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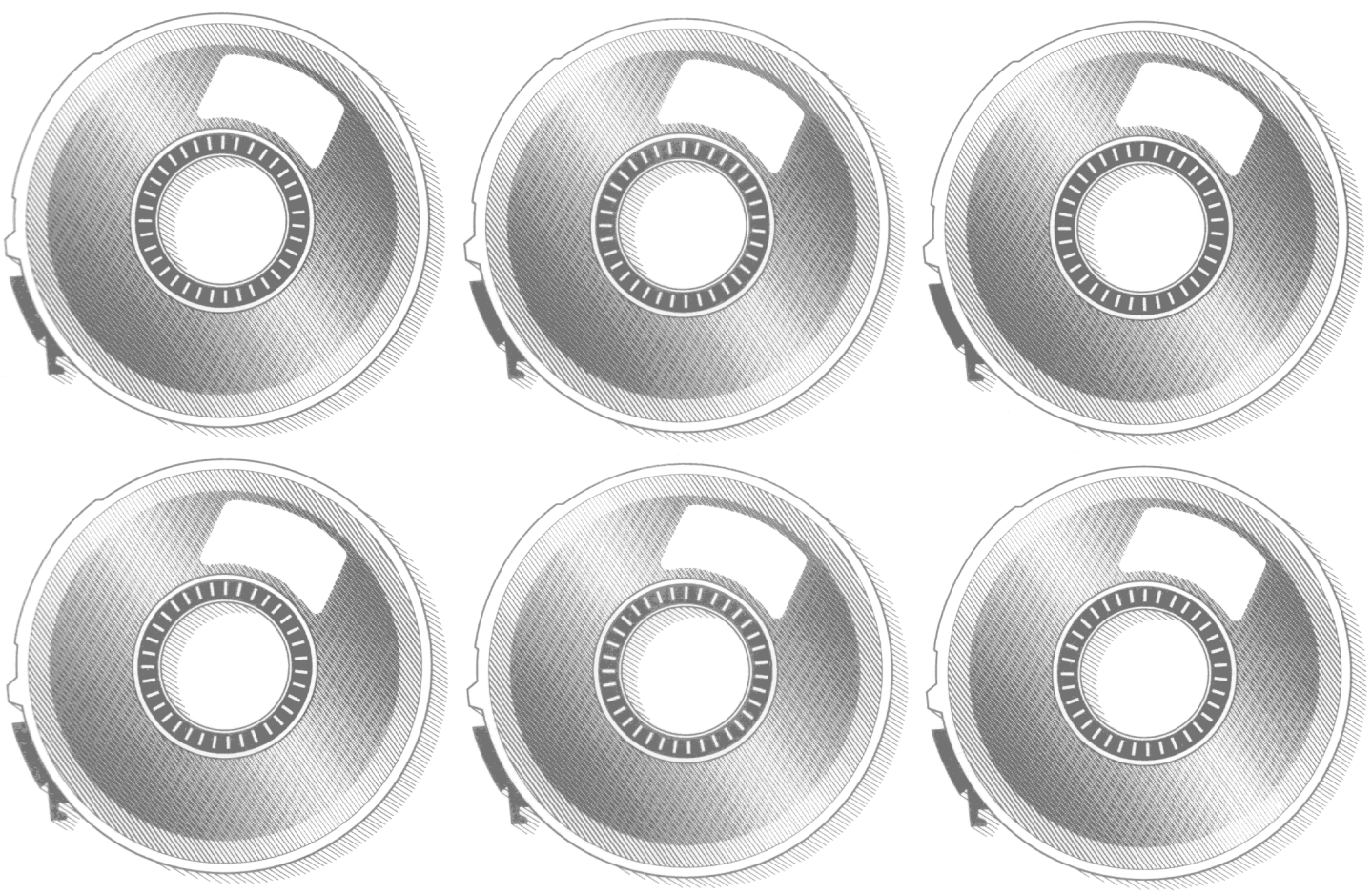
Public Use Data Tape Documentation

Biochemistry, Serology, Hematology,
Blood Slides, Urine Dipst.
Tape Number 4800 Version 2 (Reprint)
National Health and Nutrition Examination Survey, 1971-75



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control

CDC
CENTERS FOR DISEASE CONTROL

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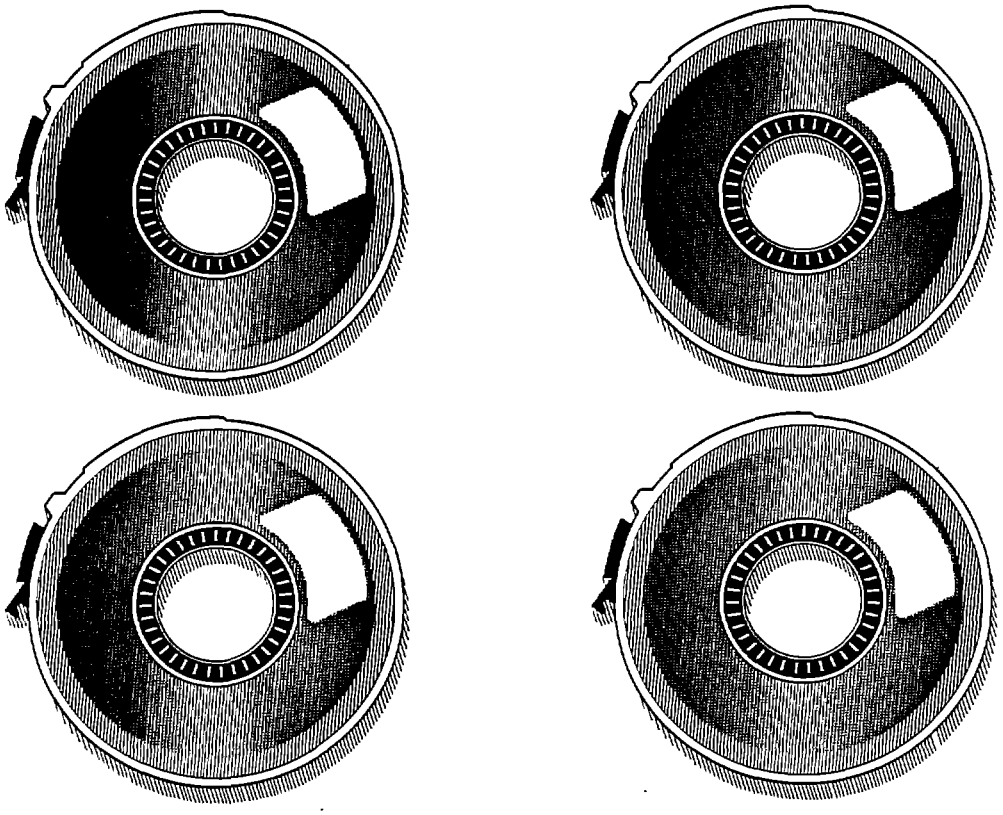

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control
National Center for Health Statistics

Hyattsville, MD
Reprinted October 1991

The data compilation and documentation necessary for the Biochemistry, Serology, Hematology, and Peripheral Blood Slides Data Tape were done by Clifford Johnson, Robinson Fulwood, Dale Hitchcock, Matthew Najjar, Everette Collins, Sidney Abraham, Arnold Engel and Evelyn Stanton of the Division of Health Examination Statistics, National Center for Health Statistics. A special note of gratitude is due Eugene Sides and Carol Flaherty who patiently typed and retyped this material.

CONTENTS

BIOCHEMISTRY, SEROLOGY, HEMATOLOGY, AND PERIPHERAL BLOOD SLIDES

Health and Nutrition Examination Survey, HANES I, 1971-1975

Description of Survey: A detailed description of the design, content and operation of HANES I is provided in the following reports: Plan and Operation of the Health and Nutrition Examination Survey, DHEW Pub. No. (HSM) 73-1310, Series 1, Nos. 10a and 10b, Public Health Service, Washington, D. C., U. S. Government Printing Office, February 1973. Also provided is a draft report on the augmentation survey of adults describing the relevant field work conducted between July 1974 and October 1975.

Target Population: HANES I was conducted on a nationwide probability sample of approximately 32,000 persons, ages 1-74 years, from the civilian, noninstitutionalized population of the coterminous United States, excepting those persons residing on Indian reservations. The survey started in April 1971 and for many survey components was completed in June 1974. The HANES I sample was selected so that certain population groups thought to be at high risk of malnutrition (persons with low incomes, preschool children, women of childbearing age and the elderly) were oversampled at known rates. Adjusted sampling weights were then computed within 60 age, sex and race categories in order to inflate the sample in such a manner as to closely reflect the noninstitutionalized population, ages 1-74 years, of the United States at the midpoint of the survey.

Although the main emphasis of HANES I was on nutrition, a subset of those sample persons aged 25-74 received a more detailed health examination which was continued through October 1975. No particular oversampling of subgroups of the population was done in this subsample (e.g., women of childbearing age were not oversampled as they were for the major nutrition component of HANES I). This subsample is also representative of the United States population aged 25-74 during the time of HANES I.

After the nutrition survey was completed, the detailed examination given to the 25-74 age group was continued until the total number of examined persons was approximately double the number of examinees who received the detailed examination during the nutrition survey.

In order to produce national estimates of the nutritional status of the U. S. population at an earlier date, a probability subsample of 35 stands of the 65 Primary Sampling Units (PSU's) was selected. This subsample also made it possible to produce national estimates of certain other aspects of health status in the population that were critically needed at an earlier date and examination components that for logistic reasons could not be continued for the remainder of the 65 PSU's. Included among the 35 PSU's were 10 of the 15 large certainty metropolitan areas and 1 PSU from each of the 25 noncertainty superstrata. The reduction from 15 to 10 large metropolitan areas was accomplished by randomly selecting one PSU from multiple-PSU standard metropolitan statistical areas; e.g., selecting the southern half of the Chicago

SMSA to represent the entire SMSA. (This selection procedure was based on operational considerations, and although unbiased, is recognized as not being statistically optimal.)

