance system.

3.2 The surveillance cycle

Surveillance is a cycle. Knowing the problems and their causes, leads to decisions about intervention, and action is carried out. Information on the change in nutritional status of the population is then gathered to measure the success or failure of the interventions, and this then leads to further decisions and action, and hence the cycle goes around again.

objectives

indicators

population

action   collection

SURVEILLANCE

decision

CYCLE

receipt by   receipt by
relevant person   relevant person

interpretation
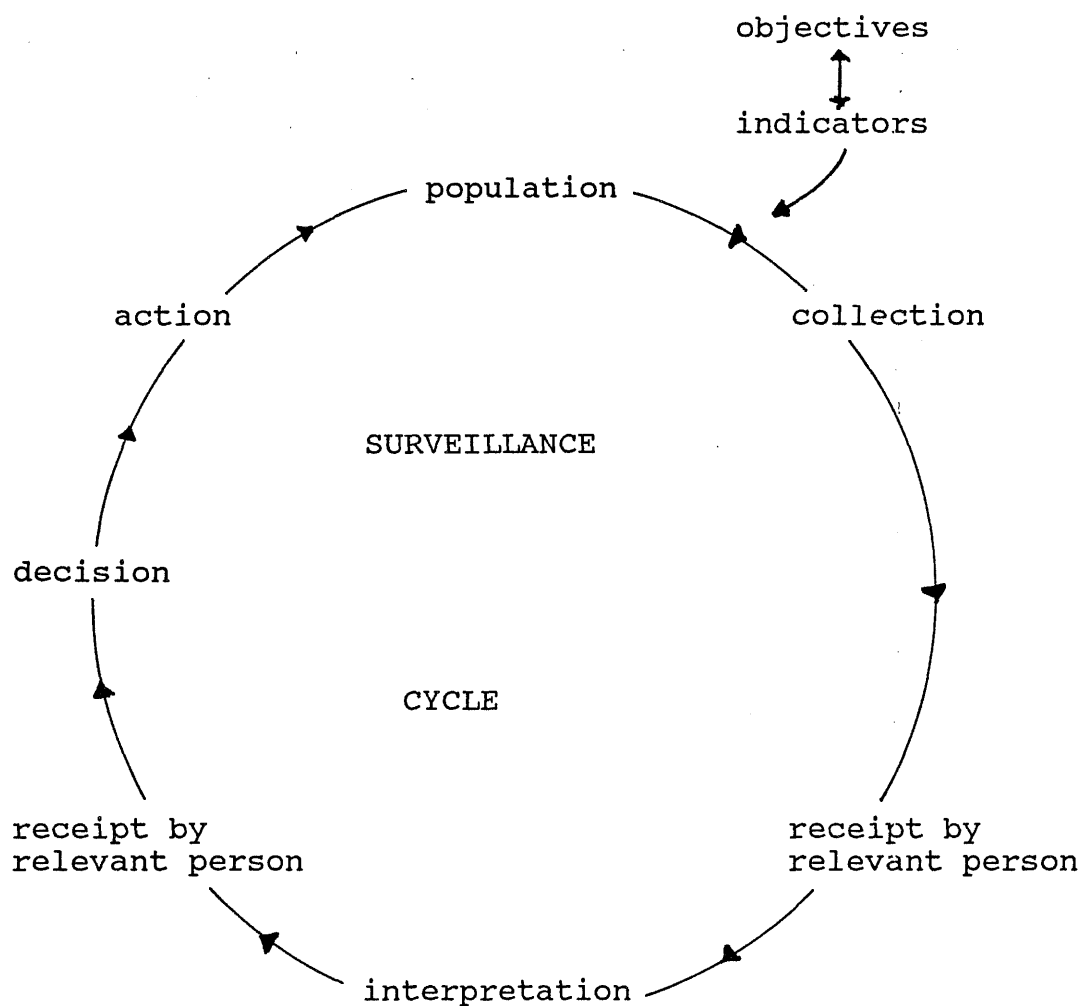
In most cases the longer the cycle takes, the less likely that decisions and corrective action will be taken in time to be effective.

3.3 Indicators for nutritional status and NCD monitoring

A nutritional indicator is a factor which affects nutritional well-being or status, or is a consequence of nutritional status. An indicator for NCD could reflect either the proportion of people with the disease (prevalence), or with its' complications, or the proportion of the population with the various risk factors for the disease.

Indicators can be direct or indirect measurements. For example, weight for age (W/A) of children 0-5 years is a direct measure of a child's nutritional status, while in comparison, a child's dietary intake is an indirect measure of the child's nutritional status.

The usefulness of each indicator must be assessed. Is the indicator valid (does it measure what you want it to measure)? Is it reliable (what are the sources of mistakes and how great would they be expected to be)? Does it represent what is really happening in the community (is the indicator measured on a representative sample of the population)? And finally, what is the cost of measuring the indicator, in terms of staff time, transport and other costs.

The limitations of the various indicators must be well known and remembered. For example outpatient data on hypertension or diabetes, will not provide incidence or prevalence information for the population. That can only be obtained through specific population based surveys. However, this routinely collected data is very useful as an indicator of disease trends and of the clinic's activity.

Each indicator must have critical limits or "cut-off" points so that it is clear at what point action needs to be taken. These "cut-off" points need to be easy to understand and use under local conditions.

Indicators for nutritional and NCD surveillance can be found already in the data collected by different sectors such as Health, Planning and Statistics, and to a lesser extent from Education and Agriculture.

3.4 The steps in developing a surveillance system:

3.4.1   Identification of the nutrition and NCD problems

The identification of the problems includes: the types of diseases, who is affected, in what geographic and socioeconomic areas, and what are the causes. An overview is required on what is known about the problems and their causes. It should cover what gaps exist in the information.

3.4.2   Identification of the purposes of the surveillance

This must be clearly stated to guide:

- policy and planning decisions at the national and state levels;

- programme management; and

- interventions (for the individual patient or client or to community).

3.4.3   Identification of the priorities for surveillance

Select priority problems for surveillance, based on the the importance and severity of the problem, the potential for improvement and on the feasibility of intervention

3.4.4   Identification of users and decisions:

- what departments, institutions, other groups, and staff are responsible for the planning, implementation and evaluation of activities relevant for nutrition and NCD problems;

- what policies and programmes affect the problems, or the causes of the problem now or could in the future?

3.4.5   Identification of sources of relevant information that are available to the users now, and what other information they require to make decisions and take action.

3.4.6   Choosing indicators based on the action to be taken by each type of staff.

3.4.7   Prepare an implementation plan

Decide on:

- the components of the surveillance system that will be needed: routine reporting, special information gathering activities such as surveys, sentinel sites, registries or rapid participatory appraisal;

- what equipment, staff, transport, reporting system, and other resources are needed for each component;

- the regularity and timing of each of the activities — who will collect what, and when;

- who will do the analysis and how will feed-back be done. The data collected must be analysed rapidly for the decisions-maker so that the information is still relevant.

Ensure that:

- clear guidelines for decision-making and action are in place at all levels.

  For example, when a child is found moderately malnourished what is the sequence of actions the clinic staff should take?

- The decision-maker has the authority and resources to take the necessary action in a timely manner.

- there is overall co-ordination of all the components within and between sectors so that collection, analysis, interpretation and action on each indicator is timely.

4. NUTRITION AND NCD SURVEILLANCE IN FSM

4.1 Identification of the nutrition and NCD problems

The 1987-88 National Nutrition survey provided baseline information on the nutritional status and food consumption patterns of children 0-5 years and women 15-49 years. The major findings were:

- a high prevalence of overweight and obesity in adult women

- a high consumption of imported foods, especially sugar, rice and fatty meats

- 13% of the 0-5 year odds moderately malnourished (most thin children were in the 12-36 month age group) and with 6% with very high weights.

Little information exists on the extent of NCD in the population. Without population based surveys on diabetes, hypertension and their complications we can only refer to outpatient clinic data, inpatients discharges and causes of deaths. This information is compiled in the very detailed Digest of Health Statistics for the period 1986-90 (A. Elymore, Health Statistician, 1991).

Death certificates are thought to reflect around 50% of actual deaths and this may cause severe discrepancies as the unrecognized causes of death may often be related to diseases which are slow to develop such as cancer, diabetes, cardiovascular diseases or their complications.

This type of data is usually inconsistent from one state to another and does not provide incidence or prevalence rates for NCD. However, it is of value to see what proportion of total health staff activity these diseases represent (report presented by Dr. S. Auerbach and A. Elymore at the 1991 NCD conference).

The statistics available on Non-Communicable Diseases are summarised in Annexes 1, 2, 3, 4 and 5 and prepared from the FSM Digest of Health Statistics (1986-90) and from computerised national health data.

- Cardiovascular diseases represent 11% of outpatient visits, 44% of inpatients discharge diagnosis and 39% of the underlying causes of death.

- Asthma (13%) and other non specified respiratory diseases (including a number of chronic conditions such as chronic bronchitis,COPD) represent 63% of outpatients visits.

- Diabetes and other endocrine conditions are responsible for 21% of inpatients admissions and 15% of deaths.

- Cancers are now reaching 10% of the inpatient diagnosis and 9% of the causes of death. An analysis of cancers by site is presented in Annex 4.

- Traffic injuries, which are often related to alcohol abuse, account for 12% of the inpatients admissions.

- Malnutrition in women is reflected in children with low birth weight, LBW (2500grams or less). LBW represented 9.7% of the birth in 1989 (8,7% after correction for prematurely Annex 5).

The criteria for selection of the common NCD using International Classification of Disease 9 codes are found in Annex 19.

The "Youth Risk Behaviour Survey," currently being conducted in the four States will collect useful behavioural data on tobacco smoking and alcohol consumption and other health risk factor behaviours.

Data on the quantity of alcohol (beer and spirits) and tobacco, should be available at the state level. Unfortunately only the dollar value of these imports is available at the state and national levels. Monthly values and yearly totals are provided to the state Departments of Planning and Statistics. It is collected solely for the purpose of revenue raising through taxation on imports of these items. There is a place on the revenue form for quantity, but revenue officers are not directed to fill this out. This is a potentially extremely valuable piece of information for both Health, Agriculture and Education staff.

4.2 Purpose of surveillance

Nutrition surveillance is aimed at improving the nutritional status of children and adults. It is particularly timely to commence this surveillance now since baseline information exists through the 1987-88 NNS, and since a number of programs for nutrition improvement have been initiated together with the beginning of multi-sectoral coordination by the National Food and Nutrition Commission, and State Food and Nutrition Councils.

NCD surveillance aims at:

- preventing the development of risk factors (for example, discouraging people from commencing smoking in order to prevent the development of lung cancer);

- controlling NCD in people who already have the disease, for example, in the case of diabetics or hypertensives strongly encouraging them to lose weight, through diet and exercise;

- providing early diagnosis for NCD to prevent the development of their complications. For example, in the case of a diabetic, the monitoring of blood pressure, which could become elevated as a result of the diabetes is "secondary prevention" for hypertension control. Trying to avoid handicaps created by complications is "tertiary prevention" such as rehabilitation for stroke victims.

Little information exists on the extent of NCD in the population and the surveillance system should first provide this type of data to identify the magnitude of the problems and encourage the setting up of nation-wide NCD control programs. At this stage programs for health education and clinical management of NCD are not very developed in FSM. The lack of awareness of the seriousnedd of the problem by people in FSM is also reflected in the absence of specific legislation (for example, in the areas of limiting the advertising and promotion of tobacco use) and little coordination on NCD between sectors (various government departments and agencies and non-government organisations).

NCD prevention and control is very closely associated with nutrition improvement, so it is logical to put them together as one surveillance system. The NCD prevention will certainly gain from the growing public awareness on Nutrition and the progress made in policies, programs and coordination for nutrition improvement.

4.3 Priorities for surveillance

4.3.1   The **National Nutrition Workshop** conducted March 10-21, 1989 defined 7 priorities "in response to the growing concern about the deteriorating nutritional status of the population of FSM" (Annex 7). Some of the recommendations found in Dr. Solon's (**Unicef**) report are related to surveillance activities, and these are as follows:

No1."Inter-agency committees should assist in the monitoring and evaluation of the nutrition program and act as a clearing house for research and surveys." The FSM division of Human Resources and Development later endorsed the creation of a National Nutrition Commission.

No7. "The impact of nutrition programs should be monitored in each state every 2-3 years. To this end there is a need for regular regular reporting of information and statistics on key indicators such as food supply and availability, nutritional status and food patterns by all the agencies concerned."

Priorities for surveillance were listed in the guidelines as:

■ Assessment of nutritional status of the vulnerable groups (i.e. the preschool and school children, adolescent, pregnant and lactating women), including measurement of weight, heights, hemoglobin levels and clinical signs of vitamin A deficiency.

■ Develop an adolescent and adult weight monitoring project for early warning and detection of overweight and obesity using an adult weighing chart showing the weight trends and including space for monitoring of physical status (blood pressure, blood and urine sugar, hemoglobin etc..). Dietary guidelines would also be listed together with instructions for exercise and physical fitness.

■ A system should be designed for periodic collection of data from the clinics and school for analysis, interpretation and formulation of possible action responses. The compiled year end data should serve as basis for yearly assessment of the progress of the nutrition program.

4.3.2   **The Yap State Nutrition workshop** (2-4 April 1990) listed as part of its recommendations:

-    No1. "To create a State Nutrition Council which proposed functions include monitoring and evaluation of program and project."

-    No2. "To establish nutrition clinics for assessment, counseling and for growth monitoring purposes at the hospital and dispensaries."

4.3.3   The Nutrition workshops held in **Pohnpei and Kosrae** in 1989 endorsed again the recommendations above from the National workshop.

4.3.4   The Nutrition workshop for the **State of Chuuk** was held in October 1989 and recommendations for surveillance are abstracted from Dr. S. Solon's (Unicef) report:

No1. "The Primary Health Care Committee should create a Task Force on Nutrition to analyse nutrition surveys, monitor and evaluate program and project implementation."

No5. "The MCH program should initiate and intensify growth monitoring activities. This means first to provide weight and height charts for children and scales." It was

recommended that the age 0-35 months be weighed every month (as well as all malnourished children) and 36-59 months every quarter. Training of MCH staff was stressed.

No6. "Weight monitoring and dietary guidelines for adolescents and adults should be initiated for the prevention of overweight." This included the development of a chart as well as other physical indicators (hypertension, diabetes and heart diseases). This would fit well with the existing hypertension clinic conducted by Public Health and the dispensaries.

4.3.5   A **National Conference on Chronic Diseases Prevention and Control** was held in the capital, Palikir in November 1991. Participants from a wide range of National, State and Non-government organisations, prepared State specific plans for NCD prevention and control including screening, follow-up and monitoring activities.

a)   The proposed plan for **Pohnpei State** first recognised the limited information available on the extent of NCD. However routine health statistics (Digest of Health Statistics 1986-89) shows that Cardiovascular diseases are the first cause of death, Cancer the second and Pulmonary diseases the third (mostly COPD). The NCD problem was considered "disproportionately immense and should be treated as high priority" with preventive measures for the most prevalent NCD and close monitoring of people already suffering from these diseases.

Recommendations were made for screening and clinical management at various clinic sites with emphasis placed on the need for coordination in medical follow-up. This includes the setting up of registries for individual NCD supervised by a physician and an NCD coordinator. More clinic sites should be developed for better screening and follow-up.

b)   **Kosrae State** NCD proposal for Appropriate Action considered Diabetes, Hypertension and Cancer as the first priorities to reduce mortality and morbidity through prevention and health education, screening, patient management and treatment of complications.

Activities proposed included bi-annual screening by NCD coordinator, Public Health nurse and physician. Results of the screening should be treated and referred according to a fixed protocol. NCD clinical activities were to consist of standardized visits including patient education.

A protocol for a population based NCD survey was developed recently by Dr. Vita Skilling, and is likely to be funded and completed before the end of 1992. It should provide accurate prevalence data for diabetes in Kosrae.

c) **Yap State** report focused on diabetes and in particular the organisation of a diabetes clinic designed to ensure strict control of blood sugar levels, promote the management of concomitant risk factors, evaluate the effectiveness of management of diabetes cases by health staff, and provide for the aggressive treatment of any arising complications.

Screening would be organised twice a year at dispensaries. Any patient with a fasting blood glucose (FBG) of 140 should be referred to the diabetes clinic. Clear protocols are provided for the initial and follow-up visits as well as guidelines for diabetes drug therapy. Training has been provided to health aids and health assistants working in dispensaries to operate these diabetes clinics. Computerisation of the data is being carried out in order to evaluate the above-mentioned objectives of the clinics.

d) **Chuuk State** report recommended the improvement of screening activities and the establishment of an NCD registry with an NCD clerk coordinating the NCD data collection from all sectors of the State. The report stressed that management of NCDs must be strengthened by having clear procedures, education guidelines, training and supplies.

The NCDs listed for attention are Hypertension, Diabetes, Chronic Obstructive Pulmonary Disease(COPD), Cancer, Arthritis, Accidents and injuries caused by alcohol abuse.

Dr. Kasyan Roby, has developed an NCD survey protocol for a survey of Moen Island, which if undertaken, should provide reliable prevalence rates for the major NCDs.

