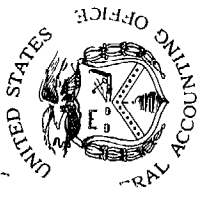


096020

~~4.01.04~~



REPORT TO THE SELECT COMMITTEE
ON NUTRITION AND HUMAN NEEDS 096020
UNITED STATES SENATE

~~240568~~



Evaluation Of Efforts To
Determine Nutritional Health Of
The U. S. Population B-164037(3)

Department of Health, Education,
and Welfare

BY THE COMPTROLLER GENERAL
OF THE UNITED STATES

~~701772~~ [096020]

NOV. 20. 1973



COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-164031(3)

ci
The Honorable George McGovern
Chairman, Select Committee on
Nutrition and Human Needs
United States Senate

Dear Mr. Chairman:

Pursuant to your request of January 10, 1973, this is our report on the survey conducted by the Department of Health, Education, and Welfare to determine the incidence and location of serious hunger and malnutrition in the United States.

As agreed, we have obtained the Department's comments and have incorporated them into the report.

We are sending copies of this report to the Secretary of Health, Education, and Welfare. We plan to make no further distribution of this report unless you agree or publicly announce its contents.

Sincerely yours,

A handwritten signature in cursive script that reads "James B. Aboody".

Comptroller General
of the United States

AVAILABLE

COMPTROLLER GENERAL'S REPORT
TO THE SELECT COMMITTEE
ON NUTRITION AND HUMAN NEEDS
UNITED STATES SENATE

EVALUATION OF EFFORTS TO
DETERMINE NUTRITIONAL HEALTH
OF THE U.S. POPULATION
Department of Health, Education,
and Welfare B-164031(3)

D I G E S T

WHY THE REVIEW WAS MADE

In July 1972 the Department of Health, Education, and Welfare (HEW) issued a report of the results of a comprehensive survey (Ten-State Nutrition Survey) directed by the Congress in 1967 to determine the incidence and location of serious hunger and malnutrition in the United States.

Since HEW expected malnutrition to be most prevalent in the low-income segment of the population, it sampled households in the poorest census enumeration districts in 10 States-- California, Kentucky, Louisiana, Massachusetts, Michigan, New York (with a separate survey for New York City), South Carolina, Texas, Washington, and West Virginia. (See pp. 6 and 13.)

Because this was the first comprehensive nutrition survey in the United States, GAO examined its statistical design and how it was carried out to determine whether its results would satisfy the congressional requirement. GAO did not examine the validity of the data gathered.

FINDINGS AND CONCLUSIONS

GAO questions whether the survey results satisfy the congressional requirement.

This survey had administrative problems throughout its life, including

- funding delays (see p. 8),
- organizational transfer of the Nutrition Program and loss of personnel (see p. 10), and
- data processing system changes, including the use of different data recording forms (see p. 10).

The survey gathered health, nutrition, and other data on members of sample households through interviews and clinical examinations. (See p. 6.)

HEW anticipated the survey results would describe the nutritional status of the target population in each State (see p. 14), and in its report HEW said it believes the survey sampling procedure yielded a representative sample of low-income families (see p. 15).

However, GAO believes the survey results should not be considered representative of the nutritional status of members of low-income households as a whole because

- the scope of the survey population was limited to low-income households in certain areas,
- an unknown number of members of

sample households did not participate,

- volunteers were often used instead of members of sample households,
- substantial numbers of individuals from interviewed households were not clinically examined, and
- income data was not available for a large number of interviewed households. (See p. 19.)

~~The survey sample was not designed to represent the total low-income population within the States, because the method of selecting the sample enumeration districts restricted the target population to the 25 percent of each State's population that lived in the poorest enumeration districts.~~

The method of choosing sample enumeration districts, therefore, excluded low-income persons living in districts that had a higher proportion of households with incomes above the poverty level. (See p. 14.)

The survey's sampling plan did not indicate what participation rate by members of sample households would be necessary to produce reliable results. However, HEW correspondence said that about 75 to 85 percent of the members of sample households should participate. (See p. 15.)

In some survey areas the number of members of sample households selected to participate but not interviewed and examined is not known. The number of members that should have participated, therefore, was not included in the statistics HEW used to compute the 47-percent participation rate at clinics shown in its report. (See p. 16.)

HEW's report also showed that about 21 percent of the persons examined at the clinics were volunteers and that the clinical data for them was combined with data from members of sample households. This combination of data makes the survey results unreliable. Clinical data was obtained from less than 45 percent of the members of sample households who participated in the survey. (See p. 17.)

It is not known whether the physical and biochemical characteristics of members who were not examined were similar to those of persons who were examined. (See p. 18.)