Data Collection: Information for all examined sample persons in HANES I was obtained by means of a household interview, a general medical history, a 24-hour dietary intake recall interview, a food frequency interview, a food program questionnaire, a general medical examination, dental, dermatological and ophthalmological examinations, anthropometric measurement, hand-wrist x-rays (of those ages 1-17 only) and 24 hematological, blood chemistry, and urological laboratory determinations.

In addition to the information received on all examined persons by means of the above questionnaires, procedures and measurements, the following data were gathered on the subsample of adults aged 25-74: a medical history supplement; supplementary questionnaires concerning arthritis, respiratory and cardiovascular conditions (when applicable); a health care needs questionnaire; a general well-being questionnaire; an extended medical examination; x-rays of the chest and hip and knee joints, audiometry; electrocardiography; goniometry; spirometry; pulmonary diffusion and tuberculin tests, along with additional laboratory determinations.

Use of HANES Data

With the goal of mutual benefit, NCHS requests the cooperation of recipients of data tapes in certain actions related to their use:

A. Any published material derived from the data should acknowledge the National Center for Health Statistics as the original source. It should also include a disclaimer which credits any analyses, interpretations, or conclusions reached to the author (recipient of the tape) and not to NCHS, which is responsible only for the initial data.

B. Consumers who wish to publish a technical description of the data will make a reasonable effort to insure that the description is not inconsistent with that published by NCHS. This does not mean, however, that NCHS will review such descriptions.

Errors in the Data Sets and Survey Differences

The data users' tapes have been subjected to a great deal of careful editing. However, due to the large volume of data in the series, it is likely that a small number of errors or discrepancies remain undetected. We would appreciate if any such errors are detected that they be brought to our attention so that new corrected copies of the tape can be created and errata sheets issued to previous purchasers.

Some of the continuous data items have extremely high or low values and we have verified that they do in fact appear that way on the hard documents; that is, we have verified that the values have not been incorrectly keyed.

In general, we have not attempted to resolve any differences that may exist between estimates derived from the various subsamples of HANES I. Nor have we made any comparisons between estimates from HANES I and previous surveys conducted by the Division of Health Examination Statistics.

Missing Data

Examination surveys are subject to the loss of information not only through the failure to examine all sample persons but also from the failure to obtain and record all items of information for examined persons. Other information obtained from the examined persons may subsequently be determined to be of unacceptable quality and excluded from the final data.

In order to provide national probability estimates for selected biochemical determinations from the first 65 locations of HANES, a procedure was developed to estimate the missing determinations for a sample person. Estimates were made for missing data on the basis of selecting another examined sample person of a similar age, sex, race, and location, and substituting that person's values for the missing items of data. All values imputed using this procedure have been indicated so by a special imputation code on the data tape. This method of imputing missing data has not been used at this time for locations 66-100 of HANES.

For children less than four years of age, the number of missing values was too great to use the previously defined imputation procedure. Therefore, all missing data for these children were not imputed but left as missing but applicable.

Variance Estimation

Because the Health and Nutrition Examination Survey is based upon a complex sample design, the assumptions of many statistical tests and routinely available statistical programs are not met. For this reason, when estimates of the variances of statistics from HANES are computed, the technique of estimation must be based upon complex sampling theory. In order to provide the user with the capability of estimating the complex sample variances, we have provided Strata and Primary Sampling Unit (PSU) codes on the HANES user tapes in tape positions 194-198. However, these codes are suitable for making variance estimates only for examination locations 1-65 and 1-100. To compute variance estimates for examination locations 1-35 or 66-100, it is necessary to recode the current Strata-PSU codes according to the specifications that follow. The resultant recoded Strata-PSU codes should be used only for locations 1-35 and 66-100.

One computer program that should be widely available sometime around the summer of 1978 as part of the Statistical Analysis System (available from the SAS Institute, Inc., Post Office Box 10066, Raleigh, North Carolina 27605) is capable of using the Strata-PSU codes provided for HANES to compute complex sample variances. Other programs may also be available.

In those Strata, referred to as certainty or self-representing Strata, the PSU codes are actually the segment numbers. Neither the Strata codes nor the PSU codes are the original codes used in the formation of the HANES sample design, but are none-the-less a unique recoding of the original codes. For further discussion of the sample design of HANES, the user should consult the publications of the National Center for Health Statistics--Series 1-Nos. 10a and 14 and the detailed note for tape positions 158-193.

Recode Specifications for Strata-PSU Codes

First.--Create a file with only those records in the file for examination locations 1-35.*

Second.--Retain the original Strata-PSU codes in Strata 7-10 and 13 in the original form as the recoded Strata-PSU codes.

Third.--Recode the remaining strata according to the chart below.

Fourth.--Repeat the process for examination locations 66-100.*

Old Strata # (tape positions 194-195)	New Strata #	New PSU #
01	01	001
02	01	002
03	03	001
06	03	002
04	04	001
05	04	002
11	11	001
12	11	002
14	14	001
21	14	002
15	15	001
16	15	002
17	17	001
20	17	002
18	18	001
19	18	002
22	22	001
25	22	002
23	23	001
24	23	002
26	26	001
27	26	002
28	28	001
29	28	002
30	30	001
35	30	002
31	31	001
32	31	002
33	33	001
34	33	002

*See detailed note for tape positions 158-193.

TAPE CHARACTERISTICS

Title: Biochemistry, Serology, Hematology, Peripheral Blood Slides and Urinary Data

Catalog Number: 4800

Data Set Name: HEHANESI.DU480011

Record Length: 600

Blocksize: 4200

Number of Records: 23808

Number of Reels: Varying

Recording Mode: Fixed Block, EBCDIC

Channel: 9 Track

Created by: Division of Health Examination Statistics
National Center for Health Statistics
Hyattsville, Maryland

General Notes

Asterisks on the Tape Description: Some of the data items were obtained only for a particular subsample of HANES. Consequently some of these items appear to have a great deal of missing data (coded as BLANK) due to nonresponse, but in fact the data are missing because the design of HANES dictated that the item was to be obtained only for a particular subsample. (For further discussion of the various subsamples in HANES the user should see the detailed note for tape positions 158-193.)

To alert the user to this fact asterisks were put on the tape description. One asterisk denotes that the data item was obtained only on examinees at locations 1-65, two asterisks denote that it was obtained only at locations 66-100 and three asterisks denote that it was obtained only on examinees receiving the detailed examination.

Demographic Information: An advance letter, announcing the forthcoming arrival of an interviewer from the U. S. Bureau of the Census, was mailed to each household that fell into the sample area. The interviewer subsequently visited the household to ascertain its composition and to administer a questionnaire, the primary purpose of which was to obtain demographic information. The questionnaire was administered to each potential sample person that was available and competent enough to respond to questions. In the event that a potential sample person was not at home at the time of interview, any responsible adult in the household was asked to respond to the questions for the absent person.

Demographic information for each of the examinees appears in tape positions 1-200.

Laboratory Examination: For all sample persons an attempt was made to obtain blood and urine samples. In the mobile examination center the laboratory technician was responsible for screening the urine specimen for sugar, albumin, and blood; for performing the basic hematology tests; and for preparing and packaging the urine and blood samples to be sent to the Center for Disease Control (CDC) in Atlanta, Georgia.

With the exception of the T-3 and T-4 determinations, which were performed by a private contractor, the remaining laboratory determinations described in this document were performed by CDC.

Some determinations were done on all sample persons, while others were performed only on detailed examinees or groups of examinees determined to be of special interest. Laboratory methodologies for all blood and urine determinations are available upon request from the Division of Health Examination Statistics.

Laboratory Data Editing: All laboratory results performed in the mobile examination center and at CDC were compiled and keypunched onto cards at CDC and sent to the Division of Health Examination Statistics. The data was checked for completeness of recording and certain range edits were run to check for unusually high or low values. Other edits were done to check for consistency and accuracy of the data. All unusual results were verified for correctness against original laboratory records on file in the Division of Health Examination Statistics or at CDC.

DEMOGRAPHIC DATA SUMMARY - HANES I

	Tape Positions
Sample sequence number	1
Size of place	10
SMSA-not SMSA	11
Type of living quarters	12
Land usage	13
If rural, asked - How many acres of land are included	14
If 10 acres or more asked - Sale of crops, etc. amount to $50 or more	15
If 10 acres or less asked - Sale of crops, etc. amount to $250 or more	16
Age - head of household	17
Sex - head of household	19
Highest grade attended - head of household	20
Race - head of household	22
Total number of persons in household	23
Total sample persons in household	25
Number of rooms in house	27
Is there piped water	28
If yes, is there hot and cold piped water	29
If yes to piped water - Does house have a sink with piped water	30
Does house have a range or cook stove	31
Does house have a refrigerator	32
Are kitchen facilities used by anyone not living in household	33
Total family income group	34

NOTE: The following income questions were asked only if "Total Family Income" was less than $7,000

During Past Year Did you or Any Members of Your Family Receive Money From:

Wages or salaries	36
If yes - How much altogether before deductions	37
Social Security or Railroad Retirement	41
If yes - How much altogether	42
Welfare payments or other public assistance	46
If yes - How much altogether	47
Unemployment or Workman's Compensation	51
If yes - How much altogether	52
Government employee pensions or private pensions	56
If yes - How much altogether	57

	Tape Positions
Dividends, interest or rent	61
If yes - How much altogether	62
Net income from own non-farm business, professional practice or partnership	66
If yes - How much altogether	67
Net income from a farm	71
If yes - How much altogether	72
Veteran's payments	76
If yes - How much altogether	77
Alimony, child support or contributions from persons not living in household	81
If yes - How much altogether	82
Any other income	86
If yes - How much altogether	87
Total amount	91
Family unit code	95
Relationship to head of household	100
Age at interview	101
Race of examined person	103
Sex of examined person	104
Marital status	105
Date of birth (month and year)	106
Place of birth	110
Highest grade of regular school ever attended	112
Did he finish the grade	114
Is he attending school now	115
Has he ever attended a school of any kind	116
If yes - What kind of school	117
Is any language other than English frequently spoken in the household	118
If yes - What language	119
What is your main ancestry or national origin	120
What was he doing most of past three months	122
If "something else" - What was he doing	123
If "keeping house" or "something else" - Did he work at a job or business at any time during the past three months	124
If "working" - Did he work full-time or part-time	125
Did he work at any time last week or the week before (not around house)	126
If no - Even though he did not work during that time, does he have a job or business	127