From these reports we can draw-up a list of areas for surveillance for the FSM. Although each State may place more emphasis on different areas, all areas are of concern to all States, and it is important to standardize diagnosis, management and reporting procedures across the country. The areas are as follows:

AREAS SELECTED FOR SURVEILLANCE:

1. Improved nutrition in children 0-5 years

2. Reduction in Overweight in adults

3. Improved Nutritional status of school children

4. Diabetes control and prevention of complications

5. Hypertension control, prevention of heart diseases and stroke

6. Cancer prevention and early detection

7. Reduction in the use of tobacco, alcohol abuse and the consumption of certain food imports

8. Promotion of local food production and consumption

4.4 Users and Decisions

Decisions that will improve the nutritional status of the population and assist in the prevention and control of NCD, need to be made at different levels of government and at the community level. For FSM these decisions should have as their basis the need to address the identified nutrition and NCD problem areas, by:

- Immediate management of malnourished children and provision of advice to mothers by the field health staff (nurses, nurse-aids, village health workers);

- Community action to improve the nutritional status of under five-year-old children;

- Establishing prevention procedures including screening and control for overweight, diabetes, hypertension and related complications in adults by hospital, Public health and dispensary staff;

- Testing and evaluation of food and nutrition education programs by nutrition and health educators and agricultural extension workers;

- Assessment of nutritional status of school children by nurses and education staff;

- Monitoring of the quantities of various types of food imports by national customs and statistics personnel;

- Monitoring the availability of local foods at restaurants and take-outs, and enforcing a specified minimum local food content, by health inspectors;

- Monitoring changes in local food production by agricultural extension officers;

- Development of legislation concerning the imports of certain foods, tobacco and alcohol, advertising and prices, through the National Food and Nutrition Commission and state committees.

4.5 Sources of data

Only data necessary to determine the need for action should be collected. Collecting data for potential future studies is not appropriate since since most of these studies never occur and if so they need specific data that usually must be collected following a standardized protocol.

Very large amounts of data are collected by Health, Customs, Revenue, Planning and Statistics, and Resources and Development departments' staff. Much data is collected to fulfill grant obligations and requirements from international agencies without being actually used by the program staff to monitor and improve their programs. A reduced amount of this data is turned into information at the State and national level. Only at the end of this long and expensive process a much reduced portion of this information appears to be reaching the users/decision makers at any level.

Once collected, it should be first analysed at the field level for immediate use. For example, mapping the number of cases of malnutrition each month in a dispensary will provide immediate information.

To be able to make practical guidelines for surveillance, this consultancy evaluated the existing sources of data from the Health sector (in terms of quantity, duplication, reliability, staff time and efficiency of collection). Other sources of information such as local food availability, import statistics, demographic and socioeconomic data were also reviewed.

4.5.1 Health sector

a) Routine data collection

Routine data is provided by the health staff for the entire country as part of their normal duties and is usually produced at monthly intervals. Inaccurate notification and under-reporting is often encountered and incidence rates (new cases only) cannot be obtained. For example malnutrition is rarely reported on the outpatient encounter forms, sometimes because growth monitoring at clinics is not being done, or because a clear guideline for diagnosis of malnutrition has not been produced, or because reporting of malnutrition is not felt to be expected. This data however could provide some important information on trends.

There is a wide variety of forms and types of formats being used for registries amongst the different states, to report nutritional status of the different age groups within the population, and to report on the various NCD.

The different type of data relevant to Nutrition and NCD surveillance are collected in:

- Individual reports, such as the outpatient encounter forms, the inpatient discharge summaries, the birth and death certificates etc.

- Individual records such as: child growth monitoring record (white card) kept by the mother.

- Other records include: patients' files, and the yellow 844 form, which is also used in school health screening.

- <u>Registers</u> cover the following areas: prenatal attendance, family planning users, post-natal, child welfare, child immunization, daily work record, delivery log book, birth register, laboratory pathology register, overseas referrals and pharmaceutical orders.

- <u>Activity reports</u> are also available from the various hospital wards and service sections, as well as from Public Health divisions, and dispensaries. They focus on service delivery and provide monthly totals.

Without discussing their individual usefulness we make the following comments for consideration:

- Large amounts of written information for patient identification are written on individual forms such as encounter forms, adding to the staff's workload. The ultimate use of such individual information is very questionable from an epidemiologic standpoint and could be replaced by simple tally sheets providing immediately the total number of patients seen for selected diseases at the clinic, or for the services delivered.

- When patient identification is required for active follow-up (malnourished child, mother at risk, a poorly controlled diabetic) registries or card/tickler files focusing on these special groups would allow better monitoring and tracing of defaulters. At present, in Pohnpei and Chuuk states, virtually no patient follow-up activities seem to be conducted for malnutrition, diabetes or hypertension. The primary reason for this, for malnutrition, for example, is the lack of recognition of cases of moderate malnutrition and the very limited number of outreach activities performed by Health staff.

- Registers also provide a lot of information when detailed analysis is required at regular intervals.

b) Occasional data collection

Occasionally, specific studies can be performed providing detailed and representative information for the entire population (census) or on a portion of the population (sample surveys). The logistics and costs involved preclude the frequent organisation of large surveys. They provide reliable data on the proportion of the population with the disease(s) (prevalence) and with the risk factors at the time of the survey.

Surveys can be limited in size and scope to include only a small population sample (a few households) and limited questions or measurements. Surveys can be done by measuring indicators in the field on a population group, on a sample of records (such as the school health cards) or on registries (such as diabetes registries).

Sentinel surveillance is another way to collect information on a specific problem during a particular period of time based on a few health sites only which agreed to provide these special reports.

4.5.2   Other sectors

Import statistics, which are available annually, if in quantities not dollar value only, could provide extremely useful data on changes in "apparent" consumption of certain foods, and the use of tobacco and alcohol, over time.

4.6 Processing and analysis

Minimum routine processing should be done at clinic and dispensary level to manage diagnosed cases and monitor incidence(new cases). Health data is usually compiled on a monthly basis manually or using computers and involves significant staff time for report preparation.

Once these reports are sent no feedback is usually expected before the publication of annual reports much later on. Staff therefore cannot rely on timely feed-back based on the analysis of their data by officers at a more central level. They must have guidance on how to analyse and interpret the information they collect and look at a few key indicators for trends. For example, the number of underweight children seen that month can be plotted on a simple wall chart every month. If an abnormal number of cases of malnutrition is recorded then immediate action is required.

At state and national level, routine processing is done by the State Medical Records and/or the National Health Statistics unit. Providing timely feedback to users is the ultimate goal of these units. The current Health Information System of FSM is very complex with very different reporting forms and systems between states and programs. Following different routes some report directly to their national coordinator, some through Public Health, some through State Medical Records, some to National Health Statistics Unit, and some through the State Directors of Health.

It is recommended that all existing forms used in the Health sector, that senior state staff decide to continue to use, have attached an administrative directive describing purpose, users, and guidelines for use, etc. All health data should be copied to the State Directors and filed for easy reference.

The grant driven reporting requirements also create parallel information flows which are not meant for use in FSM, but for the funding agency. The multiplication of computer databases with very limited technical support generates other problems based on equipment failure and on staff limited ability to retrieve the information in the required formats. The miracle of computer-age may create frustration, and may actually result in less useful health information than previous manual systems.

4.7 Feedback to reporting sources

The first step is to tell the mother about the nutritional status of her child. She is the front line health educator. The overweight adult is the first person responsible for modifying his or her lifestyle and must be adequately informed.

Without feedback health staff feel that it makes no difference what they report and whether they report. Every individual reporting should receive feedback regularly. The FSM statistical newsletter is an excellent way to provide such feedback on various diseases and conditions under surveillance.

The longer the feedback takes the more likely the information will be received by the decision maker when it is too late or no longer relevant.

4.8 Response to surveillance information

Action should be initiated at the level at which the information is obtained, that is, where the numbers/data are analysed and converted into meaningful information. This, as discussed above starts at the clinic level for case management, or at the agriculture field officer level for food production activities. There must be clear guidelines for the action to be taken at this level, as well as guidelines for action to be taken at provincial and national levels, and in the non-government sector.

5. PROPOSED SURVEILLANCE METHODS TO ADDRESS THE MAJOR NUTRITION AND NCD PROBLEMS IN FSM

5.1 AREA 1: Undernutrition in children 0-5 years

Purposes:

- Watch malnutrition levels and how they are changing by village, municipality, island group, state and nationally;
- Growth monitoring of children at clinic and in the village;
- Improve children and mother's health through the provision of ongoing preventive services at well baby clinics.

Users:

- clinic staff, community groups, state and national MCH supervisors, National Food and Nutrition Commission and state Food and Nutrition councils;

Baseline information:

- Nutritional status from the National Nutrition Survey 1987-88

The 1988 report of medical statistics describes a total of 614 cases of malnutrition reported from outpatient visits. The National Nutrition Survey found a prevalence of undernutrition of 13.3 per 100 children 0-5 (new and old cases). In all states malnutrition problems do not become apparent until the 12-18 months age group.

The 1987-88 National Nutrition Survey (NNS) provides the baseline for the nutritional status of FSM children.

Two graphs from the NNS report depict the prevalence of malnutrition by age and state, are presented below. The first graph is "Weight for Age" which is used, routinely, or should be, in well baby clinics to assess the nutritional health of the under five-year-odds. It is important to remember that a low weight for age can be the result of present, and/ or past malnutrition. That is why the percentage of children with low weight for age tends to increase in the older age groups.

"Weight for height" is a measure of present nutritional status. It is not routinely collected because two measures need to be taken, both weight and height, and it can be difficult in the clinic setting to measure accurately the length or height of small children.

PREVALENCE OF MALNUTRITION • IN CHILDREN
AGED 0-4 YRS, FOR WEIGHT FOR AGE, BY STATE AND AGE GROUP
FSM NATIONAL NUTRITION SURVEY, 1987-88

Age Groups in Months

☐ 0-5	6-11	12-17	18-23
24-35	36-47	48-59	
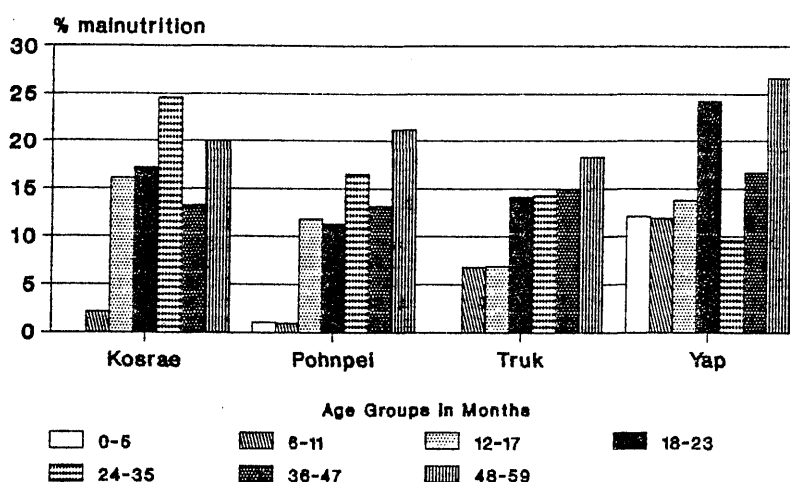
The Weight for height graph shows that the peak time for malnutrition is in the 12-24 month age group, and that is why it is so important that children continue to be weighed during the second year of life. In FSM it appears to be common for mothers not to bring their children to well baby clinic after the child has finished receiving its' immunizations.

Because weight for age can be the result of both past and present malnutrition, it is essential that health staff examine the shape of the child's growth curve, not just an individual weight, which can be misleading.

In these graphs, "% malnutrition" is defined as less than 80% of the median of the NCHS Standard, which is used world-wide.

PREVALENCE OF MALNUTRITION * IN CHILDREN FOR WEIGHT FOR HEIGHT, BY STATES AND AGE GROUP FSM NATIONAL NUTRITION SURVEY, 1988
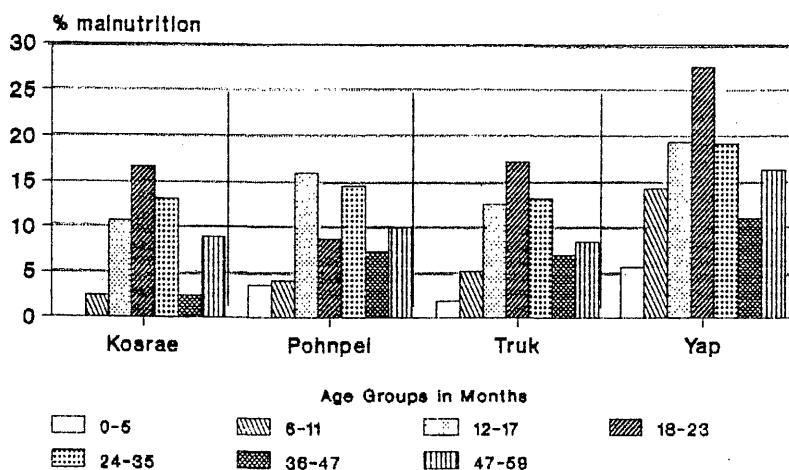
- In 1989 Low Birth Weight was estimated from state birth certificates as 8% (7 to 11% depending on the state). It is estimated that birth registration is 80-90% complete in FSM (Annex 5).

Indicators and method of collection:

- **Weight for age(W/A):**

This is the most widely used of all malnutrition indicators to assess individual and community nutritional status. If plotted regularly on the child's growth chart, it provides information on present and chronic malnutrition (that is of thin and short children). Most island countries (as well as the FSM NNS) use below 80% of the median of the WHO/NCHS standard as the cut-off point for moderate malnutrition, and less than 60% of the median for severely malnourished children. For grant reporting requirements it appears that the cut-off point in FSM should be based on the 5th percentile (that is lower than 5% of the reference population). This approximates 80% of the WHO/NCHS median. The NCHS/WHO tables are now the world wide accepted standards.

The current child growth monitoring chart used in the FSM has been checked against the NCHS data, since there was some concern that it was inaccurate after 24 months. The chart was found to be accurate except for the 60th month on the 5th and 50th

percentiles and for birth weight on the 25th percentile (see Annex 6). These small inaccuracies are not important and the chart is fine for both growth monitoring and surveillance purposes.

When the weight plotted on the child growth monitoring chart is below the lowest line the child is said to be malnourished. This case should then be recorded on the clinic's outpatient encounter forms or on monthly reports for well baby clinics that do not use the encounter forms. It is preferable that the well baby nursing team keep records of numbers seen each month above and below the 5th percentile. They are the ones who should have first access to this information.

- Coverage and proportion of children malnourished

    ■ The number of children weighed out of the under five population for that area, will give an idea of coverage and the level of outreach activity.

    ■ The number of children found with underweight that month divided by the total number of children weighed will provide an estimate of the proportion of children manourished (prevalence of undernutrition).

- **Low Birth weight (LBW):**

Low birth weight, below 5lb.8oz. (2.500 kg), is regarded as the most important determinant of infant mortality. It is also regarded as an indicator of past health and nutritional status of the mother during the pregnancy. In FSM birth weight is recorded on the birth certificate sent to the Health Statistics Unit. Incidence of Low Birth Weight, can be calculated with a correction for premature babies: LBW babies minus 10%, divided by total births. Similarly, it can be calculated by delivery staff from the birth log-book if all births and birth weights are routinely entered.

Other indicators that are not selected:

- **Height for age**

Height for age expressed in percentage of the WHO/NCHS reference population gives an indication of past and chronic malnutrition or stunting. This indicator is of particular interest at school entry for the monitoring of nutritional status in a community.

- **Weight for Height**

This indicator provides information on thinness (wasting) and gives a good indication on present nutritional status. This is nearly age independent between 1 and 10 years.

- **Mid-upper arm circumference (MUAC)**

This rough index of malnutrition is used for rapid screening of populations or when scales are not available. The arm circumference barely changes between 12-60 months. Using this measure, children are considered malnourished when MUAC is less than 12.5 cms.

- **Weight gain during pregnancy**

It is an important indicator of prenatal women's nutritional and general health status and a predictor of low birth weight.

Analysis:

- **Weight for Age**

Individual growth monitoring (weighing, plotting the weight, interpreting the growth curve explaining to the mother) is carried out by the health assistant, the public health nurse, or medical staff during MCH clinics or outpatient visits. At MCH clinics the number of children underweight and the number of children weighed should be recorded using a tally sheet for monthly compilations.

The proportion of children weighed over the target population and the proportion of children underweight should be analysed by the nurses using totals from their monthly reports. This should be checked and compiled at the state level and at the national level. Feedback should be provided at least quarterly to reporting centres.

- **Birth weight**

Birth weight is compiled at state and national level from birth certificates received by medical statistics and an annual analysis should be done. Delivery staff can also calculate the percentage of low birth weight babies from the birth log-book if properly kept.

Action:

If growth faltering (poor growth) occurs:

Clinic staff should counsel the mother, recording a child's poor growth in an"underweight children register"for ongoing follow-up at clinic and during home visits if necessary. In Kosrae and Yap, it appears that growth monitoring on those children who come to well baby clinics is occurring, as well as some degree of follow-up of those recognised not to be growing well. After a child is one year, regular weighing falls off rapidly. In the other two states, growth monitoring does not appear to be carried out routinely.

