STUDY BY THE STAFF OF THE U.S.

General Accounting Office

Future Of The National Nutrition Intelligence System

Federal programs to achieve nutrition must be based on a variety of information on the nutritional status of the population. A properly designed and coordinated system can supply the nutrition intelligence needed. The United States presently does not have such a system but some of the information is supplied by activities conducted by the Departments of Agriculture and Health, Education, and Welfare.

Weaknesses in existing activities include data which is often untimely, not sufficiently specific geographically, omits important population groups, and is inadequate for evaluating program effectiveness. Further, existing activities are fragmented among several agencies and not integrated into a coordinated system.

GAO also discusses agency actions to improve individual activities and to create a coordinated national nutrition intelligence system. Much work remains to be done This report describes recommendations GAO recently made to the Congress and Federal Departments for more effective nutrition intelligence.

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FOREWORD

The rapid increase in United States health care costs and the increasing interest in improving the nutritional status of Americans has made a viable nutrition intelligence system necessary. National health care costs were over $160 billion in 1977, with over 40 percent of that paid for by Federal, State, and local governments. Many of those billions were spent on nutrition intervention programs designed to improve the nutritional status of certain target groups.

This study undertaken at the request of the Subcommittee on Domestic and International Scientific Planning, Analysis, and Cooperation of the House Science and Technology Committee includes an overview of current U.S. programs which provide such information as the nutritional status of target groups or geographic areas, the effectiveness of nutrition intervention programs, and future areas of nutritional concern. Collectively, this is nutrition intelligence. GAO in earlier testimony to the Congress and reports to the Departments of Agriculture and Health, Education and Welfare commented on weaknesses in the current system, evaluated a joint USDA/HEW proposal to correct those weaknesses, and made certain recommendations to the Congress and the agencies concerning the joint proposal.

We feel that this study will provide the reader with an understanding of what nutrition intelligence is, what is being done, and a view of what future developments are likely. Readers desiring additional information should refer to GAO's testimony before the Agriculture Subcommittee of the Senate Appropriations Committee on May 19, 1978; and GAO reports CED-77-56 (March 25, 1977), CED-78-145 (June 29, 1978), and CED-78-144 (June 29, 1978). This document was prepared by the Food Staff of this division. Jack Brock and Charles Stanley of the Food Staff; Joe Kernen, Ted Hrynkiw, Pete Maristch, and John McKelvey of the Philadelphia Regional Office; and Cliff Diehl of the Washington Regional Office. Any questions regarding its content should be addressed to Jack Brock or Bill Gahr, Assistant Director, (202) 275-5525.

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STUDY BY THE STAFF OF THE U.S. GENERAL ACCOUNTING OFFICE

FUTURE OF THE NATIONAL NUTRITION INTELLIGENCE SYSTEM

D I G E S T

In fiscal year 1977, health care cost the United States almost $163 billion with various levels of Government paying over 40 percent. It has been estimated that one-third of these costs might be saved through good nutrition.

While it is not possible to measure the effect of poor diet in terms of human suffering, potential benefits from nutrition could be enormous. Information given to a congressional committee indicated that potentially, a universal good diet could achieve

--a 25 percent reduction in lives lost to heart disease;

--an 80 percent reduction in obesity;

--a 20 percent reduction in the incidence of cancer; and

--a 50 percent reduction in the infant mortality rate.

Simply stated nutrition intelligence is information on the nutritional status of the population and its various parts. How extensive are nutritional imbalances? What are they? Why do they exist? Who is afflicted? Where do they live? Without such information there is little rational basis for planned development and management of nutrition policies and programs. Further, there is no assurance that programs costing billions work effectively and economically and continue in line with changing conditions.

A properly designed and coordinated system of nutrition intelligence can supply the type of information needed, but the United States does not have such a system. What it does have are several activities conducted by the Departments of Agriculture and Health, Education, and Welfare which supply some of the information. However, there are weaknesses in these activities which limit their effectiveness as an overall system of nutrition intelligence. Both Departments, however, have taken actions to improve their

individual activities and, more importantly, create a national nutrition intelligence system which coordinates activities in both agencies.

Much concerted work remains to be done before the system is implemented. Several important details as to how parts of the system will operate have yet to be resolved. In testimony before the Congress and in letters to the Secretaries of the Departments, GAO pointed out opportunities to enhance assurance that the Nation will have effective nutrition intelligence. This includes a pilot study and peer review activities plus congressional followup of the implementation process. Congressional involvement also includes seeing that adequate resources are provided for the system.

A comprehensive system of nutrition intelligence should be designed to provide for

--timely identification of nutritional problems requiring public action targeted at specific groups or areas,

--predicting future areas of nutritional concern, and

--assessing the effectiveness of programs designed to improve nutritional well-being. (See p. 3.)

Achieving these objectives requires coordination of several component mechanisms which experts have identified as

--assessment of the nutritional health of the population, its subgroups and geographical areas at a point in time,

--monitoring for significant changes in nutritional health over time,

--surveillance at the community level for indications of specific nutrition problems requiring action, and

--evaluation to assess programs designed to improve nutritional status or health of targeted groups. (See p. 4.)

Existing activities

With limitations, existing activities provide the fo. nanisms which generate useful information on the nutritional status of the population and selected subgroups and on the effectiveness of food programs. (See pp. 5-14.) However, the assessment and monitoring data often is untimely, is not sufficiently specific geographically, omits important population groups, and is inadequate for evaluating program effectiveness. The surveillance mechanism has weaknesses in terms of population group and geographic coverage and reliability of data. In addition, program evaluation studies have often been limited in geographic coverage or have addressed limited topics leaving sizeable gaps in knowledge concerning the impact of nutrition intervention programs. Further, the existing activities are fragmented among several agencies and not integrated into a coordinated system. (See pp. 15-20.)

Actions by one or both of the Departments of Agriculture and Health, Education and Welfare to improve nutrition intelligence include efforts to speed up data collection and availability and improve the utility and quality of the data obtained. (See pp. 21-22.)

One of the actions taken by the Department of Agriculture is a study contract to assess alternatives for improving the accuracy of food usage data it obtains in periodic national surveys. This study was in response to a March 1977, GAO recommendation that the method of measuring food intake be validated to assure it actually measures the amount of food consumed by households and individuals. After reviewing the study approach, GAO concluded that it will not fully accomplish what had been recommended. (See pp. 24-25.)

In June 1978, GAO further recommended to the Secretary of Agriculture that the study contract be reviewed and either amended or a new study undertaken. (See p. 25.)

The most important action taken by both Departments is their jointly developed proposal for what amounts to a comprehensive system

of nutrition intelligence. It was developed in response to the Food and Agriculture Act of 1977, which required the Secretaries to propose a system consisting of the nutrition intelligence components described earlier. In May 1978, the Secretaries submitted their proposal which centers around four interrelated elements; (1) nutritional and dietary status, (2) nutritional quality of foods, (3) dietary practices and knowledge, and (4) impact of nutritional intervention. For each element, the proposal details present status and shortcomings and then outlines corrective actions.
(See pp. 25-31.)

The system will primarily function through

--a series of recurring national surveys of the population,

--special surveys of nutritionally at-risk groups,

--expansion of an existing surveillance program to more States and population subgroups, and

--studies to evaluate the nutrition intervention program.

These will be augmented through various other activities including research designed to improve methods of collecting dietary and health data.

The system will operate through existing programs within each Department, and the proposal plans to tie them together through a coordination mechanism. The mechanism consists of department and agency-level coordinators, department-level nutrition coordinating committees and interagency memoranda of agreement on areas of common interest.

Separately and informally, the Departments estimated what the system will cost each of them. It totals about $60 million after several years. The estimates include the cost of already existing activities, and will likely change when they are subjected to joint review by the Departments and to the formal budgeting process.

The proposal is a progressive step toward an adequate system of national nutrition intelligence. It recognizes the major problems in existing activities, namely--inadequate coverage of population groups and geographic acres, untimely data, inadequate program evaluation, and poor coordination of programs. However, GAO had four areas of major concern with the proposal; (1) lack of specificity and agreement between the Departments, (2) lack of agreement on how an important decennial survey would be conducted, (3) role of the system in program evaluation, and (4) inadequacy of the coordination mechanism. (See pp. 31-34.)