Biochemistry, Serology, Hematology and Peripheral Blood Slides and Urinary Data

SUMMARY

HEALTH AND NUTRITION EXAMINATION SURVEY (HANES I)

DEMOGRAPHIC DATA TAPE

(n=23808)

ALL SAMPLE PERSONS
LOCATIONS 1-100

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
			DEMOGRAPHIC DATA		
	1-5	5	Sample Sequence Number		
	6-9	4	Catalog Number 4271		
	10	1	Size of Place		Household Questionnaire See Detailed Notes
			1 - Urbanized area with 3,000,000 or more	3810	
			2 - Urbanized area with 1,000,000 to 2,999,999	2799	
			3 - Urbanized area with 250,000 to 999,999	3158	
			4 - Urbanized area under 250,000	2702	
			5 - Urban place 25,000 or more outside urbanized area	424	
			6 - Urban place 10,000 to 24,999 outside urbanized area	1179	
			7 - Urban place 2,500 to 9,999 outside urbanized area	1333	
			8 - Rural	8403	
	11	1	SMSA - Not SMSA		Household Questionnaire See Detailed Notes
			1 - In SMSA, in central city	7960	
			2 - In SMSA, not in central city	6591	
			4 - Not in SMSA	9257	
	12	1	Type of Living Quarters		Household Questionnaire
			1 - Housing Unit	23602	
			2 - Other unit	206	
	13	1	Land Usage		Household Questionnaire
			1 - All other	15648	
			2 - Rural	8160	
	14	1	If Rural, asked How Many Acres of Land Are Included?		Household Questionnaire
			1 - 10 or more acres	2205	
			2 - Less than 10 acres	5955	
			9 - Not applicable	15648	

Item	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	15	1	If 10 acres or more, asked if Sale of Crops, Etc. Amount to $50 or more?		Household Questionnaire
			2 - Yes	1317	
			4 - No	888	
			9 - Not applicable	21603	
	16	1	If 10 acres or less, asked if Sale of Crops, Etc. Amount to $250 or more?		Household Questionnaire
			3 - Yes	153	
			5 - No	5802	
			9 - Not applicable	17853	
			Age - Head of Household	20744	*
	17-18	2	16-92 as given	5	Household Questionnaire
			00 - Blank, but applicable	3059	*
			Blank		Household Questionnaire
	19	1	Sex - Head of Household	16660	
			1 - Male	4089	
			2 - Female	3059	
			Blank		*
	20-21	2	Highest Grade Attended - Head of Household	223	Household Questionnaire
			10 - None	82	
			21 - 1st grade	190	
			22 - 2nd grade	379	
			23 - 3rd grade	427	
			24 - 4th grade	421	
			25 - 5th grade	681	
			26 - 6th grade	702	
			27 - 7th grade	2405	
			28 - 8th grade	1121	
			31 - 9th grade	1458	
			32 - 10th grade	1133	
			33 - 11th grade	6153	
			34 - 12th grade	746	
			41 - First year of college	1081	
			42 - Second year of college	485	
			43 - Third year of college	1317	
			44 - Fourth year of college	1084	
			45 - Graduate	661	
			88 - Blank, but applicable	3059	
			Blank		

tem #	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	22	1	Race - Head of Household		*
			1 - White	16387	Household Questionnaire
			2 - Negro	4149	See Detailed Notes
			3 - Other	213	
			Blank	3059	
	23-24	2	Total Number of Persons in Household		
			01-19 - As given	23808	Household Questionnaire
	25-26	2	Total Sample Persons in Household		
			01-07 - As given	23808	Household Questionnaire
			Number of Rooms in House		
	27	1	1-8 - As given	19747	
			9 - 9 or more	1002	*
			Blank	3059	Household Questionnaire
	28	1	Is there piped water?		*
			1 - Yes	20043	
			2 - No	706	Household Questionnaire
			Blank	3059	
	29	1	If yes		*
			Is there Hot and cold piped water?		
			1 - Yes	19527	Household Questionnaire
			2 - No	518	
			9 - Not applicable	704	
			Blank	3059	
	30	1	If yes to piped water -		*
			Does House Have a Sink with Piped Water?		
			1 - Yes	19866	Household Questionnaire
			2 - No	181	
			9 - Not applicable	702	
			Blank	3059	
	31	1	Does House Have a Range or Cook Stove?		*
			1 - Yes	20513	
			2 - No	236	Household Questionnaire
			Blank	3059	

Item	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	32	1	Does House have a Refrigerator?		Household Questionnaire
			1 - Yes	20487	
			2 - No	262	
			Blank	3059	
	33	1	Are kitchen facilities used by anyone not living in household?		Household Questionnaire
			1 - Yes	641	
			2 - No	19418	
			9 - Not applicable	690	
			Blank	3059	
	34-35	2	Total Family Income Group		Household Questionnaire
			11 - Under $1,000 (including loss)	545	See Detailed Notes
			12 - $1,000-1,999	1329	
			13 - $2,000-2,999	1525	
			14 - $3,000-3,999	1526	
			15 - $4,000-4,999	1426	
			16 - $5,000-5,999	1301	
			17 - $6,000-6,999	1194	
			18 - $7,000-9,999	5023	
			19 - $10,000-14,999	4927	
			20 - $15,000-19,999	2295	
			21 - $20,000-24,999	1025	
			22 - $25,000 and over	873	
			88 - Blank, but applicable	819	
			NOTE: The following income questions were asked only if "Total Family Income" was less than $7,000.		
			DURING PAST YEAR DID YOU OR ANY MEMBERS OF YOUR FAMILY RECEIVE MONEY FROM:		
	36	1	Wages or Salaries?		Household Questionnaire
			1 - Yes	4738	
			2 - No	3384	
			8 - Blank, but applicable	614	
			9 - Not applicable	12013	
			Blank	3059	

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	37-40	4	If yes to above, how much altogether before deductions?		Household Questionnaire
			0001- 8000 - As given	4468	*
			8888 - Blank, but applicable	884	
			9999 - Not applicable	15397	
			Blank	3059	
	41	1	Social Security or Railroad Retirement?		Household Questionnaire
			1 - Yes	2914	*
			2 - No	5226	
			8 - Blank, but applicable	595	
			9 - Not applicable	12014	
			Blank	3059	
	42-45	4	If yes to above, how much altogether?		Household Questionnaire
			0001-6999 - As given	2852	*
			8888 - Blank, but applicable	657	
			9999 - Not applicable	17240	
			Blank	3059	
	46	1	Welfare Payments or Other Public Assistance?		Household Questionnaire
			1 - Yes	2414	*
			2 - No	5716	
			8 - Blank, but applicable	605	
			9 - Not applicable	12014	
			Blank	3059	
	47-50	4	If yes to above, how much altogether?		Household Questionnaire
			0001-6999 - As given	2383	*
			8888 - Blank, but applicable	636	
			9999 - Not applicable	17730	
			Blank	3059	
	51	1	Unemployment or Workmen's Compensation?		Household Questionnaire
			1 - Yes	441	*
			2 - No	7690	
			8 - Blank, but applicable	604	
			9 - Not applicable	12014	
			Blank	3059	

Item	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	52-55	4	If yes to above, how much altogether?		Household Questionnaire
			0001-6999 - As given	423	
			8888 - Blank, but applicable	622	
			9999 - Not applicable	19704	
			Blank	3059	
	56	1	Government Employee Pensions or Private Pensions?		Household Questionnaire
			1 - Yes	569	
			2 - No	7561	
			8 - Blank, but applicable	605	
			9 - Not applicable	12014	
			Blank	3059	
	57-60	4	If yes to above, how much altogether?		Household Questionnaire
			0001-6999 - As given	553	
			8888 - Blank, but applicable	621	
			9999 - Not applicable	19575	
			Blank	3059	
	61	1	Dividends, interest or rent?		Household Questionnaire
			1 - Yes	918	
			2 - No	7212	
			8 - Blank, but applicable	602	
			9 - Not applicable	12017	
			Blank	3059	
	62-65	4	If yes to above, how much altogether?		Household Questionnaire
			0001-6999 - As given	870	
			8888 - Blank, but applicable	650	
			9999 - Not applicable	19229	
			Blank	3059	
	66	1	Net income from own non-farm business, professional practice or partnership?		Household Questionnaire
			1 - Yes	350	
			2 - No	7772	
			3 - Loss	17	
			8 - Blank, but applicable	596	
			9 - Not applicable	12014	
			Blank	3059	