An MCH Coordinators' meeting is to be held during one week in May. This would be an ideal time to adopt the guideline at Annex 7, or something similar, for the recognition of malnutrition; as

well as to discuss suggestions made in the report for the routine
recording, analysis and feed-back on the proportion of children
underweight and the weighing coverage each month.

If there is an abnormal increase in malnutrition cases:

Calculation at the clinic level of the proportion of children
underweight will reveal if there is any abnormal increase in
malnutrition. Action will then be taken to immediately report to
state health authorities and investigate possible causes of the
increase (e.g. epidemics of diarrhoeal diseases, because of
sanitation problems).

The Community should be made aware of the importance of regular
attendance at clinics, and good nutrition practices. Where
appropriate, they should be encouraged to improve the
availability of foods for young children, especially of vitamin A
containing foods, such as green leafy vegetables, pawpaw, ripe
banana, mango and other locally grown fruits, through the
assistance of local agriculture extension staff.

State and national staff must plan services and deployment of
staff, giving priority to areas where malnutrition problems are
greatest. Following in service training on the use of the child
growth record and the use of guidelines for case definitions (to
be used in particular with encounter forms), an increase in
reported cases of malnutrition country wide, would be expected.
This will look like an "epidemic" until the reported cases slowly
stabilize towards the results of the NNS.

Needs:

(1) Equipment:

In good repair, regularly checked weighing scales. Infants can be
weighed on the pan balance scales, which appear to be available
at hospitals and dispensaries in all states, except Chuuk,
although a number of hanging type scales were provided through
the Peace Corps program. Toddlers will need to be weighed on
standing scales, not bathroom type scales, or on hanging scales
using a sling.

(2) Reporting system:

Include the number of children weighed, and the number found
underweight on revised public health monthly reports. A sample of
tally sheet is provided in Annex 7. The calculation of the
proportions must be done at dispensary level (using hand
calculators) although this might be left to the State officer in
some cases.

The suggested format for this monthly nutrition monitoring is as follows:

	Under 2 years	2-5 years	Total
Malnutrition (less than the 5th percentile			
Total number children weighed			

■ Ideally, there should be a section on the consolidated monthly report form for recording the number of group education and individual counseling activities, and whether they were held within the dispensary or within the community. It is important that encouragement and recognition be given to staff to engage in education and preventive activities. Recording these activities implies that they are valued by supervisory health staff.

(3) Hand made wall charts plotting each month the number of underwight children, are a very simple way to analyse this data and obtain on the spot a visual picture of the situation for malnutrition in the local area. Monthly feedback from the state or national level will take much longer to come, and will probably arrive when it is too late to take useful action. A sample wall chart, that can be made by nursing staff is suggested as follows:

A = Number of children malnourished, by month, health centre of.....................
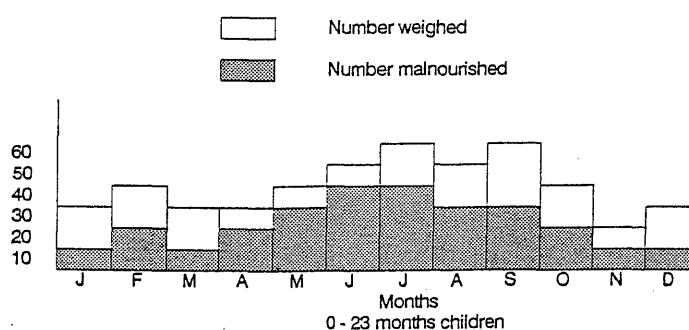
B = Percentage of malnourished children by month
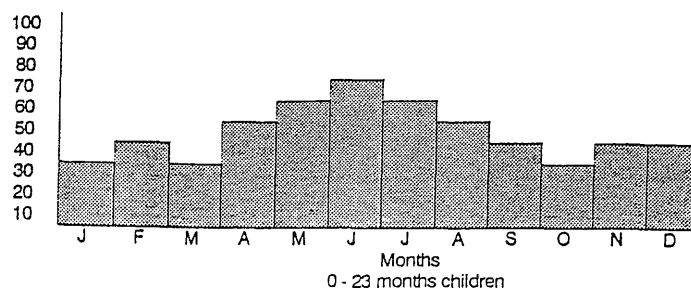
(4) Training of staff:

■ In weighing and plotting skills and to ensure that they are able to correctly interpret the growth curve, not just to be able to determine above and below the 5th percentile line. The focus of their activities should be on the vulnerable age group, 12 to 24 months, including well-nourished as well as poorly growing children.

■ In counseling skills and home follow-up is also important. Growth monitoring should be emphasised as part of the overall PHC approach, along with EPI, control of diarrhoeal diseases, etc. - - finally, training is needed in calculating the proportion of children weighed and underweight.

(5) Coordination:

■ Produce and distribute the definition for what is malnutrition for encounter forms and MCH guidelines.

■ Media campaigns, educational materials and regular visits to the community for growth monitoring and encouragement of good nutrition and home gardens improvement.

■ Plan State and national quarterly feedback to clinics.

■ Plan NNS follow-up prevalence surveys (reduced questionnaires) in 5-10 clusters every 1-2 years in different states, using the expertise of the state statistics units.

5.2 AREA 2: Reduction of overweight in adults

Purpose:

- Prevent diseases associated with overweight such as hypertension and heart diseases, diabetes and their complications.

- Monitor the national trends for overweight.

- Screen and follow-up overweight adults.

- Evaluate preventive programmes.

Users:

Clinic staff, obese people, community groups (sports' associations, women, youth), doctors, nutrition workers, health educators, disease control staff and health planners.

Baseline information:

The 1987-88 NNS found over 50% of FSM women 15-49 years overweight (BMI greater than 25), with 20 to 35% of women above BMI=30 (obesity) depending on the state and with a marked increase after 30 years of age. Data is anecdotal only for men.

Indicators and method of collection:

Weight for Height: **Body Mass Index (BMI)**

This is an indicator (which is calculated as weight in kilograms divided by height in centimeters squared (WT./HT squared) (see Annex 8). It provides a good assessment of body fatness in adults. Cut-off points vary in the literature and some research is yet needed to establish levels of overweight in relation to morbidity and mortality. In the Pacific, different cut-off points have been used in surveys. For simplification it is suggested that the following cut-off points be used for males and females (same as used in the FSM NNS).

underweight	less than 20
normal weight	21-24
overweight	25-29
obesity	greater or =30

In dispensaries, outpatient clinics and health centers, weight monitoring of adults should become a routine activity. BMI can be obtained easily from a reference chart (poster size) by plotting weight and height. The BMI value and weight on that day is then recorded on the patient card to monitor progress in weight reduction.

All individuals with BMI > 30 (obesity) should be further screened for hypertension and diabetes (urine test, or glucometer in high prevalence areas). These individuals can be referred to hypertension/diabetes clinics for such assessments.

Mass screening for overweight could be carried out during World Health Day, fairs and other appropriate events.

Small population surveys in municipalities, for adult overweight, hypertension, and diabetes should be planned now in all states (Kosrae and Chuuks are preparing for such surveys) to provide baseline data, monitor trends and raise the awareness of the public as well as the expertise of health professionals on these developing problems.

Reporting:

If the screening takes place in a clinic an outpatient encounter form is filed as usual for this person (Annex 14a). An NCD tally sheet has been designed. This is at Annex 14.b. It will allow easy compiling of overweight, hypertension, diabetes and gout cases for summarising onto the monthly activity report already prepared by most states. The present monthly activity report has no section for NCD activities. A section on NCD activity has been devised and is included in the form at Annex 14c. This report should be made available to State and National NCD Coordinators.

Analysis:

- Adult weight will be analysed by the nurse or the doctor. using an easy reference chart for weight for height - BMI chart - which makes it unnecessary to do any calculations, only plotting is required. Overweight cases should be referred for further investigations for diabetes and hypertension.

- Results of screening, annual statistics and surveys will be analysed by state and national statisticians, NCD Coordinators, nutrition workers and health educators.

Action:

- At clinic level the nurse and clinician will provide dietary advice (see Annex 9 for dietary advice) for weight reduction and refer the patient to a hypertension/diabetes clinic if BMI>30 with high blood pressure or suspected diabetes.

- Health educators should support weight reduction campaigns with the involvement of community groups. Municipalities must be encouraged to develop sports infrastructures such as walking and jogging tracks, basketball, softball, volleyball and tennis courts etc.

Needs:

- Equipment: scales (preferably balance rather than spring type), measuring rods, weight for height (BMI) wall charts.

- Develop FSM adult weight for height chart to be printed as a poster. Sample poster is found in Annex 8 together with instructions for using the chart.

- Training of health staff should be initiated for the management of overweight and NCD. New routine screening practices should be field tested in clinics.

5.3 AREA 3: Improved nutritional status of school children

Purpose:

- Monitor trends on school children's nutritional status. This focuses on under 10 year-old child growth.

- Prevent under and over-nutrition in school children.

- Long-term evaluation of the new school health curriculum.

Users:

Nurses, nutrition workers, teachers, health inspectors, education department staff.

<u>Baseline information</u>:

Several school health surveys have been conducted in past years. In 1986, a national survey found that 10% of girls and 5% of boys were overweight, and 7% girls and 9% boys underweight, based on a cut-off of 75% of a standard for weight for height. In 1991 in Kosrae almost the entire population of school children were assessed using a cut-off of 80% of a Filipino standard for weight for age. Underweight children were estimated at 15%, and overweight at 22%.

<u>Indicators and mode of collection</u>:

Weight for height

- Assess each child's nutritional status during regular annual school visits using the standard NCHS charts and later, on a revised school health card which incorporates weight for height charts - a separate one for boys and girls. The proposed charts are provided in Annexes 13a and 13b.

Food consumption

- Monitoring the quality of school lunches brought from home and the school lunch service(in states where it still exists)

<u>Analysis</u>

- Nurses and teachers will assess nutritional status of school children.

- State and national MCH staff analyse each school's results.

- Teachers could assess the change in nutritional quality of school lunches and school food service.

<u>Action</u>:

- Education and follow up of undernourished and overweight children by nurses and teachers.
- Implementation of the Teacher-Child-Parent Health curriculum.

<u>Needs</u>:

- Measuring rod and scales (accuracy checked) from clinics
- Obtain NCHS/WHO standard charts for weight for height (see Annex 13a, and 13b).
- Prepare and test a revised school health card with standard weight for height charts for boys and girls

5.4 AREA 4: Diabetes control and prevention of complications

Purpose:

- Prevent complications of diabetes such as ischemic heart diseases and other cardiovascular diseases, cataract and blindness, infections and amputations of limbs, kidney failure and neuropathies, through early detection and treatment of diabetic patients.

- Monitor the frequency of diabetes in the population to:

    ª plan health care services.
    ª and for long-term evaluation of preventive programmes.

Users:

Clinical staff, public health supervisors,health educators, nutrition workers, community groups and political leaders.

Baseline information:

No population based information is available in FSM on the extent of diabetes and its complications in the community. It can be expected that 10-25% of the adult population over 20 years of age would be diabetics - the level varying - depending on the level of obesity and urbanisation of the municipalities. Another 15-30% would have reached the stage of impaired glucose tolerance people with impaired glucose tolerance usually becomes confirmed diabetics within a few years, if no radical action is taken.

Some indication on the extent of this disease is provided by the outpatient clinics, inpatient discharge diagnosis and death certificates. Diabetes was found in 8% of the outpatient visits in FSM (1986-89) while other endocrine diseases represented another 1% (see Annex 1 and 2).

Endocrine and metabolic diseases were noted in 21% of discharge summaries from hospital in 1987-88. Complications of diabetes are often combined with hypertension complications and it is difficult to establish precisely the level of such complications and the related surgical procedures. Endocrine/metabolic and nutritional diseases were the third most common underlying cause of death at 15% from 1986-89, while a high number of cardiovascular deaths (39% of death certificates) may have been associated with diabetes (see Annex 3).

Indicators and methods of collection:

Diabetes Mellitus diagnosis: when the patient presents either a **fasting blood glucose** level over 140mg or a 2hour post OGTT (75g oral glucose tolerance test) level greater than 200mg as per standard WHO recommendations.

These tests can be done accurately by laboratories performing serum glucose analysis or by portable glucometers using strips (that often can be used for direct reading based on color

changes). Such tests are costly and currently average around $1 per test. Urine glucose strips or tablets are an important and cheap method of preliminary screening

The **screening for diabetes** should be done during:

- Outpatient clinics of hospitals (serum glucose and glucometers), health centers, prenatal and mobile clinics (glucometers) and dispensaries (urine testing).

- Mass screening cannot be recommended because of the cost factor, however individuals presenting a high risk (such as those with obesity, hypertension, urine glucose positive) should be tested during mass screening for overweight and hypertension or referred to the clinics.

- Surveys done in the communities (house to house) to obtain true prevalence data on the extent of the disease.

New cases picked-up in screening and surveys, should be referred to diabetes clinics where they will be registered for follow up, screened for other conditions such as overweight, hypertension and complications, and given proper treatment and counseling by clinicians, nutrition and health educators. A standard diabetes management chart used in Pohnpei and Yap is suggested in Annex 15.

High Birth Weight

High birth weight is an indicator of increased risk for impaired glucose tolerance (suggesting the mother is diabetic or a borderline diabetic). This data is already available on birth certificates and computerised. This will provide state and national figures. Mothers of heavy babies should be screened for diabetes before leaving hospital or very soon thereafter.

The current FSM, MCH report gives an indication of the number of births weighed and on children with low birth weight but not on high birth weight. There should be a column for high birth weight on the MCH report.

Reporting:

Screening activities should be reported with number of individuals screened and number of new and known cases found (already reported in some states).

For each new patient referred to the clinic a registration card should be filled to allow easy patient follow-up (diabetes registries exist in certain states). An outpatient encounter form is filed as usual for this outpatient as well as marking the NCD tally sheet in the appropriate place. The tally sheet has been designed and is at Annex 14.b. It will allow easy compiling of overweight, hypertension, diabetes and gout cases for summarising onto the monthly activity report already prepared by most states. The present monthly activity report has no section for NCD

activities. A section on NCD activity has been devised and is included on the form at Annex 14c. This report should be made available to State and National NCD Coordinators.

Special population surveys must be encouraged and planned carefully using a standard methodology throughout FSM.

Analysis:

Analysis of the patient blood glucose values is first done by the health staff who inform the patient on diabetes if he/she has this disease and decide on the appropriate follow-up and treatment.

A monthly report on activity figures is done by compiling the tally sheets (Annex 14b) by the state coordinator. This should be included under the monthly consolidated report of state public health services. A new section on NCD has been added to this monthly form (Annex 14c). This report must be circulated to all participating staff and sent to state directors and national coordinators.

Annual figures are then compiled and analysed for the entire country and sent back to state officials and health care providers.

Surveys are analysed separately and results must be widely distributed as well as major findings included in annual statistical reports.

Needs:

- Equipment: includes laboratory chemistry reagents, glucometers with a large supply of testing strips. This must be available in all outpatients departments. Dispensaries managed by health assistants should receive supplies of urine testing strips.

-   Staff must be made available and trained.

- Screening events and surveys should be organised by Public Health with the support of hospital staff.

- Special clinics for diabetes must be organised in outpatient departments (hospital, health centers or public health units) with the participation of medical staff (nurses and doctors) and public health staff (nutrition and health educators).

Action

Diabetes must be controlled to prevent dramatic complications of great social and economic impact. Weight reduction is the key to normalize blood glucose values (see Annex 10 for dietary advice). In practice unfortunately drug treatments are usually necessary to control overweight diabetics. They must be followed regularly and glucose levels monitored carefully by the patient himself or the clinic.

Clinics must include clinical and health education staff. Outreach activities are essential to contact patients, help them to control their glucose levels, through weight loss, good nutrition, taking medication if necessary. It is important to ensure that those who require medication are able to renew it without interruption.

As in other NCD a community effort is essential to support weight reduction programs, prevention of hypertension and close follow-up of patients.

5.5 AREA 5: Hypertension control, prevention of heart diseases and stroke

Purpose:

-   Prevent complications of high blood pressure such as stroke and ischemic heart diseases through early detection and treatment of cases.

-   Monitor the extent of hypertension in the population to evaluate preventive programs.

Users:

Health educators, nutrition workers, clinical staff, public health supervisors, community groups and politicians.

Baseline information:

No population based information is available on the extent of hypertension in the community.

Some indication on the extent of this disease is provided by the outpatient clinics, inpatient discharge diagnosis and death certificates. Hypertension was found in 6% of the outpatient visits in FSM (1986-89) while other circulatory diseases represented another 5%.

Hypertension was noted in 12% of discharge summaries from hospitals in 1987-88 while ischemic heart diseases represented 10%, cerebro-vascular diseases (stroke) 7% and other circulatory diseases 3% that is a total of one third (32%) of discharge diagnosis with a diagnosis of cardio-vascular disease. Cardiovascular diseases were the first underlying cause of death with 39% from 1986-89 (see Annexes 1a, 1b, 2, 3a, and 3b).

Indicators and methods of collection:

High Blood Pressure with either a systolic above 160 mm or a diastolic above 95 mm is the WHO standard while a systolic of 140 and diastolic of 90 are values for borderline high blood pressure. It must be measured when the person is at rest sitting for at least 5 minutes. When borderline values are obtained repeated measurements are necessary.