The report compares the ethnic groups, ages, educational levels, and family incomes of clinic attendees and nonattendees and, from these comparisons, HEW concluded that, in most respects, attendees differed little from nonattendees. HEW believes that family income is the one characteristic which has the greatest relationship to nutritional status. However, HEW noted that there was no consistent relationship between income level and the percentage of families whose members did or did not attend the clinics. Income data was available for only 57 percent of all households interviewed. (See pp. 17 and 18.)

GAO believes the survey data should be considered applicable to only those individuals examined. Actual nutritional status of the low-income population may differ significantly from the survey results. (See p. 19.)

After the Ten-State Nutrition Survey began, HEW developed the Health and Nutrition Examination Survey. This is designed to provide scientifically

reliable estimates of the nutritional status of, and prevalence of malnutrition in, the population of the continental United States, excluding Alaska. It is to especially emphasize those population segments most likely to have nutritional deficiencies. (See pp. 6, 7, and 21.)

The participation rate under this survey has not yet reached the level required by the sampling plan. However, the nonresponse problem is being overcome, and, if the participation rate continues to improve, this survey should produce reliable data. (See p. 23.)

AGENCY ACTIONS AND UNRESOLVED ISSUES

HEW agreed that GAO's report fairly

and accurately portrays conditions and problems encountered in designing, conducting, and reporting on the survey. However, HEW believes that, since this was the first comprehensive nutrition survey in the United States, the results were an appropriate basis for reporting to the Congress. (See pp. 19 and 20.)

MATTERS FOR CONSIDERATION
BY THE COMMITTEE

Although the Ten-State Nutrition Survey provided data on the nutritional status of low-income participants, the results may not represent the nutritional status of the low-income populations of the survey areas. (See p. 19.)

CHAPTER 1

INTRODUCTION

On December 5, 1967, the Congress enacted the Partnership for Health Amendments of 1967 (Public Law 90-174). Section 14 required that:

"The Secretary of Health, Education, and Welfare, in consultation and cooperation with other officials of the Federal Government and of the States, shall make a comprehensive survey of the incidence and location of serious hunger and malnutrition and health problems incident thereto in the United States and shall report his findings and recommendations for dealing with these conditions to the Congress within six months from the date of enactment of this section."

No comprehensive nutrition survey had ever been made in the United States. However, beginning in 1955, the Interdepartmental Committee on Nutrition for National Defense, which was composed of representatives of (1) the Departments of State; Defense; Agriculture; and Health, Education, and Welfare (HEW), (2) the Atomic Energy Commission, and (3) the International Security Agency (now the Agency for International Development), performed nutrition surveys in 33 foreign countries where the United States had a special military or economic interest. On June 30, 1965, the Committee was superseded by the Nutrition Section, Office of International Research, National Institutes of Health, HEW. On August 1, 1967, the Nutrition Section was reorganized as the Nutrition Program, National Center for Chronic Disease Control, Bureau of Disease Prevention and Environmental Control, Public Health Service (PHS), HEW.

To meet the congressional mandate, the Secretary of HEW, on January 5, 1968, designated the program to perform a National Nutrition Survey (NNS).¹ An ad hoc advisory committee, chaired by the Chief of the program, directed the development of NNS, including its sampling plan. Program

¹In this report the terms "National Nutrition Survey" (NNS) and "Ten-State Nutrition Survey" (TSNS) are used to describe the same study.

consultants helped develop the data requirements, and HEW's National Center for Health Statistics (NCHS) prepared the detailed sampling procedures.

The advisory groups recommended that obtaining information from the low-income population segment be emphasized, since it was expected that malnutrition would be most prevalent in this group and that sample surveys be taken within individual States.

Ten States were to be surveyed (see pp. 12 and 13)-- California, Kentucky, Louisiana, Massachusetts, Michigan, New York (including a separate survey for New York City), South Carolina, Texas, Washington, and West Virginia.

The surveys were conducted under contracts totaling about \$4.7 million awarded to the State departments of health in seven States and university schools of medicine in three States. The contractors were to obtain health, nutrition, and other data through interviews and clinical examinations of about 75,900 members of 22,840 sample households. The fieldwork included personal interviews to collect information on each member of the households and on the sociocultural structures of the households. Members were invited to a clinic for detailed health and nutrition examinations, which included physical and dental examinations and the taking of medical histories, body measurements, and blood and urine specimens.

Contracts were let during May and June 1968 for the surveys in five States. Contracts for surveys in the other five States were not let until the period April through June 1969. Fieldwork commenced about June 1968 and ended about May 1970. Additional contracts for support services, such as evaluating and interpreting data and X-rays and chemically analyzing specimens, totaled \$648,088.

HEW issued a report on TSNS to the Congress on July 3, 1972, more than 4-1/2 years after the Congress required the survey.