Item	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	67-70	4	If yes to above, how much altogether?		Household Questionnaire
			0000-7500 - As given	316	*
			8888 - Blank, but applicable	647	
			9999 - Not applicable	19786	
			Blank	3059	
	71	1	Net income from a farm?		Household Questionnaire
			1 - Yes	406	*
			2 - No	7705	
			3 - Loss	26	
			8 - Blank, but applicable	598	
			9 - Not applicable	12014	
			Blank	3059	
	72-75	4	If yes to above, how much altogether?		Household Questionnaire
			0000-7500 - As given	388	*
			8888 - Blank, but applicable	642	
			9999 - Not applicable	19719	
			Blank	3059	
	76	1	Veteran's Payments		Household Questionnaire
			1 - Yes	452	*
			2 - No	7679	
			8 - Blank, but applicable	601	
			9 - Not applicable	12017	
			Blank	3059	
	77-80	4	If yes to above, how much altogether?		Household Questionnaire
			0001-6999 - As given	441	*
			8888 - Blank, but applicable	612	
			9999 - Not applicable	19696	
			Blank	3059	
	81	1	Alimony, child support or contributions from persons not living in household?		Household Questionnaire
			1 - Yes	439	*
			2 - No	7691	
			8 - Blank, but applicable	602	
			9 - Not applicable	12017	
			Blank	3059	

em	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	82-85	4	If yes to above, how much altogether?		Household Questionnaire
			0001-6999 - As given	426	*
			8888 - Blank, but applicable	615	
			9999 - Not applicable	19708	
			Blank	3059	
	86	1	Any other income?		Household Questionnaire
			1 - Yes	325	*
			2 - No	7799	
			8 - Blank, but applicable	607	
			9 - Not applicable	12018	
			Blank	3059	
	87-90	4	If yes to above, how much altogether?		Household Questionnaire
			0001-6999 - As given	313	*
			8888 - Blank, but applicable	619	
			9999 - Not applicable	19817	
			Blank	3059	
	91-94	4	Total Amount (Total of Positions 37-90)		Household Questionnaire
			0000-6999 - As given	7676	*
			8888 - Blank, but applicable	1060	
			9999 - Not applicable	12013	
			Blank	3059	
	95-99	5	FAMILY UNIT CODE		Computer generated
			00001-23306	23808	See Detailed Notes
	100	1	Relationship to Head of Household		Household Questionnaire
			1 - Head (1 person living alone or with non-relatives)	2244	
			2 - Head (2 or more related persons in family)	6238	
			3 - Wife	6513	
			4 - Child	7818	
			5 - Other relative	995	
	101-2	2	Age at Interview		Household Questionnaire
			01-74 - As given	23808	

em	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	103	1	Race of Examined Person		Household Questionnaire
			1 - White	19111	See Detailed Notes
			2 - Negro	4424	
			3 - Other	273	
	104	1	Sex of Examined Person		Household Questionnaire
			1 - Male	10152	
			2 - Female	13656	
	105	1	Marital Status		Household Questionnaire
			1 - Under 17	6781	
			2 - Married	11738	
			3 - Widowed	1493	
			4 - Never married	2475	
			5 - Divorced	762	
			6 - Separated	544	
			8 - Blank, but applicable	15	
	106-9	4	Date of Birth (month, year)		Household Questionnaire
			01-12 - Month as given	23808	
			00-99 - Year (1896-1973) as given	23808	
	110-11	2	Place of Birth		Household Questionnaire
			01-02, 04-06, 08-13, 15-42, 44-51, 53-56, 60-81, 91-97 - As given	23663	See Detailed Notes
			88 - Blank, but applicable	145	

em	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	112-13	2	Highest Grade of regular school ever attended?		Household Questionnaire
			10 - None	252	
			21 - 1st Grade	444	
			22 - 2nd Grade	457	
			23 - 3rd Grade	586	
			24 - 4th Grade	691	
			25 - 5th Grade	687	
			26 - 6th Grade	815	
			27 - 7th Grade	902	
			28 - 8th Grade	2165	
			31 - 9th Grade	1207	
			32 - 10th Grade	1458	
			33 - 11th Grade	1132	
			34 - 12th Grade	5751	
			41 - First year of college	852	
			42 - Second year of college	1007	
			43 - Third year of college	418	
			44 - Fourth year of college	1134	
			45 - Graduate	756	
			77 - Special School	18	
			88 - Blank, but applicable	110	
			99 - Not applicable	2966	
	114	1	Did he finish the grade?		Household Questionnaire
			1 - Yes	13787	
			2 - No	6537	
			8 - Blank, but applicable	266	
			9 - Not applicable	3218	
	115	1	Is he attending school now?		Household Questionnaire
			1 - Yes	3857	*
			2 - No	476	
			8 - Blank, but applicable	0	
			9 - Not applicable	16416	
			Blank	3059	

em	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	116	1	Has he ever attended a school of any kind?		Household Questionnaire
			1 - Yes	668	
			2 - No	1127	
			8 - Blank, but applicable	0	
			9 - Not applicable	18954	
			Blank	3059	
	117	1	If yes, what kind of school?		Household Questionnaire
			1 - Nursery	150	
			2 - Kindergarten	362	
			3 - Other	73	
			4 - Headstart	45	
			5 - Daycare	38	
			8 - Blank, but applicable	0	
			9 - Not applicable	20081	
			Blank	3059	
	118	1	Is any language other than English frequently spoken in the household?		Household Questionnaire
			1 - Yes.	2682	
			2 - No	20923	
			8 - Blank, but applicable	203	
	119	1	If yes, what language?		Household Questionnaire
			0 - German	168	
			1 - Italian	161	
			2 - French	422	
			3 - Polish	116	
			4 - Russian	20	
			5 - Spanish	1274	
			6 - Chinese	39	
			7 - Other language	468	
			8 - Blank, but applicable	217	
			9 - Not applicable	20923	

em	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	120-21	2	What is your main ancestry or national origin?		Household Questionnaire
			00 - German	4022	
			01 - Irish	3021	
			02 - Italian	777	
			03 - French	1235	
			04 - Polish	636	
			05 - Russian	223	
			06 - English	2979	
			07 - Spanish	483	
			08 - Mexican	717	
			09 - Chinese	48	
			10 - Japanese	53	
			11 - American Indian	380	
			12 - Negro	4428	
			13 - Jewish	63	
			14 - American	1652	
			15 - Other	2451	
			88 - Blank, but applicable	67	
			99 - Don't know	573	
	122	1	What was he doing most of past three months?		Household Questionnaire
			1 - Working	8058	
			2 - Keeping house	5883	
			3 - Something else	3069	
			8 - Blank, but applicable	28	
			9 - Not applicable	6770	
	123	1	If "something else" from above, what was he doing?		Household Questionnaire
			0 - Laid off	46	
			1 - Retired	1484	
			2 - Student	822	
			3 - Other	141	
			4 - Ill	152	
			5 - Staying home	69	
			6 - Looking for work	71	
			7 - Unable to work	285	
			8 - Blank, but applicable	27	
			9 - Not applicable	20711	

tem	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	124	1	If "keeping house" or "something else" from above, did he work at a job or business at any time during the past three months?		Household Questionnaire
			1 - Yes	1272	
			2 - No	7675	
			8 - Blank, but applicable	37	
			9 - Not applicable	14824	
	125	1	If "Working" from above, did he work full-time or part-time?		Household Questionnaire
			1 - Full-time	7278	
			2 - Part-time	2046	
			8 - Blank, but applicable	39	
			9 - Not applicable	14445	
	126	1	Did he work at any time last week or the week before? (not around house)		Household Questionnaire
			1 - Yes.	8318	
			2 - No	942	
			8 - Blank, but applicable	104	
			9 - Not applicable	14444	
	127	1	If "no" to above, even though he did not work during that time, does he have a job or business?		Household Questionnaire
			1 - Yes	543	
			2 - No	8072	
			8 - Blank, but applicable	105	
			9 - Not applicable	15088	
	128	1	If "no" in Position 126, was he looking for work or on lay-off from a job?		Household Questionnaire
			1 - Yes	644	
			2 - No	7971	
			8 - Blank, but applicable	105	
			9 - Not applicable	15088	

tem #	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	129	1	If yes to above - which?		
			1 - Looking	467	Household Questionnaire
			2 - Lay-off	144	
			3 - Both	34	
			8 - Blank, but applicable	105	
			9 - Not applicable	23058	
	130	1	Class of Worker		Household Questionnaire
			1 - Private paid	6776	
			2 - Government-Federal	335	
			3 - Government-Other	1294	
			4 - Own	980	
			5 - Non-paid	135	
			6 - Never worked	63	
			8 - Blank, but applicable	29	
			9 - Not applicable	14196	
	131	1	If self-employed in "own" business and not a farm, is the business incorporated?		Household Questionnaire
			1 - Yes	111	
			2 - No	719	
			8 - Blank, but applicable	30	
			9 - Not applicable	22948	
	132-34	3	Business or Industry Code		Household Questionnaire
			000 - Blank, but applicable	4	See Detailed Notes
			017-999 - As given	23804	
	135-37	3	Occupation Code		Household Questionnaire
			000 - Blank, but applicable	6	See Detailed Notes
			001-996 - As given	23802	
	138-43	6	Date of Examination		Control Record
			Month - 01-12 as given	23808	
			Day - 01-31 as given	23808	
			Year - 71-75 as given	23808	

em	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	144-45	2	Age at Examination		Computer generated
			01-75 - As given	23808	
	146	1	Farm		Computer generated
			1 - Farm	1470	See Detailed Notes
			2 - Nonfarm	22338	
	147-49	3	Poverty Index (X.XX)		Computer generated
			001-997 - As given	20002	See Detailed Notes
			998 - Index computed 998 or greater	25	*
			999 - Unknown	722	
			Blank	3059	
	150	1	Region		Computer generated
			1 - Northeast	5211	See Detailed Notes
			2 - Midwest	5892	
			3 - South	6329	
			4 - West	6376	
	151	1	FOOD PROGRAMS APPLICABILITY		Food Programs Quest.
			1 - Not applicable	14683	*
			2 - No program available	112	
			3 - Food stamps available	5142	
			4 - Commodities available	760	
			8 - Blank, but applicable	52	
			Blank	3059	
	152	1	Are you certified to participate in the food stamp program?		Food Programs Quest.
			1 - Yes	2374	*
			2 - No	1934	
			9 - Don't know	126	
			Blank	19374	

em	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	153	1	Are you buying stamps now?		Food Programs Quest.
			1 - Yes, regularly	1965	*
			2 - Yes, occasionally	89	
			3 - No	307	
			8 - Blank, but applicable	13	
			Blank	21434	
	154	1	What is the main reason you aren't participating in the program?		Food Programs Quest.
			1 - No need	33	
			2 - Not enough money at the time	121	*
			3 - No transportation	16	
			4 - Pride	8	
			5 - Other	111	
			8 - Blank, but applicable	18	
			Blank	23501	
	155	1	Are you certified to participate in the commodity distribution program?		Food Programs Quest.
			1 - Yes	215	*
			2 - No	423	
			9 - Don't know	25	
			Blank	23145	
	156	1	Are you receiving commodity foods now for your family?		Food Programs Quest.
			1 - Yes, regularly	159	*
			2 - Yes, occasionally	14	
			3 - No	39	
			8 - Blank, but applicable	3	
			Blank	23593	
	157	1	Why aren't you participating in the program?		Food Programs Quest.
			1 - No need	16	
			2 - No transportation	5	*
			3 - Pride	2	
			4 - Other	15	
			8 - Blank, but applicable	1	
			Blank	23769	

tem #	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
			Sample Weights		
	158-163	6	Detailed Persons - Locations 01-35 Blank	1892 21916	See Detailed Notes
	164-169	6	All Sample Persons - Locations 01-35 Blank	10127 13681	See Detailed Notes
	170-175	6	Detailed Persons - Locations 01-65 Blank	3854 19954	See Detailed Notes
	176-181	6	All Sample Persons - Locations 01-65 Blank	20749 3059	See Detailed Notes
	182-187	6	Detailed Persons - Locations 66-100 Blank	3059 20749	See Detailed Notes
	188-193	6	Detailed Persons - Locations 1-100 Blank	6913 16895	See Detailed Notes
	194-195	2	Strata[1/]		
	196-198	3	Primary Sampling Units[1/]		
	199-200	2	Data User Work Area		

[1/] Use only for producing variance estimates for examination locations 1-65 or 1-100. See the General Note titled "Variance Estimation" for producing variance estimates for examination locations 1-35 or 66-100.