The **screening of hypertension** should be done during:

- Outpatient clinics at hospitals, health centers, mobile clinics and dispensaries.
- Mass screening organised during fairs or special events (World Health or Food Day) or when large gatherings of adults are available (pay day for government workers or pensions).
- Surveys done in the communities (house-to-house) to obtain true prevalence data on the extent of the disease.

New cases should be referred to hypertension clinics where they will be registered for follow up, screened for other conditions such as overweight or diabetes, and given proper treatment and counseling by clinicians, nutrition and health educators. A standard hypertension management chart for the FSM needs to be developed by FSM medical officers. Two WHO publications on hypertension management have been listed in the bibliography. These may be useful in designing the management chart. Annex 17 has been left free for the inclusion of this chart.

Reporting:

Screening activities should be reported with number screened and number of new and known cases found (already reported in some states). For each new patient referred to the clinic a registration card (Annex 18) should be filled to allow easy patient follow-up (hypertension registries exist in certain states). An outpatient encounter form is filed as usual for this outpatient (Annex 14a) and a NCD tally sheet has been designed. This is at Annex 14.b. It will allow easy compiling of overweight, hypertension, diabetes and gout cases for summarising onto the monthly activity report already prepared by most states. The present monthly activity report has no section for NCD activities. A section on NCD activity has been devised and is included in the form at Annex 14c. This report should be made available to State and National NCD Coordinators.

Analysis:

Analysis of the patient blood pressure values is first done by the health staff who decides on the appropriate follow-up and treatment.

A monthly report on activity figures is done by compiling the tally sheets by the NCD state coordinator. A summary should be included under the monthly consolidated report of state public health services together with information on other NCD such as diabetes, overweight and gout. A six-monthly NCD summary report should be compiled by state NCD Coordinators and circulated to all participating staff and sent to state directors and the National NCD Coordinator.

Annual figures are then compiled by the National NCD Coordinator and analysed for the entire country and sent back to state coordinators and directors and the National Food and Nutrition Commission.

Needs:

- Equipment is vital but often missing. It includes BP machines with normal and large cuffs, stethoscopes and the various forms mentioned above. These must be available in all health care units from outpatient clinics to dispensaries.

- Staff must be made available and trained.

- Screening events and surveys must be organised by Public Health with the support of hospital staff.

- Special clinics for hypertension must be organised in outpatient departments (hospital, health centers or public health units) with the participation of medical staff (nurses and doctors) and Public Health staff (nurses and health and nutrition educators).

Action

Hypertension is an area with great potential for action since in most cases weight reduction alone can normalise blood pressure value. Drug treatments are also a very good complement if followed regularly without large periods of interruption as is often the case.

To give greater chance of success, the screening efforts must be carried out several times a year to cover gradually all state municipalities starting with urban centers. Clinics must include clinical and education staff. Outreach activities should contact patients and renew their medication if needed, so that there is no interruption of treatment, as well as provide dietary counseling (see Annex 11 for dietary advice).

As in other NCD a community education is needed to support weight reduction programs, and encourage hypertensives to follow their treatment in order to prevent long-term complications.

5.6 AREA 6: Early detection and prevention of cancer

Purpose:

- Control the increase in cancer incidence by:

  ■ implementation of policies (for example tobacco advertising and sale, smoke free work places)
  ■ preventive programs (hepatitis B vaccination, anti-tobacco and alcohol campaigns, education)
  ■ screening (for example PAP smears)

Users: health educators, Public Health staff, legislature.
Baseline information:

A compilation of cancer cases in FSM was done in 1989 by Ms C. Conant, cancer registrar for the Pacific Island cancer registry managed by SPC in collaboration with the University of Southern

California Comprehensive Cancer Center and the Cancer Research Center of Hawaii. A preliminary review of cancer cases (pending histo-pathological confirmation) from deaths certificates and discharge diagnosis was done during this consultancy on 1986-90 FSM data and detailed results are presented in Annex 4.

- Lung cancer is by far the most important cancer in FSM, accounting for at least 25% of all cancer cases (27% in men and 15% in women).
- Liver cancer is the second with 11% (18% in men, 5% in women)
- Cervical invasive cancer is the most common cancer amongst women at 19% (excluding in-situ cases) while female breast cancer accounts for 10% and cancer of the uterus: 5%, of all cancers in women.
- Leukemias and lymphomas represent 10% of all cancers.
- Thyroid cancer represents over 5% of cancers amongst women.

Indicators and method of collection:

New cases of primary malignant carcinomas should be collected in a national cancer registry to provide regular information on the extent of the different cancers in FSM, present trends and distribution by age group, sex and area. Because the new cases of cancer are relatively rare events (1-2 per thousand population every year), state level registries would not allow meaningful comparisons from one year to the next. State figures should be analysed over periods of at least 5 years.

Initial information should be collected from:
- in-patient discharge diagnosis and
- death certificates coded in ICD-9 from 140-208 and 235-239 (excluding benign and in-situ tumors).
- Laboratory reports establishing cancer from tissue samples sent overseas for histopathology (mainly at Tripler hospital, Hawaii) should be copied to the national registry. This only represents 1-4 reports per month for the hospital laboratories.
- Registers for overseas case referrals must be regularly checked.

All suspects should be entered in an alphabetical card index while a cancer registration form (see Annex 20) should be prepared for confirmed cases with the initial information from the diagnosing hospital and completed by the medical records section.

Standard coding for site/topography and histology/morphology must be done in ICD-Oncology (a manual was provided to Health Statistics). Because of the very technical nature of the diagnosis and coding, periodic verification of cases (every 1-2 years) by a professional cancer registrar is recommended.
Analysis:

- Cancer forms are computerised by the National Statistics using the CANREG package for cancer registration produced by the International Agency for Research on Cancer of WHO. This package was installed and customised for FSM during this consultancy.

- Cancer incidence rates adjusted for the world population can be produced by this program. Further analysis is possible through an easy interface with Epiinfo 5 (WHO/CDC). Annual figures and trends can then be produced.

- It is important to compare these results with the current status of preventive programs and state policies for tobacco smoking and alcohol consumption reduction, hepatitis B immunisation, cervical cancer screening (PAP smears), breast cancer screening and nutrition improvement .

Action:

- Distribute widely this information to State and National health workers and legislatures.

- Promote new policies in FSM for Tobacco smoking restrictions in public places and in the workplace, ban tobacco advertising; ban competitions which promote the sale of cigarettes and offer expensive prizes;

- Support preventive programs for hepatitis B immunisation (to protect against liver cancer), the screening for early stages of cancers in particular for breast and cervical cancer.

- A number of cancers have a proven relationship with poor dietary habits. Therefore promotion of good nutrition activities should be encouraged, with emphasis on increased consumption of green leafy vegetables and red-orange coloured fruits and vegetables such as pawpaw, mango and pumpkin.

Needs:

- Raise awareness of medical staff especially to set-up routine screening activities for early treatment.

- Create a National Cancer Registry following standard guidelines (provided by SPC) and obtain full cooperation from the state directors and laboratory chiefs.

- Reinforce public health cancer prevention programs and propose new bills to the senates

5.7 AREA 7: Reduction in the use of tobacco, alcohol abuse and the consumption of certain imported foods

Purposes:

- monitor changes in the use of tobacco and consumption of alcohol
- monitor changes in the consumption of sugar, fatty meats, rice, flour and ramen
- to produce indicators for behavioural risk factors for NCDs in the population.

Users:

- nutrition workers and health educators, nurses, teachers, political leaders and legislators

Baseline information:

Consumption of sugar, fatty meats, rice, flour and ramen

- Frequency of eating these foods each day is available in the Technical Report of the 1987-88 NNS.

- Import data for the last few years at least is available from State and National Statistics Departments, except for fatty meats. However, it is in dollar value, not in quantity or volume and would be difficult to convert to these units.

- The 1988 Household Expenditure Survey ?? should have some useful data??

Use of tobacco and alcohol:

- A "Youth Risk Behaviour Survey", including information on tobacco, alcohol and other drug usage, is being carried out in the FSM on teen-agers, by the Mental Health Section, and should yield useful baseline data for use in evaluating health education programs, as well as information needed to design health education target groups and messages.

- Import data at state and national level on alcohol and tobacco is collected annually and is available through state and national planning and statistics departments, but the same problem exists as for the food items mentioned above, the data is in dollar value and would be difficult to convert to volume or weight value.

Indicators and methods of collection and analysis:

Behavioural risk factors

These include dietary consumption practices, such as sugar and fat consumption, and also other factors such as alcohol and tobacco use, which can contribute to the various NCDs. These risk factors can be collected through import data, through dietary surveys and through Knowledge, Attitudes, Practices and

Behaviours (KAPB) surveys. These surveys do not have to be very complex. If prepared carefully they are very useful tools to focus and pre-test messages and campaigns. The KAPB surveys can also be used to monitor trends and the impact of educational activities.

- **Per head "apparent consumption" of alcohol (in grams)** by state and nationally

- **Per head "apparent use" of tobacco** (number of cigarettes smoked per day)

- **Per head "apparent consumption" of sugar** (in pounds per year, teaspoons per day), **soft drinks** (number per year, week and day), **rice, ramen, flour and fatty meats** (pounds per year, week and day)

Note that:

* "apparent consumption" is an estimate of actual consumption, based on what is imported, and assumes that it all gets consumed and there is no wastage.

* "sugar" here refers to sugar from a packet, not concealed sugar as consumed in a multitude of processed products.

* soft drinks provide between 8-10 teaspoons of sugar per can. Each teaspoon is equivalent to about 5 grams. So it would be possible to calculate how much sugar people consume on average through drinking soft drinks.

* "fatty meats": types of meats to include here would have to be specified clearly, so that they could be identified by customs/revenue and statistics officers.

- **Actual consumption of sugar** by particular groups, such as diabetics and schoolchildren, or public servants.

The **short dietary questionnaire** for these small, simple, occasional surveys could be designed by the national nutritionist and carried out by nurses in the case of diabetics and public servants, and teachers in the case of children. The expertise of state statistics units could be used to perform the simple analysis required. They could be administered at a mass NCD screening exercise on World Food Day, World Health Day, or other times at which screening has been suggested, for example at post offices on pension day.

- Additionally, schoolchildren could be given a simple **24 hour dietary recall questionnaire**, designed by the national nutritionist, to take home and complete with the assistance of their parents. Guidelines for the teachers should be drawn-up to help them look at the completed questionnaires, make some tabulations on consumption of fruit, vegetable, rice, sugar etc. to discuss with the children, and preferably also with the parents at a teachers' and parents'

night. This could easily be incorporated into the draft Health TCP(Teacher-Child-Parent) curriculum now being finalised.

- **Number and types of advertising on the radio** for soft drinks and other "junk food", alcohol and tobacco, collected by health educators.

A protocol for doing this would need to be developed. Issues to consider include: how often the survey of ads should be done, time length of the ads, time of day the ads are on, who is targeted, ethics of the ad etc. After the ads have been monitored for a reasonable length of time NCD Health workers may decide that some recommendations on the advertising of products affecting NCD should be made to politicians through National Food and Nutrition Comission.

Action:

- **Education:** Per head consumption use of tobacco and alcohol and per head consumption of the various food items mentioned, should be used widely in media education programs, community education programs and in the schools and in individual patient counseling, to raise awareness of the extent of the risk behaviours and the need to reduce consumption.

    This information would have a variety of users, for example, nurses, nutrition workers and health educators and teachers. So it is essential that it be made widely available to the public and the users already mentioned, perhaps through Information Offices.

Policy and Legislation:

- This information in a summarised form should be made available to political leaders and law-makers, who may decide to tax more heavily certain imports, and importantly, to use the extra tax for education to reduce the consumption of the particular food, or use of the drug. For example, in the case of tobacco, if extra tax is put on it, this should be used for anti-smoking education.

Needs:

- **Routinely collected information: is urgently required on the quantity of imports of tobacco, alcohol(as beer and spirits), sugar, soft drinks, fatty meats, rice, ramen and flour.**

    This information would be extremely useful in providing indicators for several of the risk factors for NCD. For example, the per head usage by state of tobacco, alcohol and sugar intake. Changes in these indicators is needed to monitor the effectiveness or otherwise of health promotion activities.

The value of food imports is approximately 15% of the total value of imports into Yap(Yap State Statistical Bulletin, 1988), and approximately 30% of the total value of all imports into Kosrae in 1990 and 1991(Kosrae State Office of Budget and Planning). Balance of payment deficits for the states are huge, and tobacco, food and beverage imports are a significant contributor to this. Hence in the long-term food security, and hence the nutritional health of the population, is an important concern, with states needing to become more food self-sufficient, and/or increase their export earnings to be able to pay for rising state food bills.

This should be a compelling argument for the need to have available in **quantity values** the imports of the above mentioned foods, so that not only NCD risk factors can be monitored, but also progress on import substitution.

- For revenue officers to complete the quantity information section on the "Entry Certificate - Import Tax Assessment - Payment receipt" and pass this information onto State Statistics, Departments, a directive from the Secretary for Finance in the National Government is needed.

- The development of short questionnaires on sugar consumption and a simple 24 hour dietary recall questionnaire by the National Nutritionist with assistance from the National Health Statistician to ensure that they are simple enough to analyse manually.

- Incorporation of these short dietary questionnaires and guidelines for teachers into the Draft TCP Health curriculum.

5.8 AREA 8: Promotion of local food production and consumption

Purpose:

- Assess the effectiveness of programmes aiming to increase urban dwellers' consumption of local foods.

- Assess the effectiveness of agricultural projects aimed at import substitution, that is, reducing the imports of food items, such as fruit and vegetables, and fresh meat and eggs, that could be produced in-country, but are presently being imported, or supplemented with imports.

- Decrease the consumption of certain imported foods, through programmes using media, group discussions, school curricula(TCP,Teacher-child-parent approach).

- Assess effectiveness of food production projects including home gardens, and activities to increase the sale of local foods at restaurants and take-outs, and at markets.

<u>Users:</u>

Agricultural extension workers, and their supervisors, Directors of Agriculture, Planners, nutrition workers, health educators, school curriculum implementers and designers, and legislators (for importing, advertising and pricing controls).

<u>Baseline information:</u>

- information on the frequency of consumption of various local foods, by state, is available from the 1987-8 NNS.

- National "Household Expenditure Survey" 1988

- Quarterly food import data

<u>Indicators and method of collection:</u>

- **Consumption of certain selected imported foods** from routinely collected import statistics. As mentioned in Area 7, these need to be in quantity value, not dollar value.

- **Export of fresh fruits**, vegetables and root crops from Air Micronesia invoice data and Statistics departments. An agricultural officer would need to be delegated to regularly collect this data, perhaps, three monthly.

- Biweekly or monthly town **market price surveys** for selected foods: rootcrops, cooking bananas, certain green leafy vegetables and fruits. Consult with MRD on their experience with fish market surveys.

- Continue with the recording by agricultural extension workers of **funeral contributions** (expand the scope of the recording).

- **Estimates of land area used for food crops** in each municipality annually by agricultural extension workers.

- Surveys of **sales of locally grown foods**, snacks or meals from food outlets (Health inspectors, FFNP staff).

- **Proportion of a family's food that is home produce** (small occasional survey once a year).

- **Number of people with** home gardens (mwetwel en Peneinei) and participating in home garden demonstrations.(FFNP garden coordinator), and the number of home food gardens in selected sample communities(3-4 kousahpw per municipality)

- **Proportion of food at institutions** such as, Prison, hospital, CCN, PATS, **that is produced by the institution**, and/or that is produced locally, not imported. An example of a possible indicator of this could be the number of meals out of the total number each week that contain a local staple - is this increasing or decreasing over time?

Analysis:

Each officer from the various government and non-government sector named as responsible for collecting the indicators to provide this data to a senior National Agriculture officer quarterly, for synthesis and distribution/feed-back to all sectors who collected the information and to the National Food and Nutrition Commission(NFNC).

Action:

Consideration of all indicators 6 months by NFNC and discussion about which area(s) needs improvement.

Needs:

- Clear delegation of responsibility for collecting the above indicators to each sector

- Development of guidelines/protocols for the collection of each indicator.

- As for area 7, a directive from the Chief of the National Finance Department to the Revenue and Customs Department that for the food items specified and tobacco and alcohol, quantity and volume data must be collected and passed to Statistics Departments.

Note: Before implementation of this component of the surveillance system there needs to be further consultation amongst Agriculture, Statistics and Planning, and Revenue sectors.

6. PLANNING THE IMPLEMENTATION OF SURVEILLANCE ACTIVITIES

6.1 State implementation

The key to the success of Nutrition and NCD surveillance in FSM is the **standardisation of diagnosis criteria, forms, reporting, treatment guidelines, nutrition and health education and legislation** in the 4 states.

Main issues to address:

1. One of the first goals of Food, Nutrition and NCD surveillance is to raise the awareness of Health, Education, Agriculture and Finance and Planning, politicians and officials on the seriousness of these problems.

2. NCD coordinators do not exist in the states. They are needed if the surveillance programme is to work.

3. Baseline information of the extent of NCD in the population is usually lacking in the states. Some small surveys are needed.

4. At young children clinics (well baby clinics) emphasis has often been placed on immunisation only. Weight is often not recorded during the visit. Surveillance requires outreach activities rather than hospital based MCH clinics.