On May 7, 1969, while NNS was being performed, the Secretary of HEW, in testimony before the Senate Select Committee on Nutrition and Human Needs, announced the establishment of a National Nutrition Surveillance System. He

presented the system as a scientifically reliable program to continuously monitor the health effects and prevalence of malnutrition. The new program--the Health and Nutrition Examination Survey (HANES)--would examine, in continuing 2-year cycles, a sample of the civilian, noninstitutional population aged 1 through 74 residing in the continental United States, excluding Alaska.

- - - -

Since no comprehensive survey of the nutritional status of the U.S. population had ever been made, we examined the statistical design and implementation of NNS to determine whether its results would satisfy the congressional requirement that the extent and location of serious hunger and malnutrition in the United States be determined. We did not examine the validity of the data gathered.

CHAPTER 2

NNS ADMINISTRATIVE PROBLEMS

NNS had a history of administrative problems, including funding delays, frequent organizational relocation of the unit administering NNS and the loss of its personnel, and changes in the NNS data processing system.

FUNDING DELAYS

The Congress never appropriated funds for NNS because HEW and Bureau of the Budget (now the Office of Management and Budget) officials testified that HEW had sufficient funds--\$2 million--to conduct the survey.

An HEW planning document dated December 18, 1967, recognized the urgency of promptly providing funds for NNS:

"In order to provide as substantial a report as possible to Congress in only six months, time is of the essence. Therefore, funds must be made available no later than the first week of January to call for the convening of an advisory committee, and to undertake at once the initiation of the various contracts."

This document showed that about \$1.4 million would be needed from January 1 through June 30, 1968, to provide personnel for the Nutrition Program, to initiate surveys and complete the fieldwork in four States and New York City, and to initiate surveys in three other States.

In January 1968 HEW approved a plan for carrying out TSNS and directed the Nutrition Program to initiate planning with the States for the surveys. At that time the Assistant Secretary, Comptroller, assured the program that it could have about \$1.4 million from fiscal year 1968 funds for the surveys. By March 6, 1968, negotiations had been completed for surveys in Texas, Louisiana, New York State, New York City, Massachusetts, Kentucky, and West Virginia and for support services contracts providing data collection and processing systems.

In April 1968, the Assistant Secretary, Comptroller, informed the program that the fiscal year 1968 funds available for the surveys had been reduced to \$750,000. The Chief of the program noted that:

"The reduction in funding and the delay in authorizing contract negotiations and recruitment of personnel have jeopardized the entire National Nutrition Survey program and the basic program planning activities of our unit."

* * * * *

"Since floor discussion of the Partnership for Health amendments indicated HEW would reprogram \$2 million for the National Nutrition Survey, it would seem that to allocate only \$750,000 now would flout [sic] Congressional intent. Moreover, HEW would be losing valuable time in acting on programs to improve the health of the Nation."

Shortly after the \$750,000 was made available, contracts were awarded for surveys in Texas and Louisiana and for data processing support. The contracts for the State surveys were effective May 1, 1968. In June 1968 an additional \$975,000 in fiscal year 1968 funds were programmed for surveys in Kentucky, Michigan, and New York. Thus, about 7 months after the approval of legislation requiring a comprehensive survey, contracts had been awarded for surveys in 5 of the 10 States.

Other funding problems hampered TSNS. Data processing support provided by the Tulane University School of Medicine, New Orleans, was phased out during the fall of 1968 because of insufficient funds. Also, four of the five State surveys experienced cost overruns before completion of the fieldwork and required supplemental funding of about \$368,000.

In a memorandum dated May 6, 1969, the Deputy Administrator, Health Services and Mental Health Administration

(HSMHA),¹ HEW, stated that, since all TSNS funds must be taken from other HSMHA projects, it was essential to control the TSNS budget. Therefore, the Deputy Administrator set the total funding for TSNS and support services at about \$5.3 million. Contracts were made effective for surveys in the remaining five States from April through June 1969, or up to 19 months after approval of legislation requiring that the comprehensive survey be completed within 6 months. Contracts for the State surveys and support services totaled \$5,328,344.

ORGANIZATIONAL TRANSFERS OF THE NUTRITION PROGRAM AND LOSS OF PERSONNEL

From April 1968 through January 1971, the program had several organizational relocations. On April 1, 1968, the program became a part of HSMHA, a new HEW agency. On July 1, 1968, the program was assigned to the Division of Chronic Disease Programs, Regional Medical Programs Service, HSMHA. On June 24, 1970, the Secretary of HEW approved the transfer of the Nutrition Program to the Center for Disease Control (CDC), HSMHA. During January 1971, the program was relocated from Washington, D.C., to CDC headquarters at Atlanta.

On April 1, 1970, before formal approval of the transfer, the program was administratively transferred to CDC. At that time the program staff totaled 58--15 professional and 43 supportive. On January 18, 1971, the effective date of the relocation of the Nutrition Program to Atlanta, the staff totaled 16--12 professional and 4 supportive. Because only 7 of these 16--3 professional and 4 supportive--transferred to Atlanta, CDC had to restaff the program. At November 30, 1971, the staff totaled 50--20 professional and 30 supportive.