GAO reported its concerns and related recommendations on May 18, 1978, in testimony before the Agriculture Subcommittee of the Senate Appropriations Committee, and in June 29, 1978, letter to the Secretaries.

To ensure the Departments develop a specific proposal implementation plan, including an effective coordination mechanism, GAO recommended that appropriate congressional committees review the status of the proposed system after some time. If serious implementation efforts have not taken place, the Congress should designate one of the Departments as having lead responsibility for nutrition intelligence gathering. GAO provided to the Congress a list of essential first steps toward enacting the proposal. (See p. 35.)

To aid in developing a unified approach to the important proposed decennial survey part of the system, GAO recommended to the Secretaries that they conduct a joint pilot study. GAO further recommended to the Secretaries that they fund an independent peer review of the proposal by an outside party such as the National Academy of Sciences. The same party should periodically review activities under the proposal and make reports on these reviews available to the Congress to assist its evaluation. (See p. 35.)

The Department of Health, Education, and Welfare has not yet responded to the GAO recommendations, but the Department of Agriculture has endorsed them and is taking action which substantially implements those recommendations. (See p. 35.)

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ABBREVIATIONS

CDC	Center for Disease Control
CFEI	Consumer Food and Economic Institute
FNS	Food and Nutrition Service
GAO	U.S. General Accounting Office
HANES	Health and Nutrition Examination Survey
HEW	Department of Health, Education, and Welfare
MEC	Mobile examination center
NAPA	National Academy of Public Administration
NCHS	National Center for Health Statistics
NFCS	Nationwide Food Consumption Survey
NSMS	Nutritional Status Monitoring System
OMB	Office of Management and Budget
USDA	Department of Agriculture
WIC	Special Supplemental Feeding Program for Women, Infants, and Children

CHAPTER 1

INTRODUCTION

The importance of good nutrition is undeniable. In its most basic form good nutrition is a proper mix of fats, carbohydrates, vitamins, minerals, and protein. More broadly it involves food availability, safety and quality, price and palatability. On a personal level, good nutrition is important for general well-being--6 of the 10 leading causes of death in the United States are linked to inadequate nutrition.

While it is not possible to measure the effect of poor nutrition in terms of human suffering, the potential benefits as a result of good nutrition could be enormous. Information given to a Congressional committee 1/ indicated that potentially, an improved good diet could achieve

--a 25 percent reduction in lives lost to heart disease,

--an 80 percent reduction in obesity,

--a 20 percent reduction in the incidence of cancer, and

--a 50 percent reduction in the infant mortality rate.

Cost savings from an improved diet are difficult to estimate and likely impossible to document. An estimate by George Briggs of the University of California at Berkeley placed potential savings at one-third the annual health cost--estimated by HEW to have been almost $163 billion for fiscal year 1977. Over 40 percent of this was paid by Federal, State and local governments.

The Nation's concern for the adequacy of its citizens' nutrition has been growing for some time. This is demonstrated by increased emphasis on nutrition research, a string of studies on the nutritional status of the population and its subgroups, and the expansion of Federal programs associated in some way with assuring good nutrition.

1/Based on information given in July 1976, hearings before the Senate Select Committee on Nutrition and Human Needs. See Committee prints "Nutrition and Health II, pp. 77 and 78.

The latter programs now cost an estimated $40 billion including $8.6 billion for basic food assistance.

Congressional interest in nutrition is also growing as expressed by several hearings and legislation in recent years. Since Congress' actions provide the authority and funds for all Federal activities related to nutrition, they need to be sure that appropriate areas of nutritional concern are addressed. This includes assuring that the population's nutritional problems are identified and effectively acted upon. To comprehensively identify nutrition problems in the population and track effectiveness of corrective action requires what has been termed a system of nutrition surveillance intelligence.

In July and August 1977, hearings on nutrition-related issues were held by the Subcommittee on Domestic and International Scientific Planning, Analysis, and Cooperation of the House Committee on Science and Technology. Three days of the hearings focused on the Nation's nutrition intelligence activities. To obtain additional information, the Subcommittee in September 1977 asked GAO to review existing programs to determine if the United States had, in effect, a national nutrition intelligence system. If not, GAO was to recommend ways of establishing one. 1/

During the course of GAO's review the Secretaries of Agriculture and Health, Education and Welfare jointly released a proposal to establish a Comprehensive Nutritional Status Monitoring System. This changed the focus of GAO's review to center on the proposal and whether or not it will meet the criteria for a national nutrition intelligence system.

WHY AN INTELLIGENCE SYSTEM AND WHAT SHOULD IT DO?

Simply stated, nutrition intelligence is information on the nutritional status of the poulation and its subgroups. How extensive are nutritional imbalances, what are they, why do they exist, who is afflicted and where are they located? Without such information there is little rational basis for planned development, implementation and management of nutrition policies and programs. Further, there is no assurance that the programs costing billions of dollars are working effectively and economically and continue in line with changing conditions.

1/See APPENDIX I for the request letter.

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1/See APPENDIX I for the request letter.

A comprehensive system of nutrition intelligence has the following four basic objectives

--promptly identify nutritional imbalances,

--pinpoint, within rather narrow geographic boundaries, specific target groups that have nutritional imbalances,

--predict future areas of nutritional concern, and

--provide data which Federal agencies can use to monitor the effectiveness of programs to improve the nutrition, health, and food consumption of various population groups.

Achieving these objectives requires coordination of several component mechanisms, each with a distinct contribution to make. Experts have identified the components of an effective nutrition intelligence system as assessment, monitoring, surveillance and program evaluations. 1/

--Assessment includes measurement and description of the status of a population at a point in time relative to those economic, sociodemographic and physiological factors which can affect nutrition. Assessment surveys can identify nutritional factors of public health concern, ascertain the nutritional level of the population and assist in identifying which population subgroups should be monitored or placed under surveillance. Assessment is necessary to establish a baseline for future comparison.

1/From an April 1977 paper authored by the following: Dr. Jean-Pierre Habicht, Division of Nutritional Sciences, Cornell University.
Dr. Michael Lane, Director, Bureau of Smallpox Eradiction, Center for Disease Control, Department of Health, Education and Welfare.
Mr. Arthur J. McDowell, formerly Director, Division of Health Examination Statistics, National Center for Health Statistics, Department of Health, Education and Welfare.

--Monitoring is the measurement of changes over time in the nutritional status of the population or in a specific group of individuals. This is done by interpreting data from repeated assessments and surveillance activities at regular intervals.

--Surveillance includes activities directed toward early detection of community level nutrition problems so that immediate intervention action can be taken. It can be based on information collected routinely in active health delivery programs and includes rapid analyses and feedback of information to the service delivery sources for immediate use.

--Program evaluation is the assessment of the dietary, biochemical or anthropometric changes in program participants that can be attributed to their participation in a given intervention program. These evaluations can be conducted as part of overall nutrition assessment and monitoring programs or through specially-designed studies or surveys.

SCOPE OF WORK

During the course of our review we interviewed officials at the Departments of Agriculture (USDA) and Health, Education and Welfare (HEW) responsible for directing current nutrition intelligence activities and visited personnel of other Federal agencies to obtain their comments about existing efforts. Several nutrition experts were interviewed to obtain their views. Records and documents relating to current activities and the system proposed by the Secretaries of Agriculture and Health, Education and Welfare were reviewed. As part of our work we briefed the staff of the Subcommittee which requested the review, reported to Senator Chiles on the joint proposal as requested by the staff of Senate Budget Committee and provided information for the record to the Agriculture Subcommittee of the Senate Appropriations Committee. Further, letter reports were issued to the Secretaries of Agriculture and Health, Education and Welfare. 1/

1/U.S. General Accounting Office letter to USDA, CED-78-144, June 29, 1978; U.S. GAO letter to HEW, CED-78-145, June 29, 1978.

ASSESSMENT AND MONITORING ACTIVITIES

There are presently two broad periodic national population surveys which provide a basis for assessing and monitoring nutritional status. These are HEW's Health and Nutrition Examination Survey and USDA's Nationwide Food Consumption Survey. Both surveys (1) have multiple objectives, (2) sample the entire population and selected subgroups at nutritional risk, and (3) produce voluminous statistical data which has a variety of uses in government and nongovernment activities. A major difference is that the HEW survey assesses health status using physical examinations and tests. The USDA survey does not assess health status. It consists solely of interviews to identify food purchase and consumption practices.