5. **Simple recording** using tally sheets is the basis for surveillance. A consolidated monthly report of all public health activities should be prepared for all activities and used by each state.

6. Equipment: States need to check their scales for accuracy, both baby scales and adults scales (some new sets may be needed), and ensure blood pressure machines are in working order with small and large cuffs, and that there are sufficient glucometers.

7. Health activities are very hospital-oriented. Hospital outpatient/specialised clinics should be reserved for difficult cases, while routine screening should be done during out reach activities.

8. States have different infrastructures and so will need to use their own local resources for NCD to best advantage, for example, Chuuk Aging Programme provides a network of 18 staff mostly based in outer-islands and providing regular support to the elderly (treatment etc.). Such a programme would provide an excellent network for NCD control and prevention.

9. The PAP smear programme done through Family Planning should be reviewed since in several cases when a case of cancer lesion was screened, no follow-up action was taken. Positive results should be shared with the cancer registry.

10. Laboratories should seek cheap sources of glucose testing strips and glucometers since potentially between 150-200,000 strips could be used per year in FSM for screening and patient management.

11. Pathology in FSM is becoming important for timely diagnosis and management of various cancers. Chuuk laboratory is already equipped and could centralise pathological testing for FSM.

12. A large number of micro-computers are already available in Health Departments. Data entry takes up time for staff, often taking them away from field activities. Little output from the computers is obtained or analysed. A computer professional should be used by Health Departments. A UN or peacecorps volunteer with computer expertise would help staff make better use of their time.

6.2 National Coordination

As has been seen in previous sections of this report Nutrition and NCD surveillance systems have many components, with each component often involving several sectors in the monitoring of a given nutrition or NCD problem. Surveillance systems take time

and effort to develop and may need to be "re-tuned" from time to time in order to run effectively. Since people involved in running the surveillance systems have many other work commitments that require their time and resources, surveillance systems need to be developed that can be sustained.

Therefore, it is best to start cautiously, taking a few components only and trialing them for at least three months before trying to implement the system state-wide or nationally. With respect to the eight surveillance areas, we suggest selecting and implementing some only of the recommended activities on a trial basis in 1992. A time frame is suggested below including in parenthesis the implementing division/staff/agency.

1. Overall coordination

The overall coordination of nutrition and chronic - Non Communicable Diseases surveillance is critical at national and state levels. The management of the complex and large-scale NCD epidemic resulting in at least 150 deaths per year, needs a well-coordinated programme.

Therefore, we strongly recommend:

* **The recruitment of National and State coordinators for NCD.**

The main work of these coordinators will be to:

- Coordinate the collection, analysis, feedback and action on surveillance indicators, ensuring the surveillance cycle works and timely action at all levels is taken.

- Foster initiatives for prevention of NCD (for example policies on food production and control of certain imports, anti-smoking measures etc.) by liaising with health staff (MCH, Health Education, Nutrition, Medical Statistics, Public Health) Agriculture, Education, Statistics, Customs, the media and the National Food and Nutrition Commission.

2. Coordination of each area

Responsibility for data collection, analysis, feedback and ensuring appropriate action is being taken for each of these eight areas could be:

- State and National MCH supervisors for area 1 (malnutrition in children 0-5) and area 3 (school children)

- State and National Public health/NCD coordinators for area 2 (overweight), area 4 (diabetes) and area 5 (hypertension)

- The National Health Statistician for area 6 (cancer registration)

- State and National Finance and Planning Office for area 7 (food, alcohol and tobacco imports)

- State and National Agriculture Departments for area 8 (food production)

6.3 Proposed implementation plan and timeline

April 1992

i)   Initial consultations on NCD and nutritional surveillance in the 4 states (National Nutrition Coordinator, Health Statistician, SPC consultants)

ii)   Draft report prepared and discussed with National Health staff and Health, Agriculture, Education sectors staff, Pohnpei state (SPC consultants)

Late May

i)   MCH state coordinators conference should review areas, 1, 2, 3 and develop a plan for implementing this in their state, and add malnutrition section to the new consolidated MCH form.

ii)   Prepare draft wall chart (poster) for weight monitoring of adults based on Body mass Index standard values (SPC-FSM).

June 1992

i)   Late June final report received (from SPC).

ii)   Multiple copies made of the report and distributed to all relevant staff at state and national level in Health, Education, Agriculture and Finance and Planning (National Nutrition Coordinator).

July-August 1992

i)   Report and preliminary implementation plan discussed and 1992 activities endorsed by appropriate departments (Human Resources, States, Public Health, hospitals), Agriculture, Education, Finance and Planning sectors and National Food and Nutrition Commission.

ii)   Send to all states revised monthly consolidated MCH form (National MCH Supervisor).

iii)   Satisticians and Hospital administrative meeting review and plan their implementation of areas 2,4,5 and 6.

iv)   Provide a briefing on Nutrition and NCD surveillance project and outline the implementation plan at the PIHOA/directors meeting (Nutrition and Health Statistics).

v)   Appoint a national and state NCD coordinators providing them with an appropriate job statement.

vi) Develop a system for routine recording of <u>quantities</u> of imports of tobacco, alcohol, sugar, soft drinks, rice, ramen and "fattymeats" (Customs, Finance and Planning, SPC Statistician).

vii) Send to Public Health Supervisor in all states the diabetes and hypertension register forms, management protocols and NCD tally sheet (Nutrition or National NCD Coordinator). The Public Health Supervisors must liaise with the doctors to ensure these forms and protocols and the tally are used.

viii) Develop and test sugar, fruit, green leafy vegetable dietary recall for use in the pilot TCP schools (Nutrition Coordinator).

ix) Include the NCHS weight for height charts in the TCP curriculum (Nutrition Coordinator) and in school health screening activities (Nutrition Coordinator, Public Health Supervisors).

x) Include nutrition surveillance data review at every meeting of the National Food and Nutrition Commission (NFNC).

xi) Analyse 1990 birth weight data (Health Statistics)

xii) Start regular market surveys in Pohnpei, proportion of local food eaten at institution and sales of locally grown food at take-outs (Agriculture).

October-December 1992

i) Produce morbidity and mortality data on nutrition related conditions (Health Statistics).

ii) Evaluate progress of child growth monitoring in different states (MCH Supervisor, SPC).

iii) Review all nutrition surveillance data collected in 1991 (SPC).

iv) Expand the surveillance system to include more Agricultural indices (Agriculture, Nutrition Coordinator, SPC).

v) Prepare final plan for nutrition surveillance (Human Resources, SPC).

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ANNEXES

NCD OR NCD—RELATED OUT—PATIENT VISITS
BY STATE IN 1990

Diseases	FSM		Chuuk		Kosrae		Pohnpei		Yap	
	No	%	No	%	No	%	No	%	No	%
Diabetes	2030	3	738	2	772	6	433	2	87	1
Asthma	1564	2	1075	3	198	2	0	0	291	3
Other circulation	1464	2	368	1	408	3	438	3	250	2
Hypertension	1946	3	667	2	374	3	905	5	0	0
Malnutrition	281	0	165	0	17	0	98	1	1	0
Arthritis/gout	269	0	26	0	243	2	0	0	0	0
Endocrine	54	0	34	0	0	0	0	0	20	0
Transport	21	0	21	0	0	0	0	0	0	0
Malignant	16	0	12	0	3	0	0	0	1	0
Cerebrovascular	9	0	9	0	0	0	0	0	0	0
Others	68319	90	32202	91	10773	84	15467	89	9877	94
Total	75973	100	35317	100	12788	100	17341	100	10527	100

Note: No differentiation is possible between acute and chronic pulmonary disease (COPD) or digestive diseases.

Source: Digest of Health Statistics, data is based on 1990 OPD encounter forms

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ANNEX 1a

NCD OR NCD−RELATED OUT−PATIENT VISITS
1986−1989, FSM

Diseases	1986	1987	1988	1989	Total	%
Other respiratory	13692	9229	10863	10367	44151	14
Asthma	4578	2834	2649	1564	11625	4
Injuries	4261	4219	26	21	8527	3
Diabetes	1367	1700	1765	2030	6862	2
Arthritis/gout	1264	1250	599	269	3382	1
Circulatory diseases	1117	1124	1013	1464	4718	1
Hypertension	1006	974	1711	1946	5637	2
Cerebrovascular	219	23	16	9	267	0
Malnutrition	656	312	614	281	1863	1
Endocrine	507	106	76	54	743	0
Neoplasm	52	70	19	16	157	0
Others	86361	88558	0	57952	232871	73
Grand total	115080	88558	80302	75973	320803	100

Source: Digest of Health statistics

SELECTED HOSPITAL DISCHARGES
RELATED TO NCD BY STATE, 1988

Diseases	FSM total		Chuuk		Kosrae		Pohnpei		Yap	
	No	%	No	%	No	%	No	%	No	%
Cancers	87	1	46	1	5	0	29	1	7	1
Endocrine/metabolic	140	1	49	1	24	2	59	1	8	1
Nutritional deficiency	97	1	73	2	1	0	18	0	5	0
Anaemia	60	1	21	0	6	1	24	1	9	1
Hypertension	81	1	29	1	9	1	43	1	0	0
Heart disease	54	0	12	0	7	1	33	1	2	0
Other circulation	15	0	4	0	3	0	6	0	2	0
Pulmonary and other heart	90	1	44	1	11	1	23	0	12	1
Cerebrovascular diseases	66	1	28	1	5	0	23	0	10	1
Transport acc.	70	1	13	0	2	0	39	1	16	1
Other	10595	93	3898	92	1083	94	4443	94	1171	94
Total	11355	100	4217	100	1156	100	4740	100	1242	100

Note: Number of cases are included under groupings such as upper—respiratory or other digestive but cannot be retrieved for this table. A list of NCD
with ICD—9 selection criteria is proposed in Annex 4.

Source: FSM digest of Health Statistics 1991.

CONTRIBUTION TO DEATH OF VARIOUS NCD
IN FSM BY STATE, 1988

Diseases	FSM %	Chuuk %	Kosrae %	Pohnpei %	Yap %
Cancers	5	5	0	6	0
Endocrine/metabolic	1	1	0	0	0
Nutrition	3	3	0	2	0
Circulatory system	18	19	25	16	29
Hypertension	0	1	0	0	0
Isch. heart disease	7	7	13	8	8
Acute myocardial infarct.	5	4	13	6	4
Cerebrovascular diseases	5	4	0	7	8
Chronic liver diseases	3	4	6	3	0
Accidents/MVA	1	1	0	1	0
Other	52	53	44	52	50
Total	100	100	100	100	100

Source: Death certificates analysis

LEADING CAUSES OF DEATH
IN FSM — 1988

Diseases	Underlying		Others		Total	
	No	%	No	%	No	%
Circulatory system	90	31	66	33	156	32
Respiratory system	74	25	45	23	119	25
Cancer	31	11	1	1	32	7
Endocrine/nutrition	18	6	35	18	53	11
Digestive system	17	6	12	6	29	6
Other	65	22	40	20	95	20
Total	295	100	199	100	484	100

Source: Digest of Health Statistics.

CANCER PATTERNS IN FSM - 1980-1990

DIAGNOSIS OF CANCER RECORDED ON INPATIENTS DISCHARGE SUMMARIES, DEATH CERTIFICATES FOR 1986-90(1) AND CONFIRMED CASES REGISTERED FOR 1980-88(2).

SITE	IN-PATIENTS 86-90		DEATHS 86-90		CONFIRMED CASES 80-88			
					Males		Females	
	Freq	Percent	Freq	Percent	Freq	AAIRate[3]	Freq	AAIRate[3]
140-9-MOUTH, PHARYNX	18	4.1%	6	3.6%	13	7.1%	8	3.7%
150-OESOPHAGUS	5	1.1%	3	1.8%	2	1.2%	0	0.0%
151-STOMACH	10	2.3%	2	1.2%	6	3.4%	3	1.5%
152-SMALL INTESTINE	1	0.2%	0	0%	3	1.3%	2	1.1%
153-COLON	1	0.2%	1	0.6%	5	2.4%	4	2.2%
154-RECTUM	1	0.2%	0	0.0%	1	0.6%	0	0.0%
155-LIVER	29	6.6%	16	9.6%	35	18.5%	10	5.0%
156-OTHER DIGESTIVE	2	0.5%	2	1.2%	4	2.3%	4	1.9%
161-LARYNX	2	0.5%	2	1.2%	0	0.0%	0	0.0%
162-BRONCHUS, LUNG	72	16.5%	56	33.5%	54	29.7%	31	18.1%
163-PLEURA	5	1.1%	1	0.6%	0	0.0%	0	0.0%
164-OTHER THORACIC O	1	0.2%	0	0.0%	0	0.0%	0	0.0%
170-BONE	14	3.2%	2	1.2%	5	1.4%	4	1.3%
171-CONNECTIVE TISSU	15	3.4%	1	0.6%	4	2.1%	5	2.6%
172-MELANOMA OF SKIN	3	0.7%	1	0.6%	1	0.6%	0	0.0%
173-OTHER SKIN	8	1.8%	0	0.0%	1	0.6%	1	0.6%
174-FEMALE BREAST	22	5.0%	9	5.4%	0	0.0%	20	10.8%
179-UTERUS	6	1.4%	1	0.6%	0	0.0%	7	3.1%
180-CERVIX UTERI	24	5.5%	10	6.0%	0	0.0%	39	20.6%
181-PLACENTA	1	0.2%	0	0.0%	0	0.0%	4	2.3%
182-CORPUS UTERI	4	0.9%	0	0.0%	0	0.0%	2	1.1%
183-OVARY ETC.	2	0.5%	0	0.0%	0	0.0%	0	0.0%
184-OTHER FEMALE GEN	3	0.7%	0	9.6%	0	0.0%	0	0.0%
185-PROSTATE	10	2.3%	0	0.0%	5	2.9%	0	0.0%
186-7-OTHER MALE GEN	2	0.5%	0	0.0%	1	0.4%	0	0.0%
188-BLADDER	7	1.6%	1	0.6%	5	2.8%	1	0.6%
189-KIDNEY	2	0.5%	2	1.2%	1	0.2%	3	1.3%
190-EYE	1	0.2%	0	0.0%	0	0.0%	0	0.0%
191-2-BRAIN,NERVOUS	5	1.1%	3	1.8%	5	1.9%	3	1.4%
193-THYROID	10	2.3%	1	0.6%	1	0.3%	11	5.5%
194-OTHER ENDOCRINE	2	0.5%	0	0.0%	0	0.0%	0	0.0%
200-LYMPHOSARCOMA, E	3	0.7%	1	0.6%	0	0.0%	0	0.0%
201-HODGKIN'S DISEAS	4	0.9%	1	0.6%	6	3.0%	1	0.2%
202-OTHER RETICULOSE	9	2.1%	1	0.6%	4	2.2%	5	2.3%
203-MULTIPLE MYELOMA	2	0.5%	0	0.0%	14	4.1%	12	3.7%
204-LYMPHOID LEUKAEM	13	3.0%	6	3.6%	0	0.0%	0	0.0%
205-MYELOID LEUKAEMI	2	0.5%	3	1.8%	0	0.0%	0	0.0%
207-OTHER LEUKAEMIA	4	0.9%	1	0.6%	0	0.0%	0	0.0%
208-LEUKAEMIA,UNSPEC	14	3.2%	4	2.4%	0	0.0%	0	0.0%
235-9-UNSPEC. NEOPLA	68	15.6%	21	12.6%	0	0.0%	0	0.0%
999-PRIMARY SITE UNK	30	6.9%	9	5.4%	23	12.2%	20	10.3%
Total	437	100.0%	167	100%	200	101	202	102

(1) ONLY MALIGNANT CARCINOMAS ARE INCLUDED FOR ICD-9 CODES 140-208 and 235-239. metastatic sites may be included since Histology and behavior codes are not includ the reports. IN SITU AND BENIGN CASES ARE EXCLUDED. The number of cases confirm histopathology is not known.

(2) Cases registered for the SPC Pacific Islands Cancer Registry by Ms C.Conant in 1989.

(3) AAIR: Age Adjusted Incidence Rate

LIVE BIRTH (LB) REGISTERED WITH
LOW BIRTH WEIGHT (LBW) 1989

	FSM	Chuuk	Kosrae	Pohnpei	Yap
Livebirth	2250	1047	190	1049	264
% weighted	82%	70%	95%	88%	96%
% LBW (1)	9.7%	9.5%	7.7%	9.6%	11.8%
% LBW estimated (2)	8.7%	8.5%	7.1%	8.6%	10.6%

(1) < 2500
(2) Number of children LBW − 10% for premature babies.

Note: birth certificate completion is estimated about 75–90% depending on the state.
Source: FSM Digest of Health Statistics 1990.

THE PATH TO GOOD CHILD HEALTH

Use this chart to see if your child is growing well. The chart shows the weight and age of your child. The long curved lines across the chart show where the weight of a healthy child should be. The marks showing the weight of your child should be between these lines. These marks can be joined to make a line showing your child's growth on the path to good health.