DATA PROCESSING SYSTEM CHANGES

In the spring of 1968, contracts were awarded to the Tulane University School of Medicine to process the dietary data from the Texas and Louisiana surveys and to the University of Texas Medical Branch, Galveston, to process the

¹Effective July 1, 1973, HSMHA was abolished and PHS was reorganized into five health agencies under the direction and control of the Assistant Secretary for Health. Most of HSMHA's functions were transferred to three agencies: the Center for Disease Control, the Health Resources Administration, and the Health Services Administration.

clinical and biochemical data from the surveys. However, before data from these surveys was completely processed, action was initiated to bring both data processing operations into the Nutrition Program because of funding shortages. This required the establishment of a data processing capacity within the program.

A February 1969 data processing status report noted that the existing TSNS data processing system had several deficiencies and proposed that the system be rewritten in a language for which processing equipment was more widely available.

HSMHA's Office of Systems Management and the program subsequently developed a system for processing TSNS data. However, the system's development was prolonged because the survey data was recorded in four different forms.

1. Texas, the first State to perform fieldwork, designed its own forms for recording data.
2. Louisiana, the second State to perform fieldwork, used a revised version of the Texas forms.
3. Kentucky, Michigan, New York State, and New York City used forms designed by the program.
4. California, Massachusetts, South Carolina, Washington, and West Virginia used a revised version of program forms.

From May through August 1969, the Office of Systems Management designed a system for processing survey data which used the forms designed by the program. In August 1969 the program began modifying the system to accommodate data from the five States using the revised version of the program forms. Finally, during the fall of 1971, data from the Texas and Louisiana surveys was processed into the revised system.

CHAPTER 3

APPRAISAL OF THE STATISTICAL DESIGN AND IMPLEMENTATION OF NNS

The purpose of NNS was to measure the extent of serious hunger and malnutrition throughout the United States. A November 1967 report of the Senate Committee on Labor and Public Welfare stated that:

"Knowledge of the extent and location of serious problems of hunger and malnutrition in the United States is almost nonexistent. The Surgeon General of the United States, for example, testified that the Federal Government does not know the extent of hunger or malnutrition anywhere in the United States. Nor, he said, is it the specific job of any Federal agency to find out."

Shortly after NNS was authorized in December 1967, the Chief of the Nutrition Program noted that:

"* * * a careful study of a large random sample drawn from the total population of the Nation would come closest to meeting the letter and probably the intent of * * * [NNS]. All can also agree that such a sample, even if available resources were capable of studying it, could not possibly be established in the time allowed, if at all."

* * * * *

"Since meaningful data on a truly national basis cannot be obtained at this time, studies conducted on the basis of regions, states, or some other definable units must be looked to and reconstructed in the best possible manner into a national picture of the problem."

STATISTICAL DESIGN

HEW made several assumptions in selecting a sample which would provide the best information on the magnitude of the

malnutrition problem in the United States and yet be feasible within budgetary, personnel, and time constraints. It assumed that:

1. Malnutrition would be most prevalent in the poverty population.
2. This population could be identified in geographic areas.
3. Within this population, nutrition problems would exist in certain groups, such as migrant workers; Spanish-speaking people in the Southwest; people in the inner cities; and people in industrial States to which a significant proportion of the work force had migrated from other parts of the country, particularly the South, during the last 10 to 20 years.

The States chosen for TSNS were judgmentally selected to provide a representative population of the target groups assumed to have a large number of poverty households and a higher prevalence of malnutrition and associated problems. Additional selection criteria included (1) geographic representation, (2) differences in economic and sociocultural composition, (3) desire by officials and professionals to participate in TSNS, (4) adequate expert manpower to conduct TSNS, and (5) specific considerations, such as maternal and infant mortality rates and variations in welfare and food distribution programs.

The sampling procedure was designed to select low-income households on the basis of their geographic location. The sample was selected from the Bureau of the Census enumeration districts, within each State to be surveyed, having the largest proportion of the population below the Orshansky Poverty Index.¹ The enumeration districts within each State were divided into three categories: urban, rural, and semiurban. The enumeration districts in each category were selected

¹A composite index of household economic status based on income, size, whether it is a farm or nonfarm household, and the sex and age of the head of the household.

starting with those having the highest percentage of poverty households until up to 25 percent of the total population in each category had been reached. Random samples were selected from this 25 percent--the target population.

In commenting on the sampling plan, the Chief of the Nutrition Program stated that:

"The sample population has been drawn to afford each participating state a sufficiently large enough population to draw conclusions concerning similar population groups within their state. In addition, efforts have been made to select a geographical distribution of states so that one can extrapolate to similar population groups in other states."