Health and Nutrition Examination Survey

By the late 1960's, strong evidence had mounted indicating that certain age and income groups were inadequately nourished despite the existence of domestic programs to deal with hunger and nutrition problems. However, data was not available on the full magnitude of these problems and their distribution through the U.S. population. Consequently, HEW undertook a system of successive surveys to measure the nutritional status of the population and monitor change over time. This was accomplished by adding a nutrition component to an existing Health Examination Survey program periodically conducted since 1959 on varying segments of the non-institutionalized population. The combined program was designated Health and Nutrition Examination Survey (HANES).

HEW's National Center for Health Statistics (NCHS) is responsible for the survey and conducted its first data gathering activity in the period 1971-75. Data gathering for the second HANES started in February 1976 and should be completed by June 1979. It has been costing about $4 million a year to conduct the various aspects of HANES which includes planning, data collecton and analysis, and publication.

Until December 1977, NCHS was organizationally located within the Health Resources Administration, an element of the Public Health Service. In December 1977,

NCHS was transferred to the newly established Office of Health Policy, Research and Statistics directed by a Deputy Assistant Secretary. Among the objectives of the reorganization was creation of a departmental locus for the coordination of statistical policy, plans, and programs.

In planning for survey content and procedures, NCHS draws on internal and external sources expert in various fields and disciplines. For HANES II about 800 medical providers, planners, researchers, and educators were asked to recommend major health problems for which there was a need for national data to assess the nature and extent of the problems. About 200 replies were received and reviewed for feasibility. To further identify what HANES II should address, NCHS reviewed health agency forward plans, current and proposed legislation, and contacted representatives of various program agencies. The results of HANES I were also a factor in deciding the content of HANES II.

HANES' objectives are to measure the prevalence and distribution of certain health and nutritional indicators in the noninstitutionalized and civilian U.S. population 6 months through 74 years old; and assess met and unmet health care needs. To accomplish its objectives, HANES statistically selects for examination samples of about 28,000 individuals to represent the entire population and selected subgroups considered to have a relatively high degree of nutritional risk. About 75 percent of those selected agree to be examined.

The high-risk groups emphasized in both surveys are the poor, preschool children and the elderly (through age 74). To insure adequate representation of these groups in the survey results, special oversampling techniques are employed. By examination, interview, and various tests, HANES gathers extensive data on indicators of the health and nutrition status of its sample persons.

The health component includes questionnaires, examinations, and tests to determine health status as measured by certain physical conditions, blood and urine chemical compositions, and existence of disease conditions such as heart, obesity, hypertension, and arthritis.

The nutrition component consists of four different kinds of data. They are (1) dietary intake (which includes a 24-hour recall to identify nutrient intake and

a food frequency recall to identify dietary patterns), (2) hematoligical and biochemical (results of various blood and urine analyses), (3) body measurements (stature, and/or length, weight, skinfold thickness, various girths and breadths and sitting heights), and (4) physician's examination for signs of malnutrition.

While there are many common areas between the current and preceeding HANES, there are several differences. Some tests (such as the dental and opthalmic examinations and the hand and wrist X-rays) are not being conducted in HANES II because insufficient time has elapsed since HANES I to permit significant changes to occur. Other tests were dropped from HANES II because they took too long to conduct or required more labor than could be allotted. (These included the tuberculin test, and serological tests for such things as German measles, diptheria, and polio.) On the other hand, a few tests have been included in HANES II that were not performed in HANES I. For example, the methodology for measuring bile acids was not available during HANES I, but since has been developed and is being used in HANES II.

Data collected by HANES is tabulated, analyzed and published primarily in a special series of NCHS reports. Planned or issued publications include data on

--national estimates of the prevalence of a variety of disease including kidneys, heart and hypertension;

--normative data on various characteristics such as body measurements and dietary intake and on laboratory findings such as blood cholesterol levels;

--the results of monitoring for changes in indicators of health and nutritional status, such as the level of iron deficiency, from HANES I to HANES II; and

--the interrelationships among different health and nutritional status conditions such as the relationship of body measures or anemias to dietary intake.

NCHS has a mailing list of several thousand individuals and organizations that have requested they be sent one or more of several categories of HANES data as it is published. In addition, NCHS has a program whereby interested data users can purchase computer tapes of HANES data and make analyses as their needs dictate.

From examination of documents in NCHS files and interviews with several Federal agencies it is apparent that HANES type data has a variety of uses in relation to Federal Government activities, primarily within HEW. Ways in which Government activities have or plan to use HANES data to varying degrees include the following:

--As factual support or justification for health program proposals presented to the Office of Management & Budget (OMB), the President and Congress.

--As a basis for establishing program priorities in various health areas including nutrition.

--To identify potential health problem areas warranting consideration of the need for intervention action.

--As reference data in (a) various educational publications prepared by HEW on diet and health problems and (b) studies of the incidence and distribution of disease in the population.

--As a frame of reference against which the results of narrower but more detailed studies can be compared for validity or deviations warranting further inquiry.

--As a basis for allocation of funds to States for programs to deal with health and nutrition-related problems.

Nationwide Food Consumption Survey

At about 10-year intervals since 1935, USDA has surveyed food consumption practices in the United States. Presently named the Nationwide Food Consumption Survey (NFCS), the sixth and most recent one began April 1, 1977, and required a little over a year to complete its data collection activities. Survey objectives are to (1) measure the current status of the American diet; (2) identify changes in the diet which have occurred since the previous (1965-66) survey; and (3) identify factors related to current intakes of foods and nutrients (e.g., kind, amount, and money value of foods consumed by different population groups, the practices of families in their purchase and use of specific foods, and the nutritive content of foods consumed).

USDA's Consumer and Food Economics Institute (CFEI) is responsible for the NFCS, but selects a contractor to perform the actual data collection work. The contract cost for the most recent survey was $9 million. CFEI estimates an additional $4 million will be needed for tabulation and analysis, possible additional survey work and methodology studies.

In planning for the most recent survey content and procedures, CFEI, at the request of OMB, established a formal interagency policy committee to insure that the food consumption data needs of other agencies could be met in one survey. The committee consisted of representatives from numerous Federal agencies including Food and Drug Administration, Administration on Aging, National Center for Health Statistics, Food and Nutrition Service and Economics Research Service. The committee drafted a listing of problem areas relating to food and nutrition and indicated ways in which NFCS could provide needed information.

Also at the request of OMB, CFEI contracted for a study of alternative methods for collecting NFCS data. A panel of consultants reviewed the results of actual surveys made by the contractor and assisted in choosing optional data collection methods.

Based on inputs from the interagency committee and contractor study, CFEI developed the 1977-78 NFCS which collected data on food used in the home (or carried away from the home) and on foods eaten by individual family members (both from home food supplies and from other sources). Data on expenditures for food and housing, participation in food programs, and height and weight of sample persons was also collected. The survey used samples of about 31,000 households to represent all households in the continental United States, Hawaii, and Puerto Rico, and all urban households in Alaska. Included are special samples of elderly and low-income households to ensure they are adequately represented in the survey results.

The person primarily responsible for food preparation in each of the households was interviewed to determine what foods were consumed in the household during a 7-day period. In addition, individual family members were asked to complete questionnaires on their consumption over a 3-day period. Family members in the elderly sample were asked to provide data for a 24-hour period only.

Data collected by the NFCS will be tabulated, analyzed, and published in a series of reports similar to those published for the prior survey. These include food composition of households by region and season, food and nutrient intake of individuals, and money value of food and quality of diet for households. Publications of current survey data will include additional reports on food intake by individuals, away-from-home eating, and consumption of nonpurchased foods.

Data generated by the NFCS has a variety of uses in relation to Federal Government activities, primarily within USDA. Interested users who wish to make their own tabulations and analyses will be able to purchase duplicate computer data tapes or selectively tap specially established computer files of NFCS data. One of the Government's primary uses is to update the four USDA food plans--thrifty, low cost, moderate, and liberal. By law, the thrifty food plan determines the amount of food stamps issued to low-income households. Other Government-related uses include the following categories:

--As reference material in developing economic and forecasting reports for use in making decisions on such matters as resource development and production adjustments for food crops.