Bring this chart with you to the dispensary or clinic. Your child will be weighed and the mark showing the weight will be put on this chart. The marks will be joined to make a line which will show if your child is growing well or not.
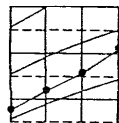
If the marks showing your child's weight make a line going up, this is good. It means your child is growing well. Your child is being well fed.
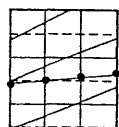
If the marks showing your child's weight make a straight line, this is not good. It means your child is not growing well. Your child needs better food. Your child should be weighed at least once every two weeks until the line goes up again.
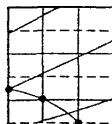
If the marks showing your child's weight make a line going down, this is a sign of DANGER. Your child needs medical help. Your child should be weighed at least once a week until the line goes up again.

MONTHS
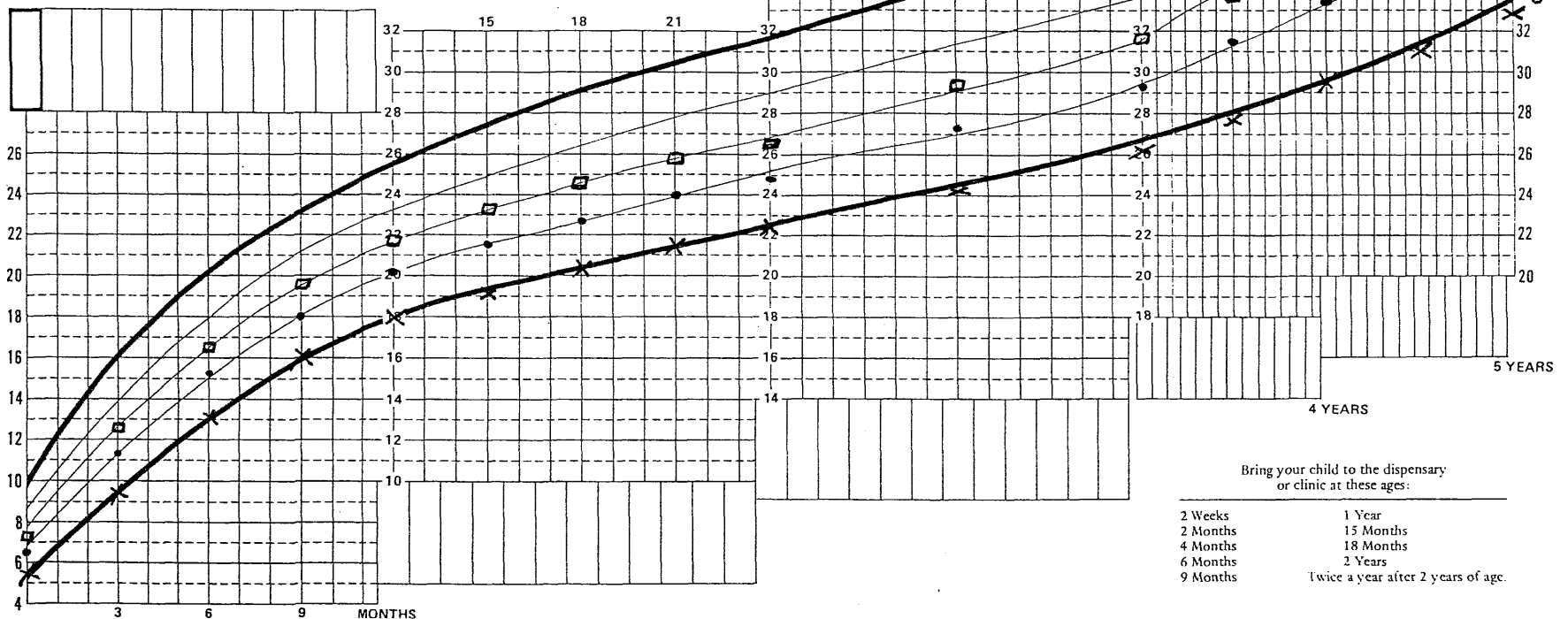
5 YEARS

4 YEARS

Bring your child to the dispensary or clinic at these ages:

2 Weeks	1 Year
2 Months	15 Months
4 Months	18 Months
6 Months	2 Years
9 Months	Twice a year after 2 years of age.

X   NCHS/CDC 5th percentile

•   NCHS/CDC 25th percentile

□   NCHS/CDC 50th percentile

DEFINITION AND RECORDING OF MALNUTRITION
IN CHILDREN 0-5 YEARS

1.   Malnutrition is diagnosed when a child's weight is plotted on the weight chart in the child's health record and it is below the 5th percentice line (standard weight for age).

2.   Check the baby weighing scales each month to see if they are still accurate by weighing bags of rice and sugar up to 20 lbs in weight.

3.   Children 0-5 years should be weighed every time they come to clinic whether they come to outpatients or to the well baby clinic. Their weight should <u>always</u> be marked on to their weight chart on the child's health record card.

4.   A dot should be crossed on the nutrition tally sheet in one of the four sections: under 2 years above 5th percentile or below 5th percentile, 2-5 years above or below 5th percentile the <u>first time</u> the child is weighed each month whether or not it is at outpatient or well baby clinic.

5.   Return visits that same month for weighing <u>should not</u> be marked on the tally sheet.

6.   At the end of the month, report the totals from the nutrition tally sheet onto the consolidated MCH form in the nutrition columns.

7.   You can calculate the percentage of children malnourished for that month by dividing the number of children malnourished by the total number of children weighed for that month in the different age groups, multiplied by 100.

	Under 2 years	2-5 years	Total
Malnutrition (less than the 5th percentile			
Total number children weighed			

8.   You can calculate the coverage of monthly weighing activities by dividing the total number of children weighed for that month by the estimated number of children less than 5 years in your area.

Clinic: _____

Date: _____

	Under 2 years			2–5 years		
Above or on 5th percentile	00000 00000	00000 00000	00000 00000	00000 00000	00000 00000	00000 00000
	00000 00000	00000 00000	00000 00000	00000 00000	00000 00000	00000 00000
	00000 00000	00000 00000	00000 00000	00000 00000	00000 00000	00000 00000
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	00000 00000	00000 00000	00000 00000	00000 00000	00000 00000	00000 00000
	00000 00000	00000 00000	00000 00000	00000 00000	00000 00000	00000 00000
Below 5th percentile	00000 00000	00000 00000	00000 00000	00000 00000	00000 00000	00000 00000
	00000 00000	00000 00000	00000 00000	00000 00000	00000 00000	00000 00000
	00000 00000	00000 00000	00000 00000	00000 00000	00000 00000	00000 00000
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	00000 00000	00000 00000	00000 00000	00000 00000	00000 00000	00000 00000
	00000 00000	00000 00000	00000 00000	00000 00000	00000 00000	00000 00000
	00000 00000	00000 00000	00000 00000	00000 00000	00000 00000	00000 00000
	00000 00000	00000 00000	00000 00000	00000 00000	00000 00000	00000 00000
TOTAL						

ADULT WEIGHT FOR HEIGHT CHART

Overweight assessment of adults using BMI

●   For use on adults thought to be overweight, on all patients with high blood pressure, diabetes, gout and other NCD

●   Using Weight for Height wall chart, (see below) the nurse, health assistant, doctor or nutrition worker can decide if the person has a good weight or is overweight or obese.

1.   Weigh the person using accurate scales. Note the weight. Draw a straight line across the chart with your finger.

2.   Measure the height using a measuring rod or special tape (microtoise) that hangs from the wall. Note the height. Draw a straight line up the chart with your finger.

3.   Place a dot where these two lines meet.

4.   Check which section the dot is in (very overweight, overweight, healthy weight range). For example, if a woman weighs 154 pounds and measures 5 feet and 3 inches. She would fall in the overweight range. If a man weighs 176 pounds and measures 5 feet and 7 inches, he would be in the overweight range.

Based on Body Mass Index (BMI) in Range of 18. 20. 25. 30.

HEIGHT IN CENTIMETRES (FEET & INCHES) — WITHOUT SHOES
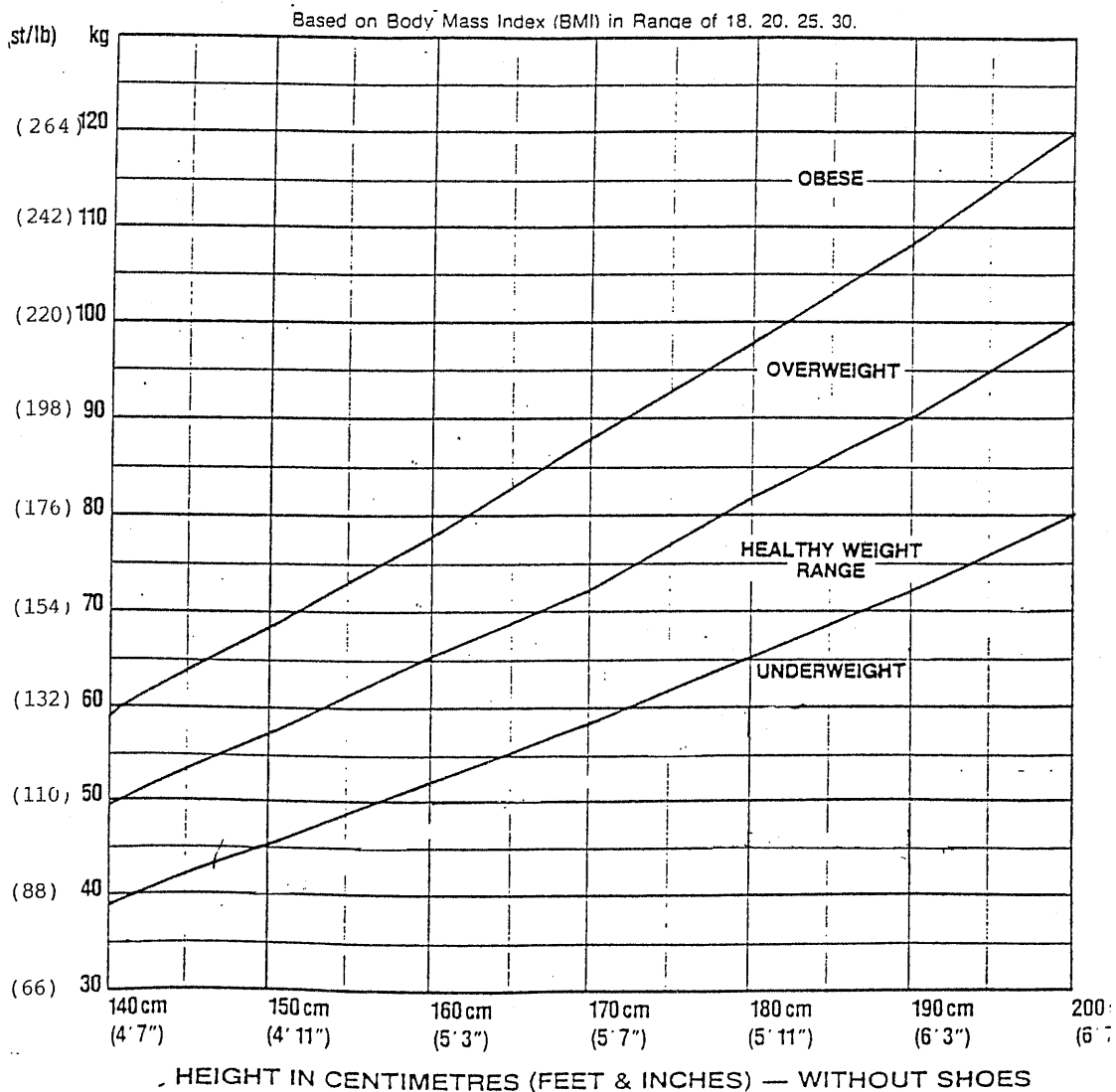
SOME SIMPLE GUIDELINES FOR CONTROLLING WEIGHT

Some Simple Guidelines for Controlling Weight

If we eat less and exercise more we can control our weight problems. The following is a short list of things to do to control your weight:

Eat Less Fat or Oil.

In cooking, use less fat or oil and avoid fatty foods such as sausages, tinned meat, turkey tails, mutton flaps, bacon, butter, or margarine.

Cut Down on the Amount of Alcohol and Sweet Drinks

Coconut juice makes a healthy drink.

Drinking alcohol and sweet drinks regularly is not good for you. If you are thirsty, drink water, coconut juice, fresh toddy, or fresh fruit juices instead of soft drinks, cordials, or sweetened tea, coffee, or chocolate.

Choose Healthy Foods for Between-meal Snacks

If you are hungry between meals, eat fresh fruits and vegetables rather than sweet or salty snack foods such as cakes, doughnuts, cream buns, sweet biscuits, lollies, chips or noodles.
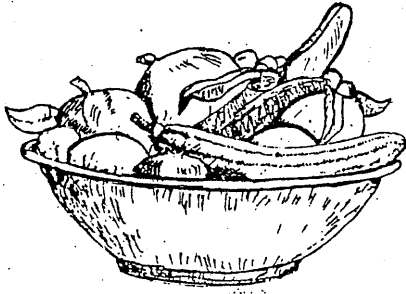
Eat Wisely

Choose more fresh fruits and vegetables and fewer energy-rich foods such as bread, rice, cake, ice cream, scones, and sugar. Eat moderate amounts of body-building food such as fish, chicken, shellfish, and lean meat. Make sure you choose a variety of healthy foods everyday.

Get More Exercise

Make sure you get regular exercise. This can be done through your work if it involves physical activity, through a regular exercise programme, or by choosing activities like walking rather than taking a bus or taxi, and gardening instead of sleeping during your spare time.

Source: Food, Drinks and Non-Communicable Diseases, The South Pacific Commission Nutrition Training Project 1991

FOOD GUIDELINES FOR PEOPLE WITH DIABETES

Food Guidelines for People with Diabetes

The following simple guidelines will help persons with diabetes keep good control of their blood sugar and still *enjoy good food* and a *healthy diet*:

- Eat a variety of nutritious foods in moderation throughout the day. Make sure you choose the right amounts and types of food and drinks advised by your doctor, nutritionist or health worker.

- Choose high-fibre foods in daily meals.

- Eat vegetables, green leaves and other free foods in large amounts or as desired.

- Avoid sugar and sugar-rich foods and drinks.

- Eat less fat and avoid fatty foods. Use vegetable fats in small amounts.

- When preparing and cooking foods, use traditional methods of cooking like baking and boiling. Avoid frying foods.

- Avoid using a lot of flour for cooking and thickening soups, and stews. Use more herbs, spices, lemon, and vinegar.

Diabetes and Pacific Island Traditional Foods

Traditional foods should be eaten instead of processed foods or imported foods. Moderate amounts of traditional vegetables and green leaves are very good, because they fill the stomach without adding extra sugar to the blood. Fibre in foods like vegetables and green leaves will help to lower the sugar in the blood.

The following lists of foods are useful for people with diabetes. This will help people know which foods they can eat and which they should avoid.

Eat Freely as Desired: Free Foods

These foods contain very little or no sugar, starch or fat. People with diabetes or people who want to lose weight can take these in large amounts, as desired. Foods marked with a star (*) are high in dietary fibre or roughage and can be taken in large amounts. Try to include some green leaves in your meals every day.

Dark green leafy vegetables* such as edible hibiscus leaves, taro leaves	Green pawpaw	Lemon
	Tomatoes	Lime
	English cabbage	Tinned beetroot
Green fern	Lettuce	Tea
Seaweeds*	Watercress	Coffee
	Turnip	Water
French beans*	Zucchini	Soda water
Pumpkin tips*	Choko	Mineral water
Bean sprouts*	Okra	Clear soups
Cauliflower*	Mushroom	Vinegar
Celery*	Beetroot	Vegemite
Radish*	Tamarind	Mustard
Silverbeet*	Carrots*	Herbs
Bamboo shoots*	Spring onions	Spices
Rosella leaves	Garlic	Chillies
Cucumber	Ginger	Gelatine
Eggplant		

Eat in large amounts.

Eat in Moderation

These are foods that people with diabetes can eat in small amounts only.

Taro	Breadfruit	White bread
Cassava	Potato	Cabin crackers
Brown rice	Rolled oats or other grain	Fish, shellfish
Whole meal flour	cereals	Eggs
Whole meal bread	Pumpkin	Dried peas
Yams	Noodles or spaghetti	Meat
Sweet potato	Fresh fruits	Cheese
Cooking banana	White rice	Milk

Local staples(rootcrops, cooking banana and breadfruit), fruits and wholegrain cereals or flour are high in dietary fibre. Dietary fibre helps to keep the gut healthy and helps to control diabetes.
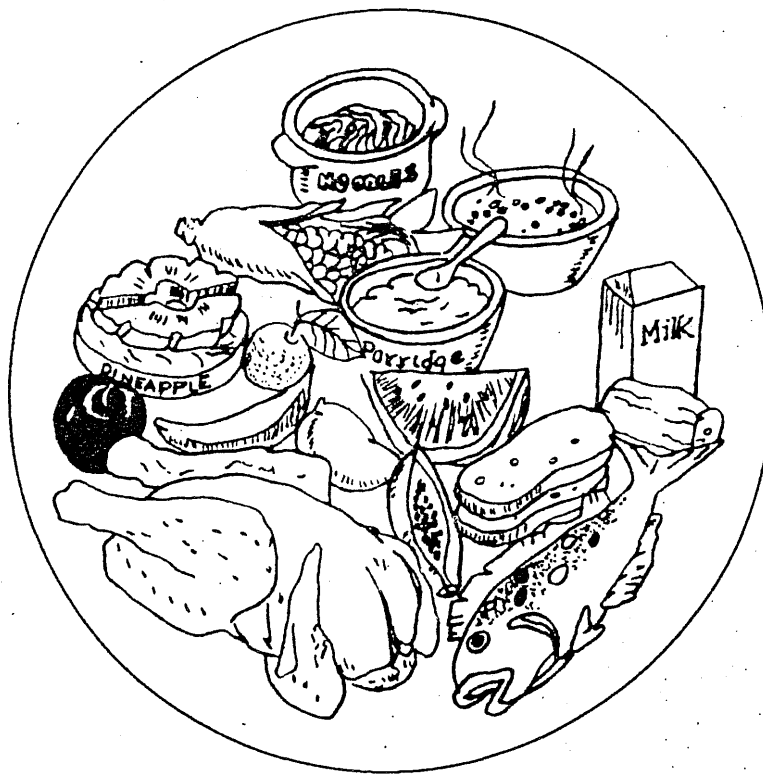
Eat these foods in moderation.