It was anticipated that TSNS would describe the target population in each State and similar populations in other States. However, the sample was not designed to represent the total low-income population within the States, because the method of selecting the sample enumeration districts excluded the low-income population living in those districts that had higher proportions of households with incomes above the poverty level.

In a letter dated July 30, 1973 (see app. I), the Assistant Secretary, Comptroller, HEW, in referring to the NNS design, pointed out that HEW's report qualified the survey results by noting that the survey population was not representative of the entire population.

IMPLEMENTATION

The procedures and standards published in the Manual for Nutrition Surveys of the Interdepartmental Committee on Nutrition for National Defense were used as TSNS guidelines. This manual emphasizes the importance of examining those in the sample. The statistical integrity of sample surveys depends upon substantial response rates. Therefore, no matter how good the survey design, low response may defeat the objective of providing unbiased estimates of the characteristics being studied.

The NNS sampling plan did not indicate what participation rate by members of sample households would be necessary to produce reliable results. However, a Nutrition Program official noted in various correspondence, without explanation, that, for usable survey results, the participation rate should be at least 75 to 85 percent.

In its July 3, 1972, report to the Congress, HEW stated that: "The results of the Ten-State Nutrition Survey indicated that a significant portion of the population surveyed was malnourished or was at high risk of developing nutritional problems." Elsewhere in the report, HEW stated that:

"The [TSNS] sampling procedure is believed to have yielded a representative sample of the low-income families, but those with higher incomes living within these areas, and who were included in the sample, might have special characteristics and not be representative of the middle- and high-income population. Therefore the population studied was not representative of the entire population within a country [sic] or state, and the survey findings cannot be extrapolated and applied to the overall population of states from which samples were drawn." (Underscored material was italicized in the report.)

We believe that the proper application of the sampling procedure may have resulted in data representative of the target population. However, the lack of response by members of sample households to the required clinical examination was such that the TSNS results should not be considered as

an adequate measure of the nutritional status of low-income family members as a whole.

HEW's report to the Congress showed that, of 29,935 households participating in TSNS, 23,846, or about 80 percent, were interviewed. More than 86,000 people were interviewed, about 41,000 of which were clinically examined. The extent of participation in each area surveyed follows.

	Members		
	<u>Total</u>	<u>Number attending clinic</u>	<u>Percentage attending clinic</u>
California	13,543	6,089	45
Kentucky	4,056	1,719	42
Louisiana	7,469	4,920	66
Massachusetts	10,669	4,376	41
Michigan	6,368	2,357	37
New York City	4,884	1,979	41
New York State	6,981	3,202	46
South Carolina	9,803	4,776	49
Texas	8,071	4,465	55
Washington	9,272	5,336	58
West Virginia	5,236	1,628	31
Total	<u>86,352</u>	<u>40,847</u>	47

HEW's report indicates that the participation rate was less than that shown above because:

1. The number of members of sample households selected to participate in some of the surveys but not interviewed and examined is not known. Therefore, the total number of members that should have participated was not included in the statistics HEW used to compute the participation rate shown in its report.
2. Although the survey sampling plan permitted the examination of volunteers (persons other than members of sample households), data obtained on them was not to be combined with data obtained from members of sample households, because data

on volunteers cannot be used in a scientifically reliable survey. However, HEW's report showed that the 86,352 persons interviewed included 13,858 volunteers and that the 40,847 persons examined at the clinics included 8,441 (21 percent) volunteers. If volunteers were eliminated from these totals, the participation rate shown above would be an overall rate of less than 45 percent for members of sample households who attended clinics. Each survey, except for the New York State survey, used volunteers. The use of volunteers ranged from less than 1 percent of individuals interviewed in the Kentucky survey to more than 41 percent of the individuals interviewed in the Washington survey.

HEW's report noted that:

"A comparison of these two groups of individuals (those who attended and those who did not attend clinics) is important in determining to what extent the data obtained during clinic visits are representative of the total survey population."

The report compares the ethnic groups, ages, educational levels, and family incomes of attendees and nonattendees, and from these comparisons HEW concluded that, in most respects, attendees differed little from nonattendees.

Although attendees and nonattendees were similar with regard to their ethnic groups, ages, and educational levels, their nutritional characteristics might not be similar. HEW believes that, of all the relationships evaluated, family income has the greatest relationship to nutritional status as demonstrated by HEW's major premise in designing the survey that malnutrition would be most prevalent in the poverty population. HEW notes in its report "* * *" that there was no consistent relationship between income level and the percentage of families attending and not attending clinics." Income data was available for only 57 percent of all households interviewed, as follows:

Households			
	<u>Number interviewed</u>	<u>Number providing income data</u>	<u>Percentage providing income data</u>
California	4,134	2,214	54
Kentucky	1,116	543	49
Louisiana	1,796	968	54
Massachusetts	3,093	1,635	53
Michigan	1,671	1,408	84
New York City	1,497	1,192	80
New York State	2,204	1,042	47
South Carolina	2,088	1,101	53
Texas	1,813	994	55
Washington	2,995	1,834	61
West Virginia	<u>1,439</u>	<u>611</u>	42
Total	<u>23,846</u>	<u>13,542</u>	57

Thus, the one demographic characteristic which would have permitted some subjective generalization about the nutritional status of attendees relative to that of nonattendees was not available for 43 percent of the households interviewed. Such a large gap in data raises serious question about the reasonableness of HEW's conclusion "* * * that in most respects people attending clinics * * * differed little from those not attending," particularly since similarity of the physical and biochemical characteristics of attendees and nonattendees was not determined. No intensive followup was made of nonattendees.

CONCLUSIONS

HEW's report stated that "The sampling procedure is believed to have yielded a representative sample of low-income families" and concluded that the survey findings cannot be considered representative of the population in the States which were surveyed. Thus, HEW implies that, although the survey results do not represent the entire population, they do represent the nutritional status of low-income families.

However, we believe the survey results should not be considered representative of the nutritional status of members of low-income households as a whole because (1) the scope of the survey population was limited to low-income households in certain areas, (2) an unknown number of members of sample households did not participate, (3) volunteers were often used instead of members of sample households, (4) substantial numbers of members from interviewed households were not clinically examined, and (5) income data was not available for a large number of interviewed households.

The extent to which the survey results do not represent low-income households as a whole cannot be determined since there was no indication in the sample design of the desired statistical reliability of the sample results.

We believe that the TSNS data should not be considered as reliable estimates of the prevalence of serious hunger and malnutrition in any of the survey populations, including members of low-income families. The TSNS data should be considered applicable to only those examined. The actual nutritional status of the low-income population may differ significantly from the TSNS results. Therefore, the Committee should be aware that, although TSNS provided data on the nutritional status of low-income participants, the NNS results may not represent the nutritional status of low-income populations of the areas surveyed.

AGENCY COMMENTS

In a letter dated July 30, 1973 (see app. I), the Assistant Secretary, Comptroller, HEW, stated

" * * * that GAO's report fairly and accurately portrays the conditions and problems encountered

by HEW in designing, conducting and reporting on the results of the National Nutrition Survey to the Congress * * *.

"HEW's initial survey efforts were complicated by the factors pointed out by GAO in their report, yet had to be performed in light of time constraints exceeding those present in most studies of this nature, the need to fund the activity through reprogramming of money budgeted for other activities, and changes in personnel. As pointed out by the GAO, this was the first comprehensive nutrition study in the United States. Therefore, considering the restrictions encountered during the survey, the results, in our opinion, are still an appropriate basis for reporting to the U.S. Congress.

"It should be noted that, in spite of the problems described by the GAO in their report, the Ten-State Nutrition Survey did evaluate the nutritional status of over 40,000 individuals, the largest number ever surveyed for nutritional status. The results of these evaluations indicated a variable proportion of the population surveyed was malnourished or was at risk of developing various nutritional problems. The results showed that the characteristics of malnutrition were often unique to the local situation and to specific subsegments of the population. The findings that malnutrition was most commonly found among black and Spanish-Americans and generally in individuals with low family income levels is of great use in the present planning and development of solutions to these problems."

CHAPTER 4

THE HEALTH AND NUTRITION EXAMINATION SURVEY

On May 7, 1969 the Secretary of HEW announced the establishment of a National Nutrition Surveillance System. (See pp. 6 and 7.) The Secretary directed HSMHA to establish a program to measure the nutritional status of the population of the United States and to monitor changes in that status. The Administrator of HSMHA, in turn, directed NCHS to develop and initiate such a program. (On July 1, 1973, NCHS became part of HEW's Health Resources Administration.) A task force developed a sampling plan which integrated the program with an ongoing Health Examination Survey being carried out by NCHS under the National Health Survey Act of 1956 (42 U.S.C. 242c). The new HANES program--Health and Nutrition Examination Survey--will examine, in continuing 2-year cycles, a sample of the civilian, noninstitutionalized population aged 1 through 74 residing in the continental United States, excluding Alaska.

The HANES sample design, developed jointly by statisticians of the Bureau of the Census and NCHS, provided for examining approximately 30,000 persons during the first 2-year cycle scheduled to end in the spring of 1974.

Each 2-year cycle will be carried out by mobile examination teams which will visit geographic areas throughout the study area. For the first cycle 65 locations were selected. Sample census enumeration districts were selected from each of the 65 locations and were classified as poverty or non-poverty districts. All districts in the poverty classification are to be sampled; one of every eight districts in the non-poverty classification is to be sampled. Within each sample district, persons from six households are to be surveyed and examined. Persons from groups most likely to have nutritional deficiencies, including the poor, young children, women of childbearing age, and the elderly, are selected for participation more frequently than others so that the nutritional status of these high risk groups may be more accurately estimated.