--To identify potential food-related hazards and nutritional risks warranting consideration of the need for intervention action.

--As a basis for evaluating the levels of diets of poor and near poor households and of individuals participating in feeding programs.

--As reference material for research in food and nutrition and for developing public information programs on food and nutrition.

--As a frame of reference against which the results of narrower but more detailed studies can be compared for validity or for deviations warranting further inquiry.

SURVEILLANCE ACTIVITIES

Nutrition surveillance is continuous as opposed to the periodic nature of assessment and monitoring and is mos effective when it works through active community

level health programs. This facilitates getting the data needed and expedites planning of remedial and preventive programs when adverse data shows such action is warranted. The foundation for a comprehensive surveillance system exists in a program developed by the Center for Disease Control (CDC) using data collected by various health service delivery activities at the local level.

In 1972, the CDC, an agency within HEW, developed a system to help States and local governments monitor certain indicators of nutritional status. The program is voluntary, and 14 States and three metropolitan areas presently participate by providing data which their clinics collect on indicators of anemia, obesity and stunted growth in children from low-income families. During fiscal year 1978, the system will cost the Federal Government about $500,000. CDC's system is not funded as a line item in its budget. Rather, its funds come from those supplied for activities of the Bureau of Smallpox Eradiction.

Prior broad-scale surveys identified the above three conditions (anemia, obesity, and stunted growth) as common in the lower economic strata of the U.S. population. These conditions were chosen for monitoring also because they are reasonably susceptible to nutrition treatment techniques. Low-income children are normally centered on because they generally use public health clinics where information on height, weight, and blood analyses is routinely collected during patient visits. An indication of the prevalence of anemia, obesity and stunted growth can be obtained by manipulation of data ordinarily collected, and does not require clinics to perform additional expensive or difficult tests.

Pertinent data recorded by the State and county clinics during patient visits is entered on either tape or punch cards and sent to CDC where it is tabulated and analyzed. This includes comparing data on individual patients with established reference values for "normal" growth and "normal" or non-anemic, bio-chemical blood composition. The comparisons identify potentially adverse conditions which should be followed up to see whether remedial action has been taken.

On a monthly basis, participating States and metropolitan areas are sent reports which show the results of each patient's tests and indicate which deviate significantly from the reference value norms. The monthly reports also compare summary data for all States and for clinics within a State. Quarterly, CDC summarizes the data

it has received and publishes a report titled "Nutrition Surveillance" which is distributed to institutions, health agencies, and individuals in the health profession.

The CDC system is primarily designed to provide data for State and local use. During visits to the States of Washington, Ohio, Illinois, Louisiana, Arizona, and Florida, officials advised us that the CDC data is mainly used for program justification (such as for demonstrating the need for the Women, Infants, and Children Program or the well-child examination program). Additional uses are to monitor the effectiveness of clinics in treating patients and as a tool for planning programs and allocating resources.

The foremost Federal use to date has been in altering and, to an extent, evaluating USDA's Special Supplemental Food Program for Women, Infants and Children (WIC). CDC officials, acting on data collected by the surveillance system, convinced USDA to be more flexible in the food package provided to participants in WIC. The CDC data was also used to estimate some nutritional effects of the WIC Program. However, the report was not conclusive because the system was not designed for performing such an evaluation and only those States participating in the CDC program provided data.

PROGRAM EVALUATION

Through several agencies, the Government operates a variety of food assistance programs. The primary purpose of the programs is to provide disadvantaged and otherwise nutritionally at-risk groups with meals, food, or the means to buy food. The goal, of course, is to insure participants have nutritionally adequate diets. To some extent there are other goals such as encouraging consumption of domestic farm commodities. The food assistance activities cost about $8.6 billion a year 1/ and include the

--Food Stamp Progam,

--National School Breakfast and Lunch Programs,

1/For details on these programs including their associated costs, purposes and coverage, the reader is referred to GAO's December 8, 1977, staff study titled "National Nutrition Issues" (CED-78-7).

--Special Supplemental Food Program for Women, Infants and Children,

--Nutrition Program for the Elderly.

Evaluation is a necessary ingredient of any program if planners and managers are to be assured their objectives are being achieved and are to identify where changes may be needed. For food assistance programs, this involves evaluating how effective they are in achieving and maintaining adequate nutritional health. Such evaluations are especially complex because nutrition is only one of many variables affecting overall health; and individuals in certain groups may participate in several programs.

USDA and HEW have studied or are studying the effects of various aspects of food assistance activities, and additional studies are planned. The principal studies dealing with the nutritional impact of food programs are:

--An evaluation of the dietary and nutritonal impact of the School Lunch and Breakfast Programs on a sample of over 1,000 children in Washington State.

--A comparison of the dietary intake of individual and family food stamp participants with that of nonparticipants based on a national probability sample from the current NFCS.

--Studies being initiated on various nutritional aspects of the School Breakfast and Lunch Programs.

--An evaluation of the impact of the Women, Infants, and Children Program on the nutritional status of program participants in 19 selected areas.

--A study of the impact of the Food Stamp Program on the dietary impact of Kern County, California participants.

--Assessments of the effect of food and nutrition programs by HEW during more general studies of the impact of health care delivery.

--A CDC pilot study of changes in selected growth and biochemical variables of WIC participants participating in CDC's surveillance system.

--A 5-year longitudinal evaluation of the nutrition program for the elderly.

WEAKNESSES IN CURRENT NUTRITION INTELLIGENCE ACTIVITIES

As indicated in the previous sections of this chapter, components of a nutrition intelligence system are operating and provide a considerable amount of valuable information. However, the components have a number of weaknesses which preclude them from functioning as an effective overall system of nutrition intelligence. As a whole, the components

--are not always sufficiently specific to identify problems by narrow geographic areas, and they do not always include important population groups;

- o not produce information in a timely manner;

--do not provide information adequate for evaluating the effectiveness of programs designed to improve nutritional health; and

--are not integrated into a cohesive coordinated nutrition intelligence system.

These points are discussed below.

Adequacy of coverage

The major surveys (HANES and NFCS) provide data representative of the entire United States and four major geographical areas. The NFCS geographical areas correspond to the Bureau of Census regional boundaries: West, North Central, Northeast, and South. To accomodate sample design considerations, HANES four geographic areas differ somewhat from the NFCS areas, and are designated as Western, Midwestern, Northeastern, and Southern.

The broad geographical coverage of the surveys coupled with restraints due to sample size, preclude the surveys from providing data representative of narrow geographical areas. Excluded areas include States and counties and special areas such as Appalachia which are believed to have nutritional problems at a higher rate than national or regional samples would indicate. Special subsamples in NFCS will permit it to obtain data representative of all of Hawaii and Puerto Rico and part of Alaska.

Besides not being designed to provide data on narrow geographic areas, HANES and NFCS will not provide data on

all population groups considered to be at nutritional risk. Through their design, including oversampling of certain groups, NFCS and HANES individually or jointly should provide data representative of the following groups at nutritional risk: the poor, preschool children, women of child bearing age, and the elderly. The surveys have not been designed to provide adequate data on other nutritionally at-risk groups such as infants, pregnant and lactating women, elderly over age 74, American Indians and migrant workers.

The expense of doing detailed assessment and monitoring studies blanketing narrow areas and all nutritionally at-risk groups is prohibitive. Yet, information on the nutritional status of these segments of the population is important for comprehensive identification of problems and effective targeting of remedial action.

A National Institute of Health official we contacted illustrated the type of problem that a broad national survey can miss. HANES data might indicate that levels of a given nutrient, such as vitamin A, are adequate in the Nation as a whole and its four major areas. However, among small population groups in Texas and Louisiana, a severe vitamin A deficiency exists. This would not be identified by HANES because only data representative of large population aggregates is obtained. Measures valid for small groups, such as those illustrated, cannot be extracted from the data obtained by HANES.