Eat Very Little

Foods which contain mainly fats should also be avoided or eaten in very small amounts. These include butter, margarine, coconut cream, pastries, sausage rolls, meat fats, meat pies, drippings, nuts such as peanuts, almonds, and bush nuts such as Polynesian or Tahitian chestnut
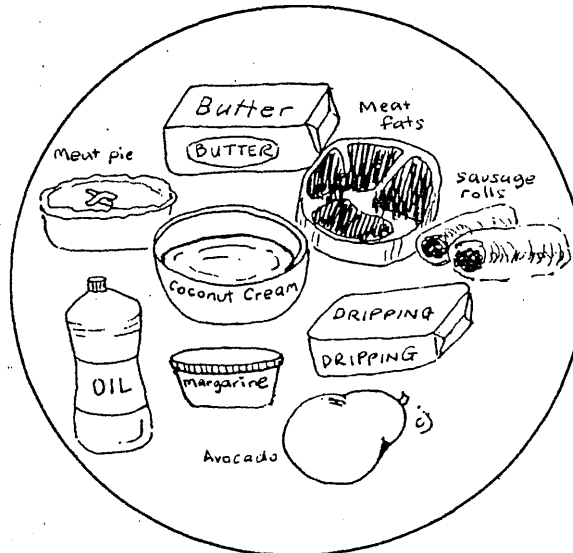
Eat very little of these foods.

Danger Foods: the *No* Foods

Foods which cause a quick rise in the body's blood sugar level should be avoided. They include all sugars and foods with added sugar, such as:

Jam
Sweets
Ice cream
Honey
Sweet biscuits
Chocolates
Steamed puddings
Cakes

Lollies
Soft drinks
Sweetened tea or coffee
Sweet puddings made with
   sugar and coconut
   cream,
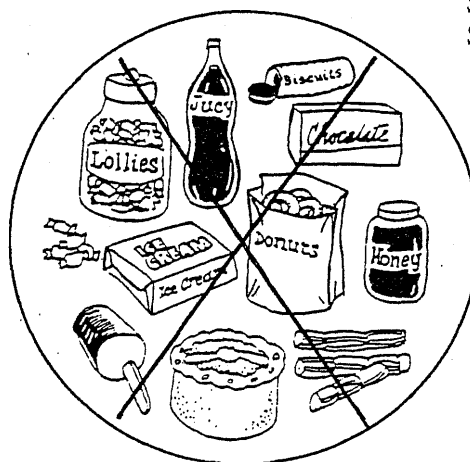
Avoid these foods. These are dangerous for a person with diabetes.

GUIDELINES FOR PREVENTING AND CONTROLLING HIGH BLOOD PRESSURE

Preventing and Treating High Blood Pressure

To prevent high blood pressure which could also lead to heart disease and stroke, follow these guidelines:

- Control and maintain your weight at the level it should be for your age, sex and height (See the Weight for Height charts listed earlier).

- When choosing foods, choose those low in fat and salt and high in dietary fibre.

Low salt, low fat, and high fibre foods include:

– fresh vegetables	– peas	– bread(wholemeal)
– green leaves	– beans	– cereals and grains
– fruits	– lentils	– dried fruits
- root crops	– wholemeal products	– unsalted nuts
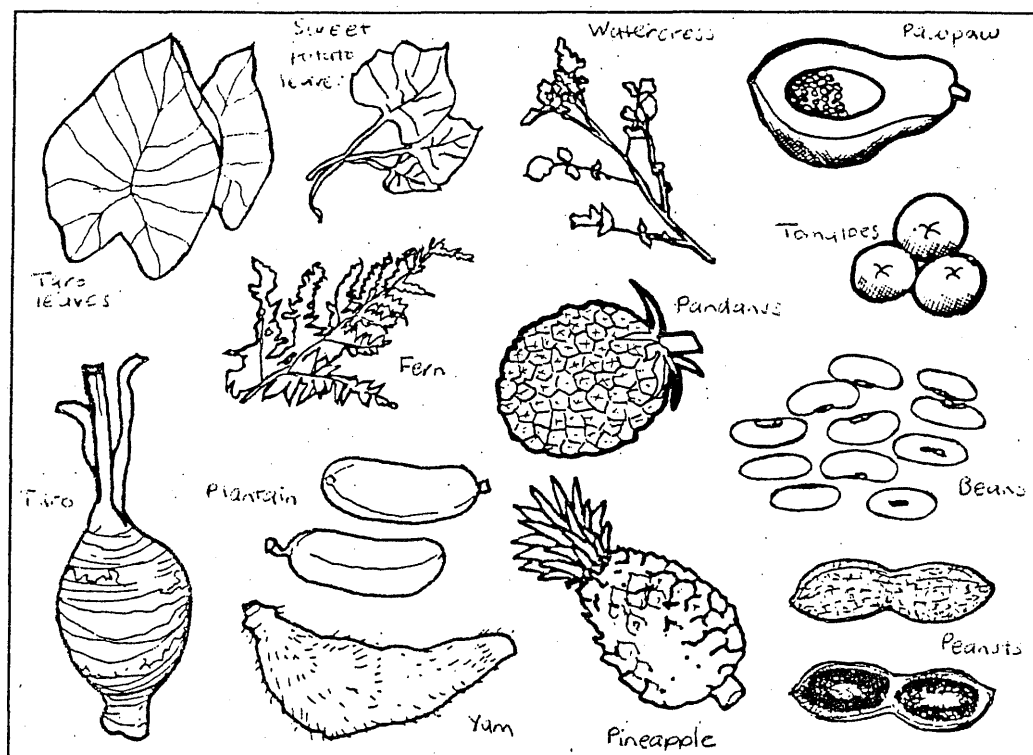
Choose foods that are low in fat and salt and high in dietary fibre.

- Fish has been found to help protect against high blood pressure. It is good to eat fresh, steamed or boiled fish regularly.

- Avoid foods high in fat. These include:

– drippings and lard	– cheese	– french fries
– mutton flaps	– bacon	– cream
– turkey tails	– cakes	– coconut oil
– pork	– chocolates	– sunflower oil
– corned beef	– ice cream	– soyabean oil
– chicken skin	– butter	– coconut
– sausages	– peanut butter	– avocado pear
	– potato chips	

- **Do not fry foods.** The best way to prepare food is to boil, steam or bake. If you must fry foods, use only a small amounts of vegetable oil.

- **Do not add salt to your food.** Do not cook in salt or salt water. Try not to eat too much salty foods. These include:

– salted meat or fish	– Twisties and savoury snacks	– cheese snacks
– tinned meat		– sauces like tomato sauce and soya sauce
– tinned fish	– salted nuts	
– tinned vegetables	– Vegemite / Marmite	
– packages of potato chips	– packaged and tinned soup	– fast foods

- Do not smoke.

- Do not drink excessive amounts of alcohol. Drinking too much alcohol can lead to high blood pressure.

GUIDELINES FOR CONTROLLING GOUT

Guidelines for Controlling or Treating Gout

The uric acid in the blood which causes gout comes from the food we eat. People with gout or those who can get gout should be warned against over-eating. To control or treat gout, follow these guidelines:

- If you are overweight, try to lose weight.

- Do not over-eat. It is better to have regular, small meals than a large amount of food at one time.

- Avoid foods that contain high contents of the uric acid causing gout. These include:
  - liver
  - kidney
  - tinned fish
  - shellfish
  - dried beans, peas and lentils
  - sardines
  - sweetbread
  - mincemeat
  - brains
  - heart
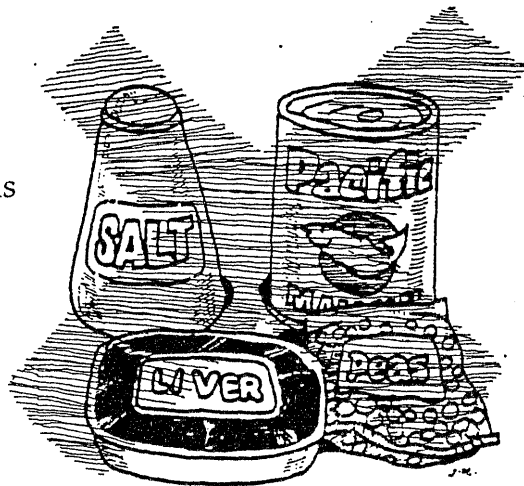
Avoid these foods.

- Avoid drinking alcohol. If you have to drink, take no more than two cans of beer or two standard drinks per day.

- Avoid eating large amounts of sweet and fatty foods and avoid eating large amounts of meat or fish at one time.

- Drink plenty of water. This will help avoid kidney problems.

- When a gout attack occurs the pain and symptoms can be treated with tablets. You should seek medical advice immediately.
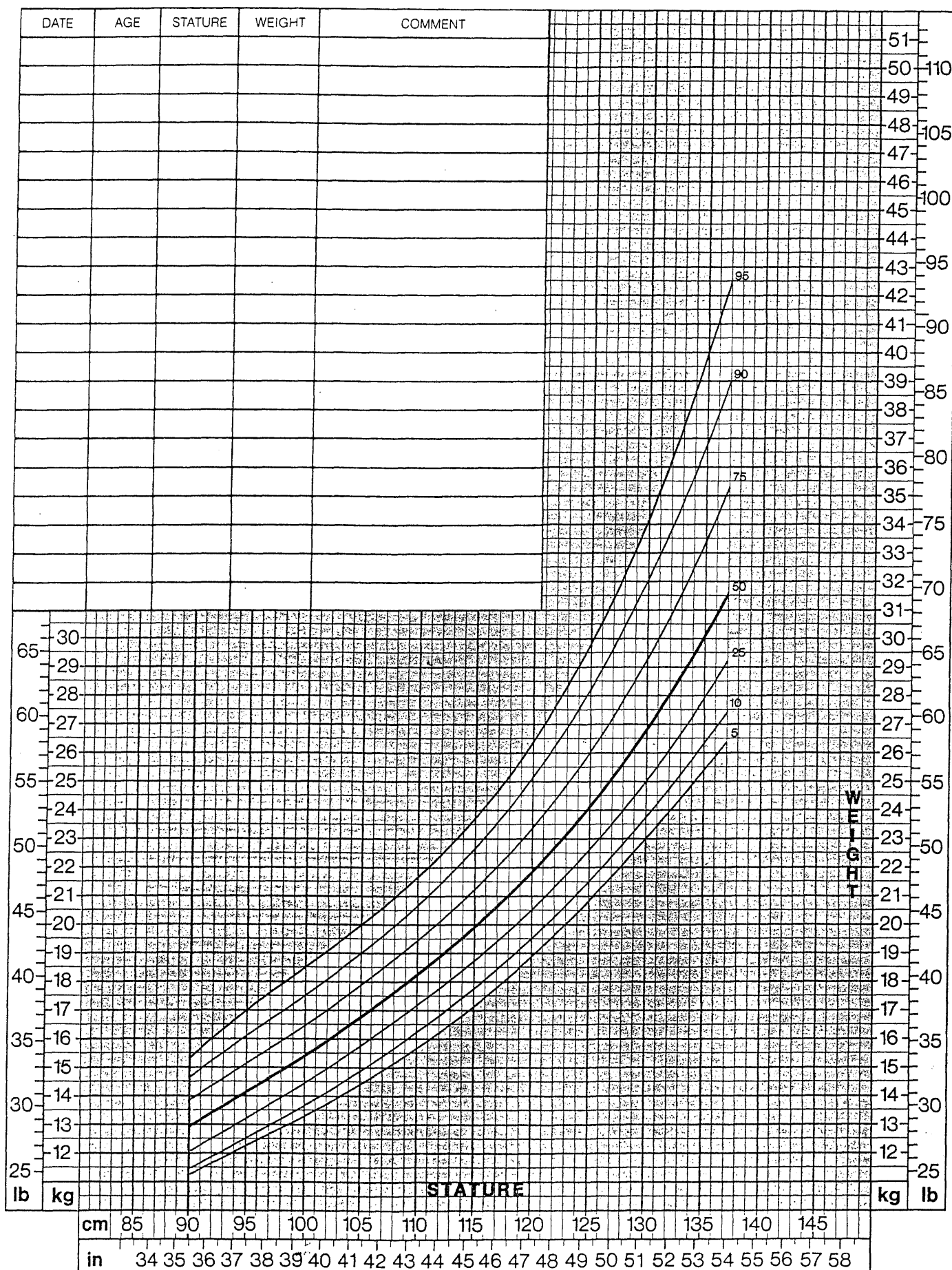
SCHOOL HEALTH RECORD: NCHS WEIGHT FOR HEIGHT CHART FOR CHILDREN 5 TO 10 YEARS.

GIRLS: PREPUBESCENT PHYSICAL GROWTH NCHS PERCENTILES*

NAME_____ RECORD #_____

DATE	AGE	STATURE	WEIGHT	COMMENT

STATURE

cm	85	90	95	100	105	110	115	120	125	130	135	140	145
in	34 35 36	37 38 39	40 41 42	43 44 45	46 47	48 49 50	51 52	53 54 55	56 57 58				

BOYS: PREPUBESCENT
PHYSICAL GROWTH
NCHS PERCENTILES*

NAME_____ RECORD #_____

DATE	AGE	STATURE	WEIGHT	COMMENT

STATURE

cm 85 90 95 100 105 110 115 120 125 130 135 140 145

in 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58

WEIGHT
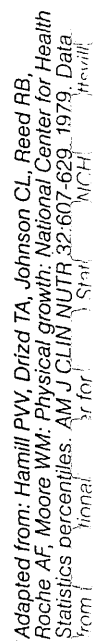
OUTPATIENT ENCOUNTER FORM

Encounter #:   POHNPEI STATE DEPARTMENT OF HEALTH SERVICES   (rev 2/39)

FIRST NAME (print):

LAST:

TODAY'S DATE: ___/___/___

Code	Notifiable Diseases
AM	Amebiasis NOTIFIABLE DISEASES
GC	GC/urethr. (suspect OR confirmed)
HA	Hep A OTHER notifiable disease/
HB	.. B outbreak (see list 1-30):
HU	- .. unspec
ME	Measles
MN	Meningitis
HD	Hansens dis
TB	TB suspect, (on multidrugs)

LAB?
- C   Confirmed
- N   Not done
- U   Pending/ UNK

TOTAL FEE: _____

AMOUNT PAID: _____

Check if insured: ☐

INSURANCE Company & Number: (or signature) _____

RESIDENCE (current)

- 13 Kolonia
- 14 Nett
- 15 U
- 16 Mado
- 17 Kitti
- 18 Sokehs
- 21 Kapir
- 22 Nukuc
- 23 Sapwu
- 24 Mwoal
- 25 Pinge
- 26 KOS
- 28 TKK   OTHER:
- 29 YAP

Code	Dx	Code	Dx
VA	Vit A defic	HT	Hypertension
MA	MALNUTRITION	OC	OTHER CARDIAC
VS	Flu/ viral synd	DI	Diarrhea
UR	ARI, upper(URI)	PA	Parasites
LR	ARI, lower	OG	OTHER GI
OR	OTHER RESP		
OM	Otitis media	MS	MUSCULOSKEL
OE	OTHER EENT	SK	SKIN
RF	Acute rheum fev		
DM	Diabetes		
CJ	Conjunctivitis		

PEDIATRICS ONLY

WT: ___ ___   lbs   ozs

- P Polio   M MMR
- D DPT   H Hep B
- T Td/DT   B BCG

Mother's First Name: _____

INJURY:
- IW ..work-related
- IE ..EtOH-related
- IM ..MVA/ boat
- IO ..any other

Provider ID #:

- UN Unknown
- OD OTHER diagnoses;

OUTCOME
- 1 Admitted
- 2 Died

REFER TO:
- 3 Consultant
- 4 PEDS F/U
- 5 PH Clinic specify):

SEX
- 1 Male
- 2 Female

AGE (or if infant): _____

HOSPITAL NUMBER: ___ - ___ - ___

SITE:
- 1 OPD   4 Kolonia Di
- 2 ER   5 Elsewhere:
- 3 PH

MONTHLY NCD TALLY SHEET

MONTH OF .... YEAR:....................