HEALTH AND NUTRITION EXAMINATION SURVEY (HANES I)

Biochemistry, Serology, Hematology, and Peripheral Blood Slides and Urinary Data
(n=23808)

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	201-204	4	Catalog Number 4800		
	205-206	2	Hour of Collection 01-12 - As given 88 - Blank, but applicable	 23735 73	
	207	1	AM or PM 1 - AM 2 - PM 8 - Blank, but applicable	 9826 13909 73	
	208-209	2	Hours since last meal? 00-70 - As given 88 - Blank, but applicable	 23503 305	
	210	1	Type of last meal? 1 - Light 2 - Medium 3 - Heavy 8 - Blank, but applicable	 8114 10503 4658 533	
	211	1	Have you taken vitamins within last 30 days? 1 - Yes 2 - No 8 - Blank, but applicable	 7421 16038 349	
	212-213	2	How many days since vitamins taken? 00-30 - As given 88 - Blank, but applicable 99 - Not applicable	 7421 349 16038	

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	214	1	Have you taken minerals within last 30 days?		
			1 - Yes	4317	
			2 - No	19130	
			8 - Blank, but applicable	361	
	215-216	2	How many days since minerals taken?		
			00-30 - As given	4317	
			88 - Blank, but applicable	361	
			99 - Not applicable	19130	
	217	1	Have you taken aspirin within last 30 days?		
			1 - Yes	12504	
			2 - No	10939	
			8 - Blank, but applicable	365	
	218-219	2	How many days since aspirin taken?		
			00-30 - As given	12504	
			88 - Blank, but applicable	365	
			99 - Not applicable	10939	
	220	1	Have you taken diuretics within last 30 days?		
			1 - Yes	1220	
			2 - No	21731	
			8 - Blank, but applicable	857	
	221-222	2	How many days since diuretics taken?		
			00-30 - As given	1220	
			88 - Blank, but applicable	857	
			99 - Not applicable	21731	

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	223	1	Have you taken other medication within last 30 days?		
			1 - Yes	9478	
			2 - No	13827	
			8 - Blank, but applicable	503	
	224-225	2	How many days since other medication taken?		
			00-30 - As given	9478	
			88 - Blank, but applicable	503	
			99 - Not applicable	13827	
	226	1	Physical activity in past 24 hours?		
			1 - None	71	
			2 - Light	5178	
			3 - Moderate	12167	
			4 - Heavy	5782	
			8 - Blank, but applicable	610	
	227-230	4	Serum Protein (Gm/100ml) (XXX.X - decimal not shown on tape)		
			0044-0133 - As given	20026	*
			9999 - Missing value (ages 1-3)	723	
			Blank	3059	
	231	1	Serum Protein Imputation		
			0 - Not imputed	18769	*
			1 - Missing value imputed	1257	
			9 - Missing value not imputed (ages 1-3)	723	
			Blank	3059	

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	232-235	4	Serum Albumin (Gm/100ml) (XXX.X - decimal not shown on tape)		
			0027-0061 - As given	20025	*
			9999 - Missing value (ages 1-3)	724	
			Blank	3059	
	236	1	Serum Albumin Imputation		
			0 - Not imputed	18770	*
			1 - Missing value imputed	1255	
			9 - Missing value not imputed (ages 1-3)	724	
			Blank	3059	
	237-240	4	Serum Cholesterol (Mg/100ml) (XXXX)		
			0049-0793 - As given	23000	
			8888 - Missing value	81	
			9999 - Missing value (ages 1-3)	727	
	241	1	Serum Cholesterol Imputation		
			0 - Not imputed	22074	
			1 - Missing and imputed	926	
			8 - Missing value not imputed	81	
			9 - Missing value not imputed (ages 1-3)	727	
	242-245	4	Serum Magnesium (Meq/liter) (XX.XX - decimal not shown on tape)		
			0082-0289 - As given	23025	
			8888 - Missing value	54	
			9999 - Missing value (ages 1-3)	729	
	246	1	Serum Magnesium Imputation		
			0 - Not imputed	21905	
			1 - Missing value imputed	1120	
			8 - Missing value not imputed	54	
			9 - Missing value not imputed (ages 1-3)	729	

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	247-250	4	Hemoglobin (Gm/100ml)(XXX.X - decimal not shown on tape)		SPECIAL NOTE:
			0050-0224 - As given	22741	See Page 66
			7777 - Unacceptable data	1049	
			8888 - Missing value	18	
	251	1	Hemoglobin Imputation		SPECIAL NOTE:
			0 - Not imputed	21699	See Page 66
			1 - Missing value imputed	1042	
			7 - Unacceptable data not imputed	1049	
			8 - Missing value not imputed	18	
	252-254	3	Hematocrit (Percent)		SPECIAL NOTE:
			019-068 - As given	22709	See Page 66
			777 - Unacceptable data	1049	
			888 - Missing values	50	
	255	1	Hematocrit Imputation		SPECIAL NOTE:
			0 - Not imputed	22155	See Page 66
			1 - Missing value imputed	554	
			7 - Unacceptable data not imputed	1049	
			8 - Missing values not imputed	50	
	256-259	4	Serum Iron (μg/100ml) (XXXX. - decimal not shown on tape)		SPECIAL NOTE:
			0017-0396 - As given	18882	See Page 66
			7777 - Unacceptable data	1088	
			9999 - Missing value (ages 1-3)	779	
			Blank	3059	*
	260	1	Serum Iron Imputation		SPECIAL NOTE:
			0 - Not imputed	17265	See Page 66
			1 - Missing value imputed	1617	
			7 - Unacceptable data not imputed	1088	
			9 - Missing value not imputed (ages 1-3)	779	
			Blank	3059	*

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	261-264	4	Total Iron Binding Capacity (µg/100ml) (XXXX. - decimal not shown on tape)		SPECIAL NOTE: See Page 66
			0112-0717 - As given	18907	
			7777 - Unacceptable data	1088	
			9999 - Missing value (ages 1-3)	754	
			Blank	3059	*
	265	1	Total Iron Binding Capacity Imputation		SPECIAL NOTE:
			0 - Not imputed	17623	See Page 66
			1 - Missing value imputed	1284	
			7 - Unacceptable data not imputed	1088	
			9 - Missing value not imputed (ages 1-3)	754	
			Blank	3059	*
	266-269	4	% Transferrin Saturation (Percent) (XXX.X - decimal not shown on tape)		SPECIAL NOTE: See Page 66
			0032-1000 - As given	18877	
			7777 - Unacceptable data	1088	
			9999 - Missing value (ages 1-3)	784	
			Blank	3059	*
	270	1	% Transferrin Saturation Imputation		SPECIAL NOTE:
			0 - Not imputed	17238	See Page 66
			1 - Missing value imputed	1639	
			7 - Unacceptable data not imputed	1088	
			9 - Missing value not imputed (ages 1-3)	784	
			Blank	3059	*

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	271-273	3	Serum Sodium (XXX. - decimal not shown on tape)		
			121-157 - As given	3003	**
			888 - Blank, but applicable	56	
			Blank	20749	
	274-276	3	Serum Potassium (XX.X - decimal not shown on tape)		
			027-054 - As given	2992	**
			888 - Blank, but applicable	67	
			Blank	20749	
	277-279	3	Serum Folate (XX.X - decimal not shown on tape)		
			014-776 - As given	2978	**
			888 - Blank, but applicable	81	
			Blank	20749	
	280-282	3	Sedimentation Rate (XXX. - decimal not shown on tape)		
			001-072 - As given	18165	*
			888 - Blank, but applicable	2584	
			Blank	3059	
			WEIGHTS		See Detailed Notes
	283-288	6	All Sample Persons - Locations 1-65 (For Hemoglobin and Hematocrit Only)	20749	
			Blank	3059	
	289-294	6	All Sample Persons - Locations 1-65 (For Iron, Total Iron Binding Capacity and % Transferrin Saturation Only)	20749	
			Blank	3059	
	295-300	6	Blank - Data User Work Area		

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
			PERIPHERAL BLOOD FILM		**PERIPHERAL BLOOD FILM**
	301-310	10	**Blank - Data User Work Area**		
	311-312	2	**Leukoblasts (Percent of 100 Cells)**		
			00 - As given	5854	***
			Blank	17954	
	313-314	2	**Promyelocytes (Percent of 100 Cells)**		
			00-06 - As given	5854	***
			Blank	17954	
	315-316	2	**Myelocytes (Percent of 100 Cells)**		
			00-19 - As given	5854	***
			Blank	17954	
	317-318	2	**Metamyelocytes (Percent of 100 Cells)**		
			00-08 - As given	5854	***
			Blank	17954	
	319-320	2	**Band Neutrophils (Percent of 100 Cells)**		
			00-22 - As given	5854	***
			Blank	17954	
	321-322	2	**Segmented Neutrophils (Percent of 100 Cells)**		
			02-94 - As given	5854	***
			Blank	17954	
	323-324	2	**Eosinophils (Percent of 100 Cells)**		
			00-17 - As given	5854	***
			Blank	17954	