The nutrition surveillance system operated by CDC does effectively target on narrow geographic areas--States and regions within States including counties. However, it is a voluntary program and presently only 14 States and three metropolitan areas participate. Further, not all counties and clinics in the 17 States and local areas participate in the program. Also, the CDC system presently gathers data only on children of low-income families. However, the data cannot be considered representative of all low-income children in the areas served because

--no data is obtained on those who do not visit participating clinics and

--participating clinics do not necessarily report data on all children they examine.

Timeliness of data

Timely data is vital to decisionmakers, and researchers in the field of maintaining and improving nutritional health. Timeliness is one of the shortcomings with the current major surveys because they are conducted too infrequently or take inordinately long to disseminate their results.

Historically, the NFCS has been conducted about every 10 years to assess the Nation's dietary status. But the pace of changes in the availability of processed foods, household social patterns and the cost of food are causing individual and household food consumption patterns to vary more rapidly than in the past. As a result, NFCS 10-year interval data becomes obsolete before a new survey is conducted. Also, there have been delays in dissemination of data--the 1965-66 NFCS data was not completely available until 1974 due to processing delays. Infrequent data collection and delays in dissemination hamper effective use of NFCS data in planning and evaluating food and nutrition programs. One official told us his agency had to conduct a special survey, primarily because the 1965-66 NFCS data, then called Household Food Consumption Survey, was outdated.

HANES data likewise has not been released in a timely manner. A long data collection period, the process by which the data has been analyzed and released and lack of resources have contributed to this. For example, from April 1971 to October 1975, HANES conducted its first data collection activity. It had originally been planned to carry out data collection over 2 years using four teams working simultaneously at various locations. Budget restraints forced the number of teams to be cut to three and then two with data collection time being stretched out to 4-1/2 years.

Further, during the June 1974 through October 1975 period, processing of HANES I data was essentially halted in order to plan for HANES II because personnel resources were not available to do both. Although processing resumed and various reports have been issued and data tapes are available to users, it will be mid-1980 before all HANES I basic data is analyzed and published, according to a HANES program official. Therefore, about 9 years will have been required to complete the HANES I program.

Program evaluation

Earlier we discussed food assistance program evaluation studies made or planned by USDA and HEW. Despite these studies, comprehensive knowledge will not be available of the nutritonal benefits from the various programs and how their interaction affect participant's nutritional status. Consequently, planners and managers will not have the information they need to assure that food assistance programs individually and collectively satisfy established nutritional objectives.

This lack of comprehensive knowledge stems from many of the studies being limited in geographic or topic coverage or other problems. Others emphasized non-nutrition aspects such as administrative problems, extent of participation, and program design.

For example, as explained earlier, data from the CDC Surveillance System was used to evaluate the nutritional effects of the WIC Program. However, the data cannot be considered representative of the entire WIC program because the CDC system operates in relatively few States and even within States does not cover all program participants.

The shortcomings in existing studies were recognized by HEW and USDA. Other food program-related subjects which HEW and USDA cite as problem areas requiring significantly more knowledge include the:

--National Research Council's recommended dietary allowances used in assessing nutritional status from food intake surveys.

--Long range nutritional status impact of Government and industry instituted changes in the nutrient content of the food supply through fortification actions.

--Effectiveness of nutrition information, education, and training programs and related aspects of intervention programs.

Program coordination

In addition to enhanced coverage and timeliness of data and more comprehensive program evaluations, there is a need for mechanisms to coordinate the various nutrition intelligence activities which are fragmented among several

Federal agencies. This is necessary to guard against unnecessary duplication of effort, ensure clarity of purpose, and improve effectiveness of the various activities.

With nutrition-related programs administered by several separate and often competing entities, program and policy planning in one unit may go on without adequate involvement or consideration of relevant activities in other units. Further diffusion of purpose arises from the fact that in most instances nutrition activities are pieces of larger programs with broader objectives. Planning and resource allocation, therefore, is normally driven by considerations larger than nutrition alone. The result of this arrangement is inadvertent gaps in programs, delays in responding to problems, and confusion over programs within and between departments.

Other matters

In a March 1977 report, 1/ GAO discussed deficiencies of the NFCS including the need for a special survey of low-income households, which has since been added. However, for some types of analyses even this additional sample will be insufficient: income breakouts would have to be fairly broad; comparisons would be limited based on race; the WIC, the special milk program, year-round day care, and the summer feeding program could not be examined adequately because of insufficient sample representation; and the interrelationships of feeding programs could only be broadly examined--and then only for the school lunch and food stamp programs.

GAO also reported that the survey methodology had not been validated and expressed concern that this would open the survey results to question. By lack of validation, GAO meant that there is no assurance the data obtained by the survey interviews will actually measure the amount of food consumed. GAO recommended that the survey methods be fully validated before the next NFCS. USDA hired a consultant to review the best means of validating survey methodology, and has awarded a contract for validation studies. Our evaluation of these efforts is in chapter 3.

1/"Nationwide Food Consumption Survey: Need for Improvement and Expansion," U.S. General Accounting Office, CED-77-56, March 25, 1977.

In the CDC surveillance program, the major problem, in addition to extent of coverage, is lack of quality control to assure accurate measurements are taken in participating clinics. Most of the States we visited had ineffective data quality control programs which means the reliability of reported results is questionable. This stems in part from the need for better training in proper measuring techniques and inadequate measuring equipment. CDC officials have expressed their concern about the validity and reliability of nutrition intelligence data generated by their system. However, they lack the resources to provide the proper equipment or otherwise correct the situation.

OBSERVATIONS

The Federal Government conducts a variety of activities which come under the umbrella of nutrition intelligence, and which generate useful information on the nutritional status of the population and on the effectiveness of food programs. However, they have a number of weaknesses which hamper their effectiveness as individual tools of nutrition intelligence, and militate against their functioning as a unified system. Congress, HEW, and USDA recognized these weaknesses, for the most part. They are attempting to deal with them in the Nutritional Status Monitoring System proposed by the two departments in May 1978 at the direction of Congress. The next chapter discusses efforts being made to improve nutrition intelligence activities, and establish an overall system.

CHAPTER 3

EFFORTS TO IMPROVE NUTRITION INTELLIGENCE ACTIVITIES AND ESTABLISH AN OVERALL SYSTEM

The preceding chapter described weaknesses in existing nutrition intelligence activities and the general lack of an overall system. Both HEW and USDA have taken a number of steps to improve their individual surveys and, more importantly, create a national nutrition intelligence system. In testimony before Congress 1/ and in letters to the Secretaries of HEW and USDA, 2/ GAO made several recommendations designed to make some of these actions more effective.

To improve the timeliness of their data availability, HEW and USDA have taken several actions. These include (1) release of pertinent summary data in advance of the formal but slower publication of details, (2) making computer data tapes available for users to make their own analyses and, (3) contracting out analysis work to supplement that which can be done internally.

Also, HEW and USDA awarded contracts for studies to improve various aspects of HANES and NFCS. HEW contracted for studies leading to (1) recommendations on how HANES can better address nutrition-related health problems in the future and (2) an evaluation of the effectiveness of fixed site examinations as compared to the present mobile caravan procedures. USDA contracted for a validation of the NFCS food intake methodology. Lastly, HEW and USDA jointly developed a proposal to Congress for a comprehensive nutritional status monitoring system. The remainder of this report discusses, in some detail, the studies contracted for by HEW and USDA and their joint proposal.

In January 1976, the Office of Management and Budget (OMB) approved HANES II for 1 year although a 3-year data collection period had been requested. OMB established two major requirements to be met before the data collection

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1/Testimony by Elmer Staats, May 19, 1978, before the Agriculture Subcommittee of the Senate Appropriations Committee.

2/U.S. General Accounting Office letter to USDA, CED-78-144, June 29, 1978; U.S. General Accounting Office letter to HEW, CED-78-145, June 29, 1978.

In October 1978, an overall report of progress under the contract is required. For at least one major public policy question, the report will recommend the questions HANES should address and define the essential requirements and resources. It will also include recommendations as to which HANES I data has high priority to answer public policy questions. A final report covering all work steps is due in September 1979.

As part of its work, NAPA thus far has convened several meetings of its panel of experts to discuss various topics. Also, views on the content and utility of a future HANES were solicited from about 700 individuals including Federal food and health policy officials and program administrators, health providers and insurers, and private authorities on health and nutrition affairs. The individuals contacted were asked to comment upon what type of survey the next HANES should be, what groups most warrant study, what special information should be obtained, and how it should be used.