	MALES				FEMALES				TOTAL
	<25	25–44	45–59	60+	<25	25–44	45–59	60+	
Overweight New cases BMI ≥25									
BMI ≥30									
Revisits Satisfactory Weight Loss									
Unsatisfactory Weight Loss									
Hypertension New cases									
Revisits BP Satisfactory									
BP Unsatisfactory									
Diabetes New cases									
Revisits FBS controlled									
FBS unsatisfactory									
Gout New cases									
Revisits UA* Satisfactory									
UA* Unsatisfactory									

Note: 'Revisits': Count each case only once per month, the first time the patient presents that month.
2. If patient has more than one NCD he/she should be marked in each of the appropriate NCD box.
* UA is an abbreviation for uric acid

PUBLIC HEALTH REPORT FOR ALL ACTIVITIES
AMENDED TO INCLUDE NCD ACTIVITIES

District: _____   Date: _____

MATERNAL AND CHILD HEALTH SERVICES:

Well Baby Clinics, No Held _____ No Referred for other condition: _____
First Visit, No. Seen: _____ Second VIsit No. Seen: _____
HGB No. Taken: _____ Stools: _____ PPD: _____ Pos: _____ Neg: _____
Under Treatment for low HGB _____ Under treatment for Positive stools: _____

IMMUNIZATION:

DPT   1st: _____ 2nd: _____ 3rd: _____ Booster: _____
Polio 1st: _____ 2nd: _____ 3rd: _____ Booster: _____

T.D.   1st: _____ 2nd: _____ 3rd: _____ Booster: _____
Rubella: _____ Measles: _____ Measles/Rubella: _____ MMR _____
Detanus Toxoid: _____ Smallpox: _____ Cholera: _____ Gamma Globulin:
Influenza Monovlaent: _____ Influenza Bivalent: _____

MATERNAL CLINCIS:

	First Visit	Second Visit:
First Trimester		
Second Trimester		
Third Trimester		
Post Partum		

Family Planning _____
Complications of Pregnancy: _____ COmplications of Delivery _____

Overweight	No. seen	High BP	No. seen	Diabetes	No. seen	Gout	No. seen
New cases							
BMI$\geq$25							
BMI$\geq$30							
Revisits							
Weight Loss Satisfactory		BP Satisfactory		FBS Satisfactory		UA Satisfactory	
Weight Loss Unsatisfactory		BP Unsatisfactory		FBS Unsatisfactory		UA Unsatisfactory	

COMMUNICABLE DISEASE CONTROL:

Chest clinic No. Held: _____ Total Pts. Seen: _____ X-ray Taken: _____
Sputum: _____ Cultures: _____ Total PPD Done: _____ No. Post: _____
No. Neg: _____
No active PTs./ on Drugs: _____ New DIagnosed: _____ Discharges: _____
Prophyiactiv Rx: _____ Contacts Seen: _____ No Home visit: _____

VD PROGRAM

No pts DIagnosed treated: , _____ Suspects Treated _____ Contacts Seen ____
No referral to other Distircts: _____

LEPROSY PROGRAM

New Diagnose _____ Old Pts under Rx _____ Contacts Seen: _____ No Disc

MOEBIASIS PROGRAM:

Total under Rx: _____ COntacts Examined: _____ COntacts on Rx: _____

FILARIASIS PROGRAM:

Pts on Rx: _____ New Cases: _____ Blood Test Done: _____

CANCER PROGRAM:

Pap Done: _____ New Cases: _____ Referred: _____ No under Rx _____
Surgery Done: _____

CYTOLOCY PROGRAM:

No seen: _____ Audiometric Test Done: _____ Referred: _____

C.C.S. PROGRAM

Total No seen: _____ Med Exam: _____ New Diag Pts: _____ Home visits _____
Training Program: _____ No attended: _____

PHYSICAL EXAMINATION:

Alien: _____ Student VIsa: _____ Resident Visa: _____
Pre-employment: _____ Food Handlers: _____ Pre marriage: _____

RESULT OF EXAMINATION:

PPD: _____ Pos: _____ Neg: _____ ECG: _____
10 mm Chest X-ray: _____ 14x17 Chest X-ray: _____
VDRL: _____ CBC: _____ Urinalysis: _____ Stool: _____

Nurses: _____ Practical Nurses: _____ Clerks: _____ Medex: _____

Medex in Field: _____ No of Dispensaries: _____ No of Health Assistant: _____

No of Empty Dispensaries: _____

NCD Clinic   Total

DIABETES MANAGEMENT CHART

```
                                                    ┌──────────────────┐
                                                    │ FBS < 115        │
                                                    │ NO FOLLOW-UP     │
                                                    └──────────────────┘
   ┌──────────────────┐      ┌──────┐
   │ FBS ≥ 140 x 2    │- - ->│  NO  │
   └──────────────────┘      └──────┘
                                                    ┌──────────────────┐
            │                                       │ FBS 116-139      │
         ┌──────┐                                   │ REPEAT FBS 6 MO. │
         │ YES  │                                   └──────────────────┘
         └──────┘
            │
   ┌──────────────────┐
   │    DIABETES      │
   └──────────────────┘
            │
      ┌──────────┐
      │  OBESE   │ (IBW plus 25% or more)
      └──────────┘
     ┌──────┐    ┌──────┐
     │  NO  │<─  │ YES  │
     └──────┘    └──────┘
```

FBS 141 - 200

DIET: PROTEIN
        FAT
   NO SIMPLE CHO'S
EXERCISE:
   20' WALK B.I.D.
RTC 1-2 MO.,
        FBS THEN

FBS 141 - 200

DIET: PROTEIN
        FAT
   NO SIMPLE CHO'S
   SMALLER AMOUNTS!
EXERCISE:
    20' WALK B.I.D.
WEIGHT REDUCTION:
   APPROACH IBW
MICRONASE 2.5mgQAM
RTC 1-2 MO.,
        FBS THEN

FBS 201 - 300

DIET: AS ABOVE
EXERCISE:
   20' WALK B.I.D.,
        AFTER MEALS
MICRONASE 2.5mg QAM
RTC 1 MO., FBS THEN

FBS 201 - 300

DIET: AS ABOVE
EXERCISE:
   20' WALK B.I.D.,
AFTER MEALS
WEIGHT REDUCTION:
   APPROACH IBW
MICRONASE 5mg QAM
RTC 2 MO., FBS THEN

FBS > 300

DIET: AS ABOVE
EXERCISE: AS ABOVE
MICRONASE 5mg QAM
RTC 1 MO., FBS THEN

FBS > 300

DIET: AS ABOVE
EXERCISE: AS ABOVE
WEIGHT REDUCTION:
    AS ABOVE
MICRONASE 5mg QAM
RTC 1 MO., FBS THEN

DIABETES REGISTRATION FORM

INITIAL VISIT

NAME_____ DOB_____ MED REC #____ _____ GENDER_____

DATE_____ISLAND_____ MUNICIPALITY/VILLAGE_____

* *

HISTORY

PRESENT SYMPTOMS: OTHER CHRONIC ILLNESSES:

MEDICATIONS:

                                                FAMILY HISTORY OF DIABETES?   Y / N
                                                HISTORY GESTATIONAL DIABETES?   Y / N / N/A
                                                SMOKE?   Y / N
ALLERGIES: ALCOHOL?   Y / N

* *

PHYSICAL EXAM   INITIAL LABS   (WITH DATES)

                                            *
WEIGHT:_____ HEIGHT:_____ BP:_____   * FBS:
                                            *
SKIN: * CHOLESTEROL (FASTING):
                                            *
EYES-- LENSES, CATARACTS?   Y / N   * CREATININE:
        RETINAS: *
                                            * URINALYSIS:
NECK: *
                                            *
CHEST: *
                                            * EKG:
HEART: *
                                            *
ABDOMEN: * CHEST X-RAY:
                                            *
RECTAL: *
                                            * OTHER:
GU: *
                                            * *
EXTREMITIES (ESPECIALLY FEET):   * DIAGNOSIS
                                            *
                                            * 1.
NEURO: * 2.
                                            * 3.
                                            * 4.

* *

INITIAL THERAPY

DIET.................WHAT TYPE?_____

EXERCISE.............HOW MUCH?_____

WEIGHT REDUCTION? Y / N .....IF YES, HOW MUCH?_____ TO ACHIEVE TBW OF _____

DIABETIC MEDICATION: OTHER:

FOLLOW-UP VISIT DATE_____   DOCTOR:_____

FOLLOW-UP VISITS

NAME_____   MED REC #_____

* *

DATE	MEDICATIONS	WT	BP	FBS	EXAM	COMMENTS/PLAN	RTC	DOCTOR

HYPERTENSION MANAGEMENT CHART

HYPERTENSION REGISTRATION FORM

Name_____ Birth Date_____ Sex_____

Village_____ Municipality_____ Phone_____

BP before medication (3 readings from separate visits if possible)_____

History of: heart disease_____ diabetes_____ kidney disease_____ cigarette smoking_____

Initial Lab Work (write date, then result)

    Creatinine_____ Cholesterol_____ FBS_____

    U/A_____

    EKG_____

    Chest X-Ray_____

TREATMENT VISITS

Date	B/P	Medications and dose	Labs	Med changes/comments

SELECTION CRITERIA FOR NCD/CHRONIC DISEASES USING ICD_9 CODES

CANCERS- Primary carcinoma (Exclude benign and in-situ)
ICD-9 codes 140-208

Diabetes Mellitus
ICD-9 codes 250-250

Ischaemic Heart Disease, Heart Failure, & Arhythmias
ICD-9 codes 410-414, or 425-429

Hypertensive Diseases
ICD-9 codes 401-405

Stroke and Cerebrovascular Diseases
ICD-9 codes 430-439

Chronic Pulmonary Disease
ICD-9 codes 490-499

Acute and Chronic Renal Disease
ICD-9 codes 580-589

Chronic Renal Disease & Failure
ICD-9 codes 250

Nutritional Deficiencies
ICD-9 codes 260-269

Motor Vehicle Associated Injuries
ICD-9 codes E810-E829

Injuries
ICD-9 codes 800-998 or E800-E998

(

FEDERATED STATES OF MICRONESIA – FSM
CANCER REGISTRATION FORM

(Complete this form to register a cancer patient. One form is required for each primary). Attach Pathology report if available.

Note: Where a choice is given circle the box containing the required code.

Prepared by _____
Date _____

Verified by _____
Date _____

1. REGISTRATION NUMBER:.. ☐☐☐☐☐☐

2. SITE:.. (Site code) ☐☐☐☐

3. STATE MAKING THIS REPORT:.......................... (Y, P, K, C, Other, Unknown) ☐

4. LOCAL HOSPITAL MEDICAL REPORT NUMBER: .... ☐☐☐☐☐☐☐☐

5. DOES THIS PERSON HAVE MULTIPLE PRIMARIES: .... YES ☐1 NO ☐2

6. FAMILY NAME: .... ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

7. FIRST GIVEN NAME: .... ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

8. OTHER GIVEN NAMES: ..... ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

9. ADDRESS   Village: _____

Municipality: _____   Code ☐☐

State: _____

	Month	Day	Year
10. DATE OF BIRTH: .... ☐☐ ☐☐ ☐☐

11. AGE IN YEARS: (Age at diagnosis) .... ☐☐☐

12. SEX: .... Male ☐1 Female ☐2

13. ETHNIC GROUP: European ☐1   Micronesian ☐3   Indian ☐5

Polynesian ☐2   Melanesian ☐4   Oriental ☐6

Other specify ☐7 _____

FSM – CANCER REGISTRATION FORM   Page 2

	Month	Day	Year

14. DATE OF DIAGNOSIS: ....

	Month	Day	Year

15. DATE OF ADMISSION TO REPORTING HOSPITAL: ....

PATHOLOGY CHARACTERISTICS

16. Histology: (Morphology) ....

.... (ICD–O code)   ☐☐☐☐ / ☐

   (Brief description)

17. Behaviour:

   (i)   Benign   ☐ 0   (iv) Malignant, primary site   ☐ 3

   (ii) Uncertain whether benign
         or malignant
            Borderline malignancy   ☐ 1   (v) Malignant, metastatic site.
                                                                    Secondary site   ☐ 6

   (iii) Carcinoma–in–situ.
         Intraepithelial,
            Non–infiltrating, Non–invasive.   ☐ 2   (vi) Malignant, uncertain whether
                                                                    Primary or metastatic site   ☐ 9

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18. MOST VALID BASIS OF DIAGNOSIS OF CANCER

   Non microscopic   **Microscopic**

Clinical only   ☐ 1   Cytology or haematology   ☐ 5

Clinical investigations e.g. X Ray
   isotopes, endoscopy, angiography   History of metastasis   ☐ 6
   E.E.G.   ☐ 2   Histology of primary   ☐ 7

Exploratory surgery or autoposy   Autopsy with concurrent or previous
   but without histology   ☐ 3   histology   ☐ 8

Specific biochemical and/or   Unknown   ☐ 9
   immunological tests   ☐ 4

IF PATIENT DIED PLEASE COMPLETE THE FOLLOWING

	Month	Day	Year

19. Date of death: ....

20. Post mortem:

               Done   ☐ 1   Not Done   ☐ 2   Not stated   ☐ 3

**SEMINAR ON FOOD
NUTRITION AND NON COMMUNICABLE DISEASES SURVEILLANCE
PALIKIR, FSM, 10 APRIL 1992**

A.   OBJECTIVES:

-    Provide participants with a clear understanding of what is
     nutrition and NCD surveillance and why it is needed.
-    Review the priority problems defined at State and National
     levels
-    Plan the collection of information on these priorities (who,
     collects what, when, processing how, action to be taken).
-    Decide on a time-frame for compilation and feedback of the
     information.

B.   AGENDA:

14:00   Opening and introduction of participants by Dr. Eliuel
         Pretrick

14:30   Nutrition surveillance as a follow-up of National
         Nutrition Survey, National and State workshops on
         Nutrition and NCD. Review of the State and National
         priority problems. (J. Elymore)

14:45   What is Nutrition and NCD surveillance? (C. Dignan, F.
         Bach)

15:00   Group work on 3 main areas of surveillance :

     Area 1:- Malnutrition in children (0-5 years and school
           children)
     Area 2:- Diabetes and Hypertension, overweight and cancer
           in adults
     Area 3:- Tobacco use, alcohol abuse and consumption of
           sugar and fats; and
           - Food production and promotion of local nutritious
           food

     Groups will review drafts and make suggestions as to:
                   - who will collect the information,
                   - which methods should be used,
                   - the resources required,
                   - any blocks to overcome,
                   - timeframe,
                   - feedback system, and
                   - organisation for action.

16:15   Plenary: presentation of groups' suggestions to all
         participants

16:30   Closing remarks

C. LIST OF PARTICIPANTS

Name	Position and	Organisation
1. Amato Elymore	National Health Staff	FSM, DHR
2. Jano Seals P	Public Health	FSM, Pohnpei
3. Jerima Nena	DDHR, H. Specialist	FSM
4. Swanihda Roboner	Public Health	Pohnpei State
5. Eliuel K. Pretrick	DOHR	FSM, NG
6. Jane R. Elymore	DOHR	FSM, NG
7. Perley Samson		Pohnpei State
8. Nicky Davison	Project Coordinator	Family Food Prod. Project
9. Rihna P. Alex	Health Nut. Coordinator	
10. John S. Ernest	Health Ser. Coordinator	DHR, FSM
11. Rose Donre	Land Grant College	Pohnpei
12. Emird J. Boaz	News Prog. Producer	Pohnpei
13. Eneriko Suldan	State statistician	Pohnpei
14.	Head Start Director	Pohnpei Family Head Start
15. Adeline Lorens	Chief Div. of Agriculture	Pohnpei
16. Cecily Dignan	Nutritionist	SPC
17. François Bach	Epidemiologist	SPC
18. Susie Yoma	MCH/FP Coodmater	FSM

D. SUMMARY OF DISCUSSIONS

OVERWEIGHT

- has not been recognised as an important problem
- should become a routine screening by nurses
- need to prepare a plan for the management of overweight individuals including referal to nurses and Nutrition Educator for counseling
- A wall chart with simple cut-off points is considered as an important tool to have.

DIABETES

- Open clinics for screening and management of patients
- Specialised nurses (at least 2) are critical to carry on such clinics at public health and outpatients
- Written guidelines standardised for all states are needed
- Equipment: scales and BP cuffs are often missing
- The retrieval of medical records for every patient visit was felt as very time consuming and a limiting factor which did not help routine screening.
- Clinics should be combined hypertension and diabetes follow-up.

UNDER NUTRITION IN CHILDREN 0-5 YEARS

- nurses often measure height/length, arm and head circumference but there is no interpretation done on these measures. They are just recorded. So these measures should be omitted and only weight for age done.

- all MCH staff need to be clear that "malnutrition" is defined as on or below the 5th percentile line (lowest line).

FOOD PRODUCTION AND CONSUMPTION

This group had met prior to the seminar and were ready with the following suggestions for sources of information types of indicators that could be considered. These were:

- carrying out an agricultural census to provide baseline data.

- monthly market surveys (price, quality, variety of crops)

- expand the scope of recording funeral contributions.

- estimates of land area used for crops to be done annually.

- number of food gardens in a selected sample of communities (3-4 kousahpw per municipality).

- survey of how much of family's food is home produced.

- quantity of planting material distributed.

- purchase of local foods by institutions.

- proportion of food that is local food sold by take-outs.

- survey of food outlets near schools.