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
					PERIPHERAL BLOOD FILM
	325-326	2	Basophils (Percent of 100 Cells)		
			00-03 - As given	5854	***
			Blank	17954	
	327-328	2	Lymphocytes (Percent of 100 Cells)		
			03-95 - As given	5854	
			Blank	17954	***
	329-330	2	Monocytes (Percent of 100 Cells)		
			00-20 - As given	5854	
			Blank	17954	***
	331	1	Anisocytosis (Variation in Cell Size)		
			0 - Normal	5450	
			1-4 - Gradation to Abnormal	404	
			Blank	17954	***
	332	1	Poikilocytosis (Variation in Cell Shape)		
			0 - Normal	5690	
			1-3 - Gradation to Abnormal	164	
			Blank	17954	***
	333	1	Macrocytosis (Large Cell Prevalence)		
			0 - Normal	5616	
			1-3 - Gradation to Abnormal	238	
			Blank	17954	***
	334	1	Microcytosis (Small Cell Prevalence)		
			0 - Normal	5701	
			1-4 - Gradation to Abnormal	153	
			Blank	17954	***

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
					PERIPHERAL BLOOD FILM
	335	1	Hypochromia (Staining Intensity of Cells)		
			0 - Normal	5732	***
			1-4 - Gradation to Abnormal	122	
			Blank	17954	
	336-337	2	Number of Nucleated Red Cells Per 100 White Cells		
			00 - Normal	5851	
			01-08 - As given	3	
			Blank	17954	***
	338	1	Platelet Estimate		
			0 - Normal	5577	
			2 - Increased Platelet Count	208	
			3 - Decreased Platelet Count	65	
			9 - No Estimate	4	
			Blank	17954	***
			MISCELLANEOUS FINDINGS		See Detailed Note
	339-340	2	First Glossary Code		
			01-27, 35-64, 70-73 - As given	678	
			88 - Blank, Slide Read	5176	
			Blank	17954	***
	341-342	2	Second Glossary Code		
			01-27, 35-64, 70-73 - As given	70	
			88 - Blank, slide read	5784	
			Blank	17954	***

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
					PERIPHERAL BLOOD FILM
	343-344	2	Third Glossary Code		
			01-27, 35-64, 70-73 - As given	15	***
			88 - Blank, slide read	5839	
			Blank	17954	
	345-346	2	Fourth Glossary Code		
			01-27, 35-64, 70-73 - As given	5	
			88 - Blank, slide read	5849	
			Blank	17954	***
	347-348	2	Fifth Glossary Code		
			01-27, 35-64, 70-73 - As given	2	
			88 - Blank, slide read	5852	
			Blank	17954	***
	349-350	2	Sixth Glossary Code		
			01-27, 35-64, 70-73 - As given	1	
			88 - Blank, slide read	5853	
			Blank	17954	***
			MORPHOLOGICAL INTERPRETATIONS		See Detailed Note
	351-352	2	First Glossary Code		
			01-19, 31-43, 50-60, 70-71 - As given	5854	
			Blank	17954	***
	353-354	2	Second Glossary Code		
			01-19, 31-43, 50-60, 70-71 - As given	137	
			88 - Blank, slide read	5717	
			Blank	17954	***

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
					PERIPHERAL BLOOD FILM
	355-356	2	Third Glossary Code		
			88- Blank, slide read	5854	***
			Blank	17954	
	357-358	2	Fourth Glossary Code		
			88 - Blank, slide read	5854	
			Blank	17954	***
	359-360	2	Fifth Glossary Code		
			88 - Blank, slide read	5854	
			Blank	17954	***
	361-362	2	Sixth Glossary Code		
			88 - Blank, slide read	5854	
			Blank	17954	***
	363	1	Quality of Slide		
			1 - Good-Satisfactory	4471	
			2 - Fair	969	
			3 - Other	805	
			9 - Blank, but applicable	668	
			Blank	16895	***
	364	1	Technician (Reader) Number		
			1-5 - As given	5854	
			9 - Blank, but applicable	1059	
			Blank	16895	***
	365	1	Slide Reading Results		
			1 - Missing or Unsatisfactory	1059	
			2 - Available	5854	
			Blank	16895	***
	366-400	35	Blank - Data User Work Area		

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
			SEROLOGY		
	401-403	3	Polio I		See Detailed Note
			Titer Range:		
			Less than 1:10 to greater than 1:80	6323	***
			998 - Results unavailable	370	
			999 - Test not done	220	
			Blank	16895	
	404-406	3	Polio II		See Detailed Note
			Titer Range:		
			Less than 1:10 to greater than 1:80	6323	
			998 - Results unavailable	370	
			999 - Test not done	220	
			Blank	16895	***
	407-409	3	Polio III		See Detailed Note
			Titer Range:		
			Less than 1:10 to greater than 1:80	6323	
			998 - Results unavailable	370	
			999 - Test not done	220	
			Blank	16895	***
	410-412	3	Measles		See Detailed Note
			Titer Range:		
			Less than 1:8 to greater than 1:40	6502	
			998 - Results unavailable	168	
			999 - Test not done	243	
			Blank	16895	***

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	413-415	3	Rubella		See Detailed Note
			Titer Range:		
			Less than 1:8 to greater than 1:32	6377	***
			998 - Results unavailable	171	
			999 - Test not done	365	
			Blank	16895	
	416-420	5	Diphtheria		See Detailed Note
			Titer Range:		
			Less than 1:0 (not reactive) to greater than 1:6000	5201	
			99998 - Results unavailable	1533	
			99999 - Test not done	179	
			Blank	16895	***
	421-425	5	Tetanus		See Detailed Note
			Titer Range:		
			Less than 1:0 (not reactive) to greater than 1:5000	5067	
			99998 - Results unavailable	1530	
			99999 - Test not done	316	
			Blank	16895	***
	426-430	5	Amebiasis		See Detailed Note
			Titer Range:		
			Less than 1:16 to greater than 1:4096	6227	
			99998 - Results unavailable	467	
			99999 - Test not done	219	
			Blank	16895	***

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	431	1	Syphilis Screen - ART (Automated Reagin Test)		
			1 - Reactive	36	**
			2 - Non-reactive	2700	
			8 - Unsuitable for testing	259	
			9 - Quantity insufficient	64	
			Blank - Nonapplicable	20749	
	432	1	Syphilis Verified - (Flourescent Treppnema Pallidum Absorption Test)		
			1 - Reactive	31	**
			2 - Non-reactive	5	
			8 - Unsuitable for testing	259	
			9 - Quantity insufficient	64	
			Blank - Nonreactive to ART Screen or nonapplicable	23449	
	433-435	3	Quantitative Syphilis - ART (Automated Reagin Test)		
			011 - Reactive 1:1 Dilution	15	**
			012 - Reactive 1:2 Dilution	6	
			014 - Reactive 1:4 Dilution	7	
			018 - Reactive 1:8 Dilution	5	
			318 - Reactive at a dilution greater than 1:8	2	
			888 - Unsuitable for testing	259	
			999 - Quantity insufficient	65	
			Blank - Nonreactive or nonapplicable	23449	

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	436-438	3	Quantitative Syphilis - VDRL (Venereal Disease Research Laboratory Slide Test)		
			005 - Weakly Reactive	10	**
			011 - Reactive 1:1 Dilution	12	
			012 - Reactive 1:2 Dilution	9	
			014 - Reactive 1:4 Dilution	1	
			018 - Reactive 1:8 Dilution	1	
			318 - Reactive at a dilution greater than 1:8	2	
			888 - Unsuitable for testing	259	
			999 - Quantity insufficient	65	
			Blank - Nonreactive or nonapplicable	23449	
	439-440	2	BLANK, USER WORKSPACE		
	441-442	2	Hemoglobin Phenotype		See Detailed Note
			01 - AA (normal)	10770	
			02 - AA_2 (A_2 = β thal trait)	3	
			05 - AF (F > 10%)	6	
			08 - AI	1	
			11 - AS	89	
			12 - SAF or SA (S-β thal)	2	
			17 - AC	18	
			18 - AD or AG (no further determination)	9	
			19 - AAF (↑ F but < 10%)	17	
			20 - A+ fast	2	
			28 - Other unidentified 46 present	1	
			88 - Blank, but applicable (Hemoglobin phenotyping not done)	1364	
			99 - Blank (not in phenotype study)	11526	

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	443-445	3	Percent A_2 Hemoglobin (xx.x)		See Detailed Notes.
			(007-060) - As given	32	
			888 - Blank, but applicable (Phenotyping not done)	1364	
			998 - Blank (no entry)	10886	
			999 - Blank (not in hemoglobin phenotype study)	11526	
	446-448	3	Percent F Hemoglobin (xx.x)		See Detailed Notes.
			(042-101) - As given	2	
			888 - Blank, but applicable (Phenotyping not done)	1364	
			998 - Blank (no entry)	10916	
			999 - Blank (not in hemoglobin phenotype study)	11526	
	449-450	2	BLANK, USER WORKSPACE		

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
			SMA DETAILED BLOOD (decimals not shown on tape)		
	451-454	4	Total Bilirubin (xx.xx)		
			0010-0520 - as given	5854	***
			7777 - Unacceptable data	855	
			8888 - Blank, but applicable	2	
			9999 - Test not done	202	
			Blank	16895	
	455-458	4	SGOT (xxx.x)		
			0027-3100 - as given	6315	***
			7777 - Unacceptable data	358	
			8888 - Blank, but applicable	1	
			9999 - Test not done	239	
			Blank	16895	
	459-462	4	Alkaline Phosphatase (xxx.x)		
			0048-5800 - as given	6364	***
			7777 - Unacceptable data	360	
			8888 - Blank, but applicable	2	
			9999 - Test not done	187	
			Blank	16895	
	463-465	3	Uric Acid (xx.x)		
			007-125 - as given	6651	***
			777 - Unacceptable data	63	
			888 - Blank, but applicable	2	
			999 - Test not done	197	
			Blank	16895	
	466-468	3	Calcium (xx.x)		
			002-125 - as given	6256	***
			777 - Unacceptable data	456	
			888 - Blank, but applicable	1	
			999 - Test not done	200	
			Blank	16895	