Evaluation of fixed sites for HANES

The other major condition set by OMB for HANES to be approved beyond 1 year was a definitive study of fixed sites as an alternative to the present method of collecting data through Mobile Examination Centers (MEC). The results of a prior study were not considered conclusive. MECs are sets of three specially designed long trailers. HANES uses two MECs which are trucked from one sampling area to the next as the survey progresses. The MECs are staffed by teams of professional and paraprofessional medical and dental examiners and other technicians. Sixty-four communities selected throughout the United States will be visited during the HANES II 3-year data-collection process.

MEC's permit enhanced data quality because all interviews and examinations are conducted by the traveling teams who are experienced in using standardized procedures and equipment. Resources are available, however, for only a limited number of MECs to operate simultaneously which dictates extensive consecutive operation stretching-out survey time. There is a potential for seasonal bias in data collected due to scheduling examination locations in warm climates during winter and vice versa during summer. Difficulty has been experienced in maintaining trained examining teams intact during the entire data-collection period.

In response to the OMB request, NCHS developed a plan to evaluate the feasibility of contracting with existing clinics to conduct the sampling, interviewing and medical examination phases of HANES to supplement the MEC approach. To obtain the information necessary for comparison with MEC operations, a contract was awarded in February 1978, at an estimated cost and fee of $233,000. The contractor will interview and examine not more than 600 persons, aged 6 months to 74 years in a major city.

Numerous specific tasks are required of the contractor who has a goal of examining the highest possible proportion of sample persons. The tasks are designed to parallel the HANES II operations conducted through MECs. This includes designing a statistical sample to randomly select appropriate examinees, processing them through all examination procedures in one visit, and arranging for all required laboratory work. The task descriptions specify use of interview, examination and quality control procedures, and equipment spelled out in various HANES II manuals which were provided as appendices to the contract. By the end of September 1978, all documentation developed in designing and conducting the study shall be submitted to NCHS along with a report describing unusual problems encountered and recommending improvements.

The final report on the project will be an analysis of the results by an NCHS evaluation team. The fixed site and MEC approaches will be evaluated in terms of (1) response rate attained, (2) unit cost per examination, (3) conformance with all data quality specifications, and (4) respondent burden. Also considered will be the results of NCHS staff and consultant observations of how well contractor-conducted examinations conformed to the specifications for each procedure.

VALIDATION OF NFCS FOOD CONSUMPTION METHODOLOGY

As mentioned in the previous chapter, GAO recommended in a March 1977 report that the NFCS methodology for measuring food intake be validated. Without such validation, there is no assurance that the data obtained by the survey interviews actually measure the amount of food consumed. USDA hired a consultant to determine means to validate survey data, and then amended its contract with the firm conducting the NFCS to have them assess alternative approaches for limiting possible misreporting of food-usage data by households participating in the NFCS. The work will cost $257,000 and run from the end of April through September 1978.

Most study tasks are designed to improve the 1977-78 NFCS survey methods through (1) debriefings with supervisors, respondents and interviewers, (2) testing of 1977-78 NFCS questionnaires and (3) rotation of household food schedules in the questionnaires. The task most related to validation of food consumption is one in which the contractor interviews panels of consumers for opinions with which to evaluate the potential impact of possible validation tests on accuracy of data and respondent burden. Most of the tests to be discussed were recommended by the consultant and included

--nutrient analysis of duplicate meals,

--nutrient analysis of household garbage,

--photographs of ingredients and meals, and

--tracking of food use through an inventory system.

In a June 1978 letter to the Secretary of Agriculture, GAO reported that the study falls short of the objective of ascertaining whether the tests can actually assess the accuracy of food consumption data obtained by NFCS. They pointed out that while several validation procedures were under study, there was no evidence that the contract provided for actual testing of the procedures.

GAO concluded that it did not believe the study will fully validate the NFCS methods, since use of a consumer panel is only a preliminary step toward validation. There is a need to develop and test procedures to assure, to the extent possible, that the NFCS survey results actually measure the food consumed. GAO recommended that the Secretary of Agriculture review the contract and either amend it or undertake a new study because it is essential to have accurate information on the food consumption patterns of U.S. households and individuals.

PROPOSED NUTRITIONAL STATUS MONITORING SYSTEM

In response to Public Law 95-113, the Food and Agriculture Act of 1977, USDA and HEW formulated and submitted to Congress in May 1978, a joint proposal for a comprehensive Nutritional Status Monitoring System (NSMS). The system proposed is essentially equivalent to and a progressive step toward what GAO believes constitutes an adequate system of national nutrition intelligence. However,

some shortcomings in the proposal could seriously undermine its effectiveness, and GAO reported these to the Secretaries of HEW and USDA in its June 1978 report with recommendations for corrective action. 1/

In the legislation, Congress required that the proposal address the need for

--an assessment and monitoring system to determine the extent of the nutrition-related health problems in the United States, and which population groups or areas of the country face greatest risk;

--a surveillance system to identify remediable nutrition-related health risks to individuals or in local areas; and

--evaluations to determine effectiveness of programs to reduce health risks to individuals and populations.

The proposal submitted to Congress in May 1978, centers around four interrelated system elements (1) nutritional and dietary status; (2) nutritional quality of foods; (3) dietary practices and knowledge; and (4) impact of nutritional intervention. For each system element, the proposal details present status and shortcomings and then proposes actions needed to correct the shortcomings in order to have a comprehensive nutritional status monitoring system.

The proposed system will primarily function through the following activities

--a decennial, collaborative survey with HANES and NFCS,

--an additional NFCS survey midway between the decennial surveys with the possible addition of some physiological examinations,

--special surveys on high-risk groups,

--expanding CDC screening activities to more States and with broader coverage,

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1/Ibid.

--gathering screening information from nutrition programs such as the early and periodic screening, diagnosis, and treatment program, and

--studies to evaluate nutrition intervention programs.

These activities will be augmented through research designed to improve methods of collecting dietary and physiological data and improvement of the nutrient data bank and other activities located within HEW and USDA. The NSMS will be operated through existing programs within each department. Each department will have coordinators who will prepare interagency memoranda of agreement on areas of common interest to implement the proposed system.

The proposal recognizes the major problems in existing nutrition intelligence activities. These are inadequate coverage of population groups and geographic areas, untimely data, inadequate program evaluation, and poor coordination of programs.

Coverage of population groups and geographic areas

Chapter 2 discussed the inability of the current mechanisms to provide adequate national and regional data for high-risk groups and the problem of obtaining data by sufficiently narrow geographic areas or for special geographic areas. To overcome these problems, the proposal recommends that special studies be conducted among high-risk population subgroups that cannot be surveyed effectively on a comprehensive nationwide basis. The special studies will be conducted in the years between the comprehensive national nutritional assessments. They will be national in scope to provide regional estimates of the nature and the magnitude of nutrition-related health problems. The proposal also recommends that the present CDC surveillance system be expanded to include all States and territories, with special attention to developing a strategy to reach eligible people not participating in the programs from which data is obtained.

Timeliness of data

The previous chapter indicated that the NFCS has not been conducted with sufficient frequency to ensure that information is current. Also, the dissemination of both surveys' data to interested users has been a lengthy process, and data is often not available in sufficient

detail. In response to these problems, the proposal recommends that future HANES and NFCS surveys be conducted collaboratively at 10-year intervals with a special NFCS survey midway between the 10-year comprehensive survey to monitor rapidly changing food consumption patterns. In addition, the proposal recommends that collaborative analyses mechanisms be developed and implemented for the purpose of releasing data tapes and summary information in a more timely manner.

Program evaluation

There is only a limited amount of data available for evaluating the nutritional impact of food assistance programs such as: the National School Lunch Program; the School Breakfast Program; the Food Stamp Program; the Supplemental Food Program for Women, Infants, and Children; and feeding programs for the elderly.

HEW/USDA propose that an annual evaluation be made of the Food Stamp Program as mandated in the 1977 Food Stamp Act. This will be a follow up to the 1977-78 NFCS sample which will allow comparisons of the same households over time. This survey will also gather data on other food programs in which sample households participate, thus providing information on the relationship between the Food Stamp Program and other Federal food programs.