The HANES sample plan established measurements for determining the reliability of the sample results and assumed that 80-percent participation would be necessary to achieve

scientifically reliable results. After the examinations, detailed estimates of the nutritional status of the surveyed population will be made.

STATUS

The Director of the Division of Health Examination Statistics, the NCHS unit which administers HANES, has noted the importance of clinically examining each sample person to minimize the effect of any possible differences in the health and nutrition characteristics between persons examined and persons not examined.

At the first 19 locations where examinations were completed, 4,994 of 7,429 persons selected (67 percent) had been examined. From January to March 1972, at the HANES location in San Antonio, HANES officials decided to test, as we previously suggested, the effect on the response rate of paying sample persons to be clinically examined. Clinic participation significantly increased when sample persons were informed they would be paid for their testing at the mobile examination station. HANES has continued to pay \$10 to each sample person examined. At the first nine locations since payments began, 2,911 of 3,681 sample persons were examined, a 79-percent participation rate. In January 1973 the survey had been completed in 40 of the 65 locations with an overall participation rate of about 73 percent. Program officials estimate that, if the higher participation rates continue for the remaining locations, the overall participation rate for the first cycle will be about 75 percent. We believe that, if this rate is achieved, reasonable estimates of the prevalence of malnutrition can be made.

The HANES sample design called for annual broad national estimates of nutritional status with more detailed estimates available after the 2-year cycle. HANES officials said a report on HANES at the first 35 locations is scheduled to be published in about November 1973. This report will include information on nutrient intake and biochemical values. The results of the clinical examinations, including related body measurements, will be presented in a second report scheduled later in 1973.

CONCLUSIONS

The HANES sampling plan is designed to provide scientifically reliable estimates of the nutritional status of, and the prevalence of malnutrition in, the population. Although the population from which the HANES sample is taken includes more than those considered most likely to have nutritional problems, HANES should provide sufficient data to permit study of groups prone to nutritional deficiencies; that is, the poor, young children, women of childbearing age, and the elderly.

It appears that the nonresponse problem is being overcome, and, if the participation rate continues to improve, HANES should produce reliable data.

CHAPTER 5

SCOPE OF REVIEW

Our review examined the adequacy of the statistical designs for, and the implementation of, selected sample surveys for determining nutritional status--TSNS and HANES.

We reviewed basic legislation and administrative directives, correspondence, reports, contract files, and related documentation. We also discussed TSNS and HANES activities with officials and other program personnel.

Our review was performed primarily at CDC and NCHS headquarters in Atlanta and in Rockville, Maryland, respectively.



DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
OFFICE OF THE SECRETARY
WASHINGTON, D C 20201

JUL 30 1973

BEST DOCUMENT AVAILABLE

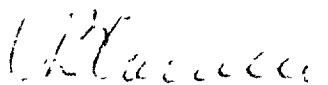
Mr. Willis L. Elmore
Assistant Director
Manpower and Welfare Division
General Accounting Office
Washington, D.C. 20548

Dear Mr. Elmore:

The Secretary has asked that I reply to your letter of April 26, in which you asked for our comments on a draft of your report to the Senate Select Committee on Nutrition and Human Needs, entitled, "Review of Selected Efforts For Determining Nutritional Health of the United States Population." Our comments are enclosed.

We appreciate the opportunity afforded us to review and comment on this report in draft form.

Sincerely yours,


James B. Cardwell
Assistant Secretary, Comptroller

Enclosure

APPENDIX I

COMMENTS OF THE DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE ON THE COMPTROLLER GENERAL'S REPORT TO THE SENATE SELECT COMMITTEE ON NUTRITION AND HUMAN NEEDS ENTITLED, "REVIEW OF SELECTED EFFORTS FOR DETERMINING NUTRITIONAL HEALTH OF THE UNITED STATES POPULATION"

Background

According to GAO, their review focused on the statistical design and implementation by HEW of a Congressionally-requested comprehensive survey to determine the incidence and location of serious hunger and malnutrition in the U.S. HEW issued the required report to the Congress on the results of the survey in July 1972; GAO identifies the survey in its report as the National Nutrition Survey (NNS) or the Ten-State Nutrition Survey (TSNS). GAO's review was made to determine whether the survey's results satisfied the Congressional requirement. Their report also discusses a continuing National Nutrition Surveillance System initiated by the Department to continuously monitor the health effects, and prevalence, of malnutrition. The program -- The Health and Nutrition Examination Survey (HANES) -- examines, on a continuing two-year cycle basis a sample of the civilian, noninstitutional population in the Continental U.S.