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	469-471	3	Phosphate (xx.x)		
			014-075 - as given	6079	***
			777 - Unacceptable data	605	
			888 - Blank, but applicable	2	
			999 - Test not done	227	
			Blank	16895	
	472-474	3	BUN (XX.X)		
			008-490 - as given	2935	**
			777 - Unacceptable data	78	
			999 - Test not done	46	
			Blank	20749	
	475-477	3	Creatinine (XX.X)		
			004-090 - as given	2591	**
			777 - Unacceptable data	422	
			999 - Test not done	46	
			Blank	20749	
	478-480	3	T_4 Test (x.x)		
			010-250 - as given	6004	***
			99 - Blank, but applicable	909	
			Blank	16895	
	481-483	3	T_3 Test (x.xx)		
			Less than 088 (Hyper) - as given	38	***
			088-110 (Euthy) - as given	5015	
			Greater than 110 (Hypo) - as given	967	
			888 - Blank, but applicable	880	
			999 - Test not done	13	
			Blank	16895	

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION & CODES	Control Counts	HANES I Data Source
	484-486	3	T4 Murphy-Pattee (xx.x) 042-292 - as given Blank	 208 23600	See Detailed Note.
	487-500	19	Blank - Data User Work Area		

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION AND CODES	Control Counts	HANES I Data Source
			URINE DIPSTICK ANALYSIS		
	501	1	Albumin (Protein)(mg/100ml)		
			0 - Negative	21000	
			1 - 30+	206	
			2 - 100++	91	
			3 - 300+++	31	
			4 - Over 1000++++	15	
			5 - Trace	395	
			8 - Blank, but applicable	1829	
			Blank	241	
	502	1	Glucose		
			0 - Negative	21300	
			1 - Light	78	
			2 - Medium	77	
			3 - Dark	144	
			4 - Very dark	84	
			5 - Trace	52	
			8 - Blank, but applicable	1832	
			Blank	241	
	503	1	pH		
			4 - Blank, but applicable	1817	
			5-9 - As given	21750	
			Blank	241	
	504	1	Hematest (Blood)		
			0 - Negative	21005	
			1 - Small	331	
			2 - Moderate	202	
			3 - Large	89	
			4 - Very large	1	
			5 - Trace	1	
			8 - Blank, but applicable	1938	
			Blank	241	

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION AND CODES	Control Counts	HANES I Data Source
	505	1	Urobilinogen		
			1 - Negative, 0.1 or 1	2901	
			2 - 4	3	
			3 - 8	0	
			4 - 12	18	
			8 - Blank, but applicable	137	
			Blank	20749	
	506	1	Bilirubin		
			0 - Negative	2886	
			1 - Small+	32	
			2 - Moderate++	2	
			3 - Large+++	1	
			4 - Very large++++	0	
			5 - Trace	1	
			8 - Blank, but applicable	137	
			Blank	20749	
	507	1	Ketones		
			0 - Negative	2864	
			1 - Small	38	
			2 - Moderate	17	
			3 - Large	4	
			8 - Blank, but applicable	136	
			Blank	20749	
	508-509	2	Technician Number		
			68-86, 89-90 - As given	22642	
			88 - Blank, but applicable	925	
			Blank	241	
	510-525	16	Blank - Data User Work Area		

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION AND CODES	Control Counts	HANES I Data Source
	526-528	3	Red Blood Cells (millions/mm^3)(x.xx - decimal not shown on tape)		
			214-699 - As given	17328	
			777 - Unacceptable data	5152	
			888 - Blank, but applicable	1328	
	529-531	3	White Blood Cells (Thousands/mm^3)(xx.x - decimal not shown on tape)		
			021-560 - As given	21236	
			777 - Unacceptable data	280	
			888 - Blank, but applicable	2292	
	532-535	4	Urinary Iodine (μg/ml)(xx.xx - decimal not shown on tape)		
			0001-8625 - As given	19617	*
			8888 - Blank, but applicable	2132	
			Blank	3059	
	536-539	4	Urinary Riboflavin (μg/ml)(xx.xx - decimal not shown on tape)		
			0001-6591 - As given	18191	*
			8888 - Blank, but applicable	2558	
			Blank	3059	
	540-543	4	Urinary Thiamine (μg/ml)(xx.xx - decimal not shown on tape)		
			0001-2074 - As given	18333	*
			8888 - Blank, but applicable	2416	
			Blank	3059	
	544-547	4	Urinary Creatinine (mg/dl)(xxx.x - decimal not shown on tape)		
			0008-8565, 9770 - As given	18701	*
			8888 - Blank, but applicable	2048	
			Blank	3059	

Item #	Tape Loc.	No. of Positions	ITEM DESCRIPTION AND CODES	Control Counts	HANES I Data Source
	548-553	6	Urinary Iodine/Creatinine (µg/gm)(xxxxxx. - decimal not shown on tape)		*
			000002-541962 - As given	18592	
			888888 - Blank, but applicable	2157	
			Blank	3059	
	554-559	6	Urinary Riboflavin/Creatinine (µg/gm)(xxxxxx. - decimal not shown on tape)		*
			000004-192500 - As given	18167	
			888888 - Blank, but applicable	2582	
			Blank	3059	
	560-565	6	Urinary Thiamine/Creatinine (µg/gm)(xxxxxx. - decimal not shown on tape)		*
			000012-056250 - As given	18310	
			888888 - Blank, but applicable	2439	
			Blank	3059	
	566-568	3	Serum Vitamin A (µg/dl) (xxx.-decimal not shown on tape)		
			009-279 - As given	19088	* *See detailed notes
			888 - Blank, but applicable	1661	
			Blank	3059	
	569	1	Serum Vitamin A Adjustment Code		
			1 = Adjusted	3530	* *See detailed notes
			2 = Not adjusted	15558	
			8 = Blank, but applicable	1661	
			Blank	3059	
	570-600	31	BLANK - DATA USER WORK AREA		

DETAILED NOTES

TAPE POSITION 10

Size of Place

Size of place classification was derived from the 1960 census. According to the definition used in the 1960 census, the urban population was comprised of all persons living in (a) places of 2,500 inhabitants or more incorporated as cities, boroughs, villages and towns (except towns in New York, New England, and Wisconsin); (b) the densely settled urban fringe, whether incorporated or unincorporated, of urbanized areas; (c) towns in New England and townships in New Jersey and Pennsylvania which contained no incorporated municipalities as subdivisions and had either 2,500 inhabitants or more, or a population of 2,500 to 25,000 and a density of 1,500 persons or more per square mile; (d) counties in states other than the New England states, New Jersey, and Pennsylvania, that had no incorporated municipalities within their boundaries and had a density of 1,500 persons per square mile; and (e) unincorporated places of 2,500 inhabitants or more not included in any urban fringe. The remaining population was classified as rural.

Urban areas are further classified by population size for places within urbanized areas and other places outside urbanized areas.

DETAILED NOTES

TAPE POSITION 11

SMSA

A standard metropolitan statistical area is basically a county or a group of contiguous counties which contains at least one city of 50,000 inhabitants or more, or "twin cities" with a combined population of at least 50,000. In addition to the county or counties containing such a city or cities, contiguous counties are included in an SMSA if, according to the 1960 Census, they are socially and economically integrated with the central city. Each SMSA must include at least one central city, and the complete title of an SMSA identifies the central city or cities.

DETAILED NOTES

TAPE POSITIONS 22 AND 103

Race

The race of the respondent was marked by observation and it was assumed the race of all related persons was the same as the respondent unless otherwise learned. The race categories were "White", "Negro" or "other." If the appropriate category could not be marked by observation, then race was asked. Persons of races other than White or Negro, such as Japanese, Chinese, American Indian, Korean, Hindu, Eskimo, etc. were reported as "Other." Mexicans were included with "White" unless definitely known to be American Indian or of other nonwhite race.

DETAILED NOTES

TAPE POSITIONS 34-35

Total Family Income Group

The income group represents the total combined family income for the past twelve (12) months. It includes income from all sources such as wages, salaries, social security or retirement benefits, help from relatives, rent from property and so forth. The income groups were not reconciled to the component parts (tape positions 36-94). The income component parts were not asked when the gross income was greater than $6,999 per annum. However, amounts greater than $6,999 appear in tape positions 37-40, 67-70, and 72-75. Some respondents reported a loss of income from their nonfarm business, professional practice, partnership or farm and this explains why some data fields are greater than $6,999, but the individual total in tape positions 91-94 does not exceed this figure.

DETAILED NOTES

TAPE POSITIONS 95-99

Family Unit Code

All related sample persons in the same family unit have the same computer generated family unit code. This will enable detailed analysis of the individual family unit.