In addition, the proposal recommends that special studies be conducted to measure the effectiveness of regulatory actions that require food fortification or other activities which control the nutritional quality of food. Special cost benefit studies are recommended to measure the nutrition information, education and training, and related aspects of intervention programs. Also planned is development of new or refined ways of evaluating the nutritional benefits of food and nutrition intervention programs.

Program coordination

The various nutrition intelligence activities of the Federal Government are fragmented among several agencies. Mechanisms are needed to tie these programs together. HEW and USDA proposed focusing attention and responsibility on nutrition intelligence activities by creating departmental and agency coordinators.

The department-level coordinators will serve as the executive directors of each department's nutrition

coordinating committees, and will also maintain ties with other appropriate committees in other departments and with OMB. The agency level coordinators will be responsible for coordination of nutrition activities, including nutritional status monitoring, within the agency and with other agencies of each department. They will serve as members of departmental-level coordinating committees, and will also maintain ties with other appropriate committees in other departments and with OMB.

The department-level nutrition coordinating committee will advise the respective Secretaries on nutrition issues, and assist in focusing and coordinating nutrition efforts within the department. The committee will consist of representatives from each agency which has designated a counterpart to the department coordinator. To enhance effectiveness, the committee will be made up of senior officials who have the authority to speak on behalf of these agencies.

Finally, interagency memoranda of agreement will be prepared by the department coordinators, in collaboration with agency coordinators, for the purpose of expressing common areas of interest and for implementation of the proposed comprehensive nutritional status monitoring system.

Estimated additional resources required for the NSMS

HEW and USDA personnel developed informal estimates of the additional resources their agencies would require to implement the NSMS. As such, they were not developed through the regular budget process which brings into play the relative priority of other programs and the views of agency and OMB policy officials. Further, they were not developed jointly by HEW and USDA which might lead to opportunities to reduce or share costs.

The table below summarizes each agency's estimate of the fund increases they would require in the first year of effort to implement the proposed system.

System element	HEW	USDA	Total
		(millions)	
Nutritional status	$2.6	$4.5	$7.1
Nutritional quality of food	.2	3.5	3.7
Dietary practices and knowledge	1.0	3.5	4.5
Program evaluation	.5	4.0	4.5
Coordinating mechanism	.1	.1	.2
Total	$4.4	$15.6	$20.0

Agency personnel similarly estimated what the total resource requirements would be after several years. HEW's estimate was for fiscal year 1982 while USDA's was for 1983.

System element	HEW	USDA	Total
		(millions)	
Nutritional status	$26.5	$14.9	$41.4
Nutritional quality of food	2.0	6.4	8.4
Dietary practices and knowledge	2.0	2.0	4.0
Program evaluation	1.8	4.0	5.8
Coordinating mechanism	.2	.1	.3
Total	$32.5	$27.4	$59.9

The nutritional status element in the preceding tables included the national assessment surveys and a surveillance component. The latter has four major objectives but centers around expansion of CDC activities. In March 1978, HEW provided the Senate Budget Committee with a plan of major and subsidiary objectives for implementing the surveillance component, and an informal estimate of the additional resources required over 4 years. The major objectives and related estimates are shown in the next table.

Objectives	Year 1	2	3	4
		(thousands)		
Expand technical assistance and consultation to integrate nutrition surveillance as part of health delivery programs	$185	$200	$215	$230
Expand present system to all States and territories and more service programs	255	530	735	940
Promote uniform procedures for nutrition assessment and data recording and interpretation	775	310	435	540
Place other high-risk groups under surveillance	145	165	215	255
Total	$1,360	$1,205	$1,600	$1,965

CDC accounts for the bulk of the resources in all years. During discussions with GAO, CDC officials estimated that over a 5-year period their system could be expanded to include most States. The estimated CDC resource requirements by the fifth year would be over $4 million. The CDC estimate is based primarily on judgment and some past experience. Further, the full extent of what may be required for some actions, such as promoting uniform procedures, is not really known which precluded development of fully informed estimates.

An underlying assumption of the expansion is that as additional States come in, earlier States will take over processing their own data. This is necessary because CDC does not have the computer capacity to process data for more than 20 States at any given time.

WEAKNESSES IN THE PROPOSED SYSTEM

In June 1978 reports to the Secretaries of HEW and USDA, GAO reported four areas of major concern with the proposal. They were (1) lack of specificity and agreement between HEW and USDA, (2) lack of agreement on the collaborative, decennial survey, (3) role of the system in program evaluation, and (4) inadequacy of the coordination mechanism.

Lack of specificity and agreement by the Departments

The proposal was not specific in a number of areas which may not have been feasible at the time it was presented. This prevented a detailed evaluation of proposed solutions. In some instances, a solution to a particular problem is promising to take care of the situation without telling how or why. For example, the proposal identifies a lack of assessment information on high-risk groups as a problem. The proposed solution is to develop and implement surveillance activities aimed at high-risk population groups.

GAO found that there is no agreement between the departments on several important items--the nature of the decennial survey (as discussed later), the extent to which the 5-year NFCS will collect physiological data, and the extent and the organizational setting of the coordinated research effort on dietary and physiological assessment of nutrition status. GAO believes that before substantial work is done to implement the proposal, the two departments should better determine what questions should be addressed by the NSMS, what types of analyses can be done with the data collected, and what use can and will be made of the analyses.

Inadequate consideration given to nutrition intervention programs

The most significant Government activity to prevent and alleviate the problems of hunger and malnutrition are feeding programs. While $9 billion is spent each year on these programs, little is known about their nutritional benefits on a national scale. Neither HANES nor the NFCS has yet provided useful information in evaluating these programs, although the current surveys will provide some data on certain aspects of the feeding programs. Historically, however, program evaluation has not been a primary objective of either HANES or NFCS.

The proposed system expands emphasis on evaluation of nutrition intervention programs as one of its four major elements. It is the least specific of the four elements of the proposal, possibly because much has yet to be learned about how to evaluate feeding programs. OMB has previously rejected attempts by Department of Agriculture's Food and Nutrition Service (FNS) to evaluate the food stamp program because of methodology that would result in a response rate too low for meaningful results. Unless FNS develops a new

approach or gains OMB's approval, food stamp program evaluation efforts could be limited to the information gathered from the ongoing NFCS and to a lesser degree from HANES. Except for the food stamp program and the school lunch program, the NFCS will not be able to provide significantly useful information to evaluate food assistance programs. Even the food stamp and school lunch data is restricted in that it cannot fully evaluate the nutritional impact of these programs on participants.

The intervention element of the proposed system will require substantial effort before it develops into an effective means to evaluate food programs. Those responsible for implementing the proposal must give high priority to fully developing the criteria, and measures needed to evaluate intervention programs. Clear definition of the information needs of the intervention programs is required to adequately incorporate those needs into the monitoring mechanisms.

Lack of USDA/HEW agreement on the decennial survey

The cornerstone of the NSMS is the decennial survey. This is to be a collaborative effort, but there is no agreement between the departments on how it will be carried out. GAO was advised that HEW feels that both the HANES and NFCS surveys should be conducted separately but within the same timeframe, and having certain comparable components and survey methodologies as outlined last year in an interagency task force report. USDA prefers consideration of a single sample with USDA gathering all dietary data and HEW taking a subsample to gather its specific data needs for HANES. In 1970, GAO wrote to each Secretary and stated that a consolidated survey could reduce costs and overlap by the use of one population sample rather than two.

HEW's reply stressed the impracticality of consolidation due to the different information objectives of the two surveys, the different timeframe, and the increased respondent burden. Most of the objections centered around the different data needs of the two agencies. HEW felt it needed to monitor nutritional status continually over time with certain medical observations, and tests while USDA had a need for intermittent data on household and individual food consumption only. While the need for food consumption data was common to both surveys, the different end uses of the data called for different sampling designs. USDA's

reply was somewhat more encouraging--stressing the difference in time periods as the primary problem in consolidation, but expressing a willingness to undertake a feasibility study of consolidation or closer cooperation with HEW.