With respect to the Congressionally-requested survey, GAO concludes that: "Although the Ten-State Nutrition Survey provided data on the nutritional status of low-income individuals participating in the survey, the results of the survey may not be representative of the nutritional status of the low-income populations of the areas included in the survey." Conversely, in commenting on HANES, GAO concludes that it ". . . should produce data on the nutritional status of, and prevalence of malnutrition in, the population of the coterminous United States" -- assuming that certain problems now being encountered will dissipate as expected.

Department Comments

We believe that GAO's report fairly and accurately portrays the conditions and problems encountered by HEW in designing, conducting and reporting on the results of the National Nutrition Survey to the Congress. Also, we are pleased that GAO believes the continuing, cyclical Health and Nutrition Examination Survey will presumably be able to reach its goal of providing data on the nutritional status of, and prevalence of malnutrition in the population of the coterminous U.S.

HEW's initial survey efforts were complicated by the factors pointed out by GAO in their report, yet had to be performed in light of time constraints exceeding those present in most studies of this nature, the need to fund the

activity through reprogramming of money budgeted for other activities, and changes in personnel. As pointed out by the GAO, this was the first comprehensive nutrition study in the United States. Therefore, considering the restrictions encountered during the survey, the results, in our opinion, are still an appropriate basis for reporting to the U.S. Congress.

It should be noted that, in spite of the problems described by the GAO in their report, the Ten-State Nutrition Survey did evaluate the nutritional status of over 40,000 individuals, the largest number ever surveyed for nutritional status. The results of these evaluations indicated a variable proportion of the population surveyed was malnourished or was at risk of developing various nutritional problems. The results showed that the characteristics of malnutrition were often unique to the local situation and to specific subsegments of the population. The findings that malnutrition was most commonly found among blacks and Spanish-Americans and generally in individuals with low family income levels is of great use in the present planning and development of solutions to these problems.

GAO states in their report that, "The survey sample was not designed to be representative of the total low-income population within the States . . ." because it ". . .excluded low-income persons living in those districts that had a higher proportion of households with incomes above the poverty level." In this connection, we would like to point out that the HEW report was explicit in qualifying its results by stating that (Page 24), ". . .the population studied was not representative of the entire population. . ." and ". . .a significant portion of the population surveyed was malnourished. . ."

A relatively minor correction should be made in one sentence on Page 35, where the second complete sentence on the page (lines 4-6) should be replaced by the following two sentences:

"This report will include information on nutrient intake and biochemical values. The results of the clinical examinations including related body measurements will be presented in a second report scheduled later in 1973."

These changes are necessitated by what was probably the inadvertent omission of the word "biochemical" and by a more recent decision to present the findings in more than a single report.

The listing in Appendix 1 of "Principal Officials. . ." should include Jesse L. Steinfeld, along with William H. Stewart under the heading "Surgeon General of PHS."

PRINCIPAL OFFICIALS OF THE
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
RESPONSIBLE FOR ACTIVITIES
DISCUSSED IN THIS REPORT

	Tenure of office	
	From	To
SECRETARY OF HEALTH, EDUCATION, AND WELFARE:		
Caspar W. Weinberger	Feb. 1973	Present
Elliot L. Richardson	June 1970	Jan. 1973
Robert H. Finch	Jan. 1969	June 1970
Wilbur J. Cohen	Mar. 1968	Jan. 1969
John W. Gardner	Aug. 1965	Mar. 1968
ASSISTANT SECRETARY FOR HEALTH:		
Charles C. Edwards	Apr. 1973	Present
Richard L. Seggel (acting)	Jan. 1973	Apr. 1973
Merlin K. DuVal, Jr.	July 1971	Dec. 1972
Roger O. Egeberg	July 1969	July 1971
Philip R. Lee	Nov. 1965	Feb. 1969
SURGEON GENERAL OF PUBLIC HEALTH SERVICE:		
Jesse L. Steinfeld	Dec. 1969	Jan. 1973
William H. Stewart	Oct. 1965	July 1969
ADMINISTRATOR, HEALTH SERVICES AND MENTAL HEALTH ADMINISTRATION:		
Harold O. Buzzell	May 1973	June 1973
David J. Sencer (acting)	Jan. 1973	May 1973
Vernon E. Wilson	July 1970	Dec. 1972
Joseph T. English	Jan. 1969	July 1970
Irving J. Lewis (acting)	Sept. 1968	Jan. 1969
Robert Q. Marston	Apr. 1968	Sept. 1968
DIRECTOR, REGIONAL MEDICAL PROGRAMS SERVICE:		
Stanley W. Olson	Aug. 1968	May 1970

APPENDIX II

	<u>Tenure of office</u>	
	<u>From</u>	<u>To</u>
DIRECTOR, NATIONAL CENTER FOR HEALTH STATISTICS: Theodore D. Woolsey	Oct. 1967	Present
DIRECTOR, CENTER FOR DISEASE CONTROL: David J. Sencer	Feb. 1966	Present