GAO still believes consolidation is a feasible proposition and should be considered as an alternative to the present separate surveys. Information gathered from each survey is or could be important to many nutrition/ health programs. Gathering the information from one sample could greatly ease the problem of correlating the two sets of data. The problems of timeframe would be corrected by the proposed collaborative survey. The problems of respondent burden and differing data needs are real, but ones which GAO believes can be worked out.

Coordination mechanism not adequate

GAO believes that nutrition coordinators within each department and within agencies are desirable and long overdue, but may not be the most effective means of control. The coordinator within HEW has no real authority beyond his personal influence to ensure the proposal will be adequately developed. This activity will be located within the Public Health Service, but will be responsible for coordinating all NSMS functions for which HEW will be responsible. An HEW official said that the coordinator has no formal authority, but that his recommendations would receive attention from the highest levels of HEW. It seems that the coordinator's role is too dependent upon a series of personal relationships which can vary as positions and personnel shift within the department. USDA has not yet named a departmental coordinator, but the position will likely be within the Secretary's office.

The interagency memoranda of understanding will provide the communications link between the two departments, but will not provide a basis to require cooperation. It will likely establish a joint HEW/USDA committee co-chaired by the two coordinators to work out details of the proposal. There is no clearly defined procedure as to how disagreements over the proposal would be settled. One official said that the best thinking would prevail. In view of the split of opinion on nutrition matters between the two departments--as was evident in the recent HEW and USDA nutrition memoranda to OMB--it would seem that each agency feels that it has the "best thinking."

Reported GAO recommendations

On May 19, 1978, before the Agriculture Subcommittee of the Senate Appropriations Committee, GAO recommended that appropriate Congressional committees review the status of the proposed system after some designated time. The purpose of the recommendation was to ensure that the departments develop a specific proposal implementation plan and the means of coordination and cooperation. If serious implementation efforts are not found to have been taken, Congress should designate either HEW or USDA as the lead agency having primary responsibility for nutrition intelligence gathering. GAO listed the following as essential first steps toward enacting the proposal:

--A detailed implementation plan showing when and how the proposal will be implemented and how much it will cost.

--An elaborated discussion of all elements of the proposal, especially those sections dealing with the decennial survey and program evaluation.

--Procedures for dealing with areas of disagreement on how the proposal is to be implemented.

--Regular, institutionlized communication between and within departments.

GAO also made recommendations on June 29, 1978, in letters to the Secretaries of HEW and USDA. To develop a unified approach to the decennial survey, GAO recommended a joint pilot study during the next NFCS to determine the feasibility of combining the NFCS and HANES into one.

GAO further recommended that the Secretaries fund an independent peer review of the proposal by an outside party, such as the National Academy of Sciences. The same party should periodically review the activities to be carried out under the proposal, such as survey plans and methodology, analysis plans, and publications. The peer group's reports should be made available to Congress to assist its review of the status of the proposed system.

Agency response to GAO recommendations

HEW has not yet responded to our recommendations, but USDA has endorsed them. In letters addressed to the House Committee on Government Operations, the Senate Committee on Governmental Affairs, and OMB; USDA stated "the drafting of implementation plans has been greatly influenced by the

findings of GAO. . ." USDA is now taking action which substantially meets our recommendations. The Secretary of Agriculture has directed department officials to develop a pilot study for a joint HANES/NFCS survey, recommended that a peer review of the joint surveillance activities be undertaken, and established a coordinating mechanisim within USDA to develop implementation plans and assure collaboration within the department.

OBSERVATIONS

USDA and HEW have made serious efforts to improve their individual nutrition intelligence activities. The studies currently in process, depending on the results, could significantly affect how NFCS and HANES are conducted in the future. Studies similar to that being made of HANES by the National Academy of Public Administration would seem to be a good idea for any recurring survey activity.

The surveys will also change when the planned system of national nutrition intelligence goes into effect. However, much remains to be done before the coordinated system is a reality. Still to be resolved are several important details as to how parts of the system will operate. It is especially important to insure that an effective coordination mechanism exists because of the fragmented nature of the Government's nutrition activities.

Informal agency estimates indicate the system could cost $60 million a year. While this is a lot of money in absolute terms, it includes many already existing activities. Further, the amount pales in comparison to the $40 billion spent annually on various Federal programs to assure good nutrition. Insuring that programs do what they are intended to, and having the opportunity to realize potential health cost savings, requires a complex of nutrition-related activities. These activities are embodied in the proposed Nutritional Status Monitoring System. Developing and implementing the system will require a concerted effort by HEW and USDA.

APPENDIX I

COMMITTEE ON SCIENCE AND TECHNOLOGY
U.S. HOUSE OF REPRESENTATIVES

SUITE 2321 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, D.C. 20515

September 16, 1977

The Honorable Elmer B. Staats
Comptroller General of the United States
General Accounting Office
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Staats:

The Science and Technology Subcommittee on Domestic and International Scientific Planning, Analysis, and Cooperation (DISPAC), of which I am the Chairman, recently completed a rather lengthy nutrition-related oversight review. Three days of this oversight review were devoted to the topic of nutrition-surveillance in the United States and in other nations.

Although the Subcommittee has not yet issued a report on these hearings, it is already apparent from a preliminary review of the hearing record that the oversight review was not able to tap all the information that would be useful in future work of the Subcommittee. It would appear that some of this information might be obtained more readily through a General Accounting Office review than through the hearing process.

The Community and Economic Development Division of the General Accounting Office submitted to us an excellent statement for the record on nutrition surveillance in the United States. The statement focused in particular on the USDA Nationwide Food Consumption Survey, the Ten-State Nutrition Survey, and the Health and Nutrition Examination Survey (HANES) program of the Department of Health, Education and Welfare.

Among the conclusions and recommendations mentioned in the statement was the need for a nutrition surveillance system in the United States that is:

a. Timely in identifying nutritional needs;
b. Able to pinpoint specific target groups that have nutritional needs;
c. Able to predict future areas of nutritional concern;
d. Able to monitor the effectiveness of nutrition/health/feeding delivery systems; and
e. Fully linked to other components of our nutrition system.

Most experts would agree that the creation of such a system would be an ideal. I consider it important for the Congress to know whether and to what extent our current set of nutrition surveillance programs have been designed to, and are capable of, meeting these requirements. Therefore, I would like to request that the GAO conduct an even more extensive analysis than has been previously undertaken of our national surveillance system to determine how well our current set of surveillance programs meet the above-stated requirements. Also, it would be very helpful if this analysis took the "health" component, as well as the nutrition component, into consideration.

More specifically, I would like to request that the following lines of inquiry be addressed:

(a) Examine HANES I and II, the Nationwide Food Consumption Survey, the bureau of Labor Statistics' Consumer Expenditure Survey, and the surveillance activities of the Center for Disease Control to determine their objectives, how well these objectives are being met, and how well these objectives fit the needs of the country.

(b) Compare the data gathered by these surveys in order to identify areas of overlap and neglect (gaps) in the provision of timely and accurate data.

(c) Review the coordination and cooperation among the various Federal agencies and departments engaged in surveillance in the pre-planning through data analysis stages.

(d) Review and determine what input Federal departments and agencies engaged in nutrition and feeding programs have in planning nutrition surveillance surveys.

(e) Determine how information gathered by these surveys is used, or should be used, in planning and evaluating nutrition and feeding programs.

(f) Recommend alternative methods for improving our national nutrition surveillance system.

Finally, it would be very helpful if the appropriate GAO staff could review and comment on the conclusions and recommendations contained in the report of the DISPAC Subcommittee which will be published this fall. Your views on more detailed policy recommendations would be most welcome. We are vitally interested in the development of a "Plan of Action" in terms of legislation or recommendations to the Administration.

APPENDIX I

The staff of the Community and Economic Development Division, as well as the staff of the Procurement and Systems Acquisition Division, has been most helpful in the planning and analysis of the nutrition-related oversight review. We hope that we can continue to count on the expertise and advice which has been prcvided, and that this inquiry will receive high priority within your office. I look forward to hearing from you at your earliest convenience.

Thank you for your cooperation. With every warm best wish,

Yours,

JAMES H. SCHEUER, Chairman
Subcommittee on Domestic and
International Scientific Planning,
Analysis, and Cooperation

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