UNITED STATES			OUTLYING AREAS OF THE U.S.	
	Standard Abbreviation	Code	Name of Place	Code
ALABAMA	Ala.	01	American Samoa	60
ALASKA	Alaska	02	Canal Zone	61
ARIZONA	Ariz.	04	Canton and Enderbury Islands	62
ARKANSAS	Ark.	05	Caroline Islands	63
CALIFORNIA	Calif.	06	Cook Islands	64
COLORADO	Colo.	08	Gilbert and Ellice Islands	65
CONNECTICUT	Conn.	09	Guam	66
DELAWARE	Del.	10	Johnston Atoll	67
DIST. OF COLUMBIA	D.C.	11	Line Islands - Southern	68
FLORIDA	Fla.	12	Mariana Islands	69
GEORGIA	Ga.	13	Marshall Islands	70
HAWAII	Hawaii	15	Midway Islands	71
IDAHO	Idaho	16	Puerto Rico	72
ILLINOIS	Ill.	17	Ryukyn Islands - Southern	73
INDIANA	Ind.	18	Swan Islands	74
IOWA	Iowa	19	Tokelau Islands	75
KANSAS	Kans.	20	U.S. Misc. Caribbean	76
KENTUCKY	Ky.	21	U.S. Misc. Pacific Islands	77
LOUISIANA	La.	22	Virgin Islands	78
MAINE	Maine	23	Wake Islands	79
MARYLAND	Md.	24	Cuba	80
MASSACHUSETTS	Mass.	25	West Indies	81
MICHIGAN	Mich.	26	North America	91
MINNESOTA	Minn.	27	South America	92
MISSISSIPPI	Miss.	28	Europe	93
MISSOURI	Mo.	29	Africa	94
MONTANA	Mont.	30	Asia	95
NEBRASKA	Nebr.	31	Australasia	96
NEVADA	Nev.	32	Pacific Islands	97
NEW HAMPSHIRE	N.H.	33		
NEW JERSEY	J.J.	34		
NEW MEXICO	N. Mex.	35		
NEW YORK	N.Y.	36		
NORTH CAROLINA	N.C.	37		
NORTH DAKOTA	N. Dak.	38		
OHIO	Ohio	39		
OKLAHOMA	Okla.	40		
OREGON	Oreg.	41		
PENNSYLVANIA	Pa.	42		
RHODE ISLAND	R.I.	44		
SOUTH CAROLINA	S.C.	45		
SOUTH DAKOTA	S. Dak.	46		
TENNESSEE	Tenn.	47		
TEXAS	Tex.	48		
UTAH	Utah	49		
VERMONT	Vt.	50		
VIRGINIA	Va.	51		
WASHINGTON	Wash.	53		
WEST VIRGINIA	W. Va.	54		
WISCONSIN	Wis.	55		
WYOMING	Wyo.	56		

Industry and Occupation Codes

A person's occupation may be defined as his principal job or business. For this survey purpose, the principal job or business of a respondent is defined in one of the following ways: If the person worked during the two week interview period or had a job or business, the question concerning his occupation (or work) applies to his job during that period. If the respondent held more than one job, the question is directed to the one at which he spent the most time. It refers to the one he considers most important when equal time is spent at each job. A person who has not begun work at a new job, is looking for work, or is on layoff from work is questioned about his last full-time civilian job. A full-time job is defined as one at which the person spent 35 or more hours per week and which lasted two consecutive weeks or more. A person who has a job to which he has not yet reported and has never had a previous job or business is classified as a "new worker."

The 1970 census of population Alphabetical Index of Industries and Occupations was used in the coding of both the industry and occupation.

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DETAILED NOTES

TAPE POSITION 146

Land used for farming purposes (Code 1 in Tape Position 146) was identified as being rural land (Code 2 in Tape Position 13) consisting of 10 or more acres (Code 1 in Tape Position 14) with crop sales amounting to $50 or more (Code 2 in Tape Position 15), or rural land (Code 2 in Tape Position 13) consisting of less than 10 acres (Code 2 in Tape Position 14) with crop sales amounting to $250 or more (Code 3 in Tape Position 16). All Other land is classified as nonfarm (Code 2 in Tape Position 146).

TAPE POSITIONS 147-149

Poverty Index—Income status was determined by the Poverty Income Ratio (PIR). Poverty statistics published in the Census Bureau reports[1] were based on the poverty index developed by the Social Security Administration in 1964. (For a detailed discussion of the SSA poverty standards, see reference 2.) Modifications in the definition of poverty were adopted in 1969.[3] The standard data series in poverty for statistical use by all executive departments and establishments has been established.[4]

The two components of the PIR are the total income of the household (numerator) and a multiple of the total income necessary to maintain a family with given characteristics on a nutritionally adequate food plan[3] (denominator). The dollor value of the denominator of the PIR is constructed from a food plan (economy plan) necessary to maintain minimum recommended daily nutritional requirements. The economy plan is designated by the Department of Agriculture for "emergency or temporary use when funds are low."

For families of three or more persons, the poverty level was set at three times the cost of the economy food plan. For smaller families and persons living alone, the cost of the economy food plan was adjusted by the relatively higher fixed expenses of these smaller households.

The denominator or poverty income cutoff adjusts the family poverty income maintenance requirements by the family size, the sex of the family head, the age of the family head in families with one or two members, and the place of residence (farm, nonfarm). Annual revisions of the poverty income cutoffs are based on the changes in the average cost of living as reflected in the Consumer Price Index.

As shown in the table, the annual income considered to be the poverty level increases as the family size increases. A family with any combination of characteristics and with the same income as shown in the table has been designated as having a PIR or poverty level of 1.0. The same family with twice the income found in the table would have a PIR of 2.0. Ratios of less than 1.0 can be described as "below poverty," ratios greater than or equal to 1.0, as "at or above poverty."

Poverty thresholds are computed on a national basis only. No attempt has been made to adjust these thresholds for regional, State, or other local variation in the cost of living (except for the farm, nonfarm difference). None of the noncash public welfare benefits such as food stamp bonuses or free food commodities are included in the income of the low income families receiving these benefits.

1/ Current Population Reports, "Consumer Income," Series P-60, No. 77, May 7, 1971

2/ Orshansky, M.: "Counting the Poor: Another Look at the Poverty Profile," Social Security Bulletin, January 1965; "Who's Who Among the Poor: A Demographic View of Poverty," Social Security Bulletin, July 1965.

3/ Current Population Reports, "Special Studies," Series P-23, No. 28, August 12, 1969

4/ Circular No. A-46, Transmitted Memorandum No. 9, Executive Office of the President, Bureau of the Budget, August 29, 1969, and Exhibit L (rev.).

DETAILED NOTES

TAPE POSITIONS 147-149

Weighted average thresholds at the low income level in 1971 by size of family and sex of head, by farm-nonfarm residence

Size of family	Total	Nonfarm			Farm		
		Total	Male[1] head	Female[1] head	Total	Male[1] head	Female[1] head
All unrelated individuals	$2,033	$2,040	$2,136	$1,978	$1,727	$1,783	$1,669
Under 65 years	2,093	2,098	2,181	2,017	1,805	1,853	1,715
65 years and over	1,931	1,940	1,959	1,934	1,652	1,666	1,643
All families	3,700	3,724	3,764	3,428	3,235	3,242	3,079
2 persons	2,612	2,633	2,641	2,581	2,219	2,224	2,130
Head under 65 years	2,699	2,716	2,731	2,635	2,317	2,322	2,195
Head 65 years and over	2,424	2,448	2,450	2,437	2,082	2,081	2,089
3 persons	3,207	3,229	3,246	3,127	2,745	2,749	2,627
4 persons	4,113	4,137	4,139	4,116	3,527	3,528	3,513
5 persons	4,845	4,880	4,884	4,837	4,159	4,159	4,148
6 persons	5,441	5,489	5,492	5,460	4,688	4,689	4,656
7 persons or more	6,678	6,751	6,771	6,583	5,736	5,749	5,516

[1]For unrelated individuals, sex of the individual.

SOURCE: U.S. Department of Commerce, Social and Economic Statistics Administration, U.S. Bureau of the Census "Characteristics of the Low Income Population: 1971," Current Population Reports, Series P-60, No. 86, p. 18.

Region

The United States was divided into four broad geographic regions of approximately equal population. Those regions, which deviate somewhat from the groups used by the Bureau of the Census, are as follows:

Region	States Included
Northeast	Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, and Pennsylvania
South	Delaware, Maryland, District of Columbia, West Virginia, Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, and Arkansas
Midwest	Ohio, Illinois, Indiana, Michigan, Wisconsin, Minnesota, Iowa, Missouri
West	Washington, Oregon, California, Nevada, New Mexico, Arizona, Texas, Oklahoma, Kansas, Nebraska, North Dakota, South Dakota, Idaho, Utah, Colorado, Montana, and Wyoming.

DETAILED NOTES

TAPE POSITIONS 158-193

HANES is a multistage, stratified, probability sample of loose clusters of persons in land-based segments. In addition, HANES is composed of two distinct examination components--a nutrition screening examination (taken by all examinees) and a more detailed examination taken by a pre-selected subsample of all examinees, ages 25-74. For the nutrition screening examination, locations 1-35 and 1-65 constituted national probability samples and for the detailed examination, locations 1-35, 1-65, 66-100 and 1-100 all constitute national probability samples. In other words, HANES is composed of six distinct subsamples of the U.S. population. For a more detailed discussion of the sample design see Series 1, No. 10a.

Since each of these six subsamples is a distinct subsample of the U.S. population, each subsample requires a different set of weights. The weights are based upon the probability of selection into the sample, adjustments for nonresponse and further adjustments to approximate the U.S. noninstitutionalized population as of the midpoint of each subsample.

In order to select all of those examinees in a particular subsample, i.e. received a particular exam component, it is necessary to exclude all examinees with a weight of zero or blank. It is also necessary to exclude all zero or blank weights because that is the only way to differentiate missing data due to nonresponse from data that is missing because the sample design dictated that a particular examinee was not supposed to receive a particular examination component.

It is suggested that any analyses that are desired by the researcher be performed using the greatest number of examinees possible; that is, if the researcher is interested in an exam component of the nutrition screening examination he should use the weight and consequently the data from the 65 location subsample rather than the 35 location subsample. For the detailed examination, the researcher should use the 100 location subsample rather than one of the others. However, some exam components were only done in a particular subsample; for example, only at the first 35 locations. In that case, the researcher has no choice in selecting a particular subsample.

There may be occasions when a researcher may want to make comparisons of estimates obtained from various subsamples. For example, the prevalence of some disease condition as estimated from the first 35 locations could be compared with an estimate based upon locations 66-100. The researcher may also want to formulate hypotheses using one subsample and test those hypotheses using another subsample.

DETAILED NOTE

TAPE POSITIONS 283-288, 289-294

Because of the complete loss of the Hemoglobin and Hematocrit data for three locations in HANES, it was necessary to calculate a new set of sample weights based on 62 locations which would still be representative of the U. S. population. This special sample weight applicable only to these two determinations is located in positions 283-288.

A similar loss of data occurred at three different locations for the determinations of Serum Iron, Total Iron Binding Capacity, and % Transferrin Saturation. A separate special sample weight based on 62 locations was calculated in order to provide for U. S. population estimates for these data. This sample weight is located in positions 289-294.

The original sample weights located in positions 158-193 of the demographic data should not be used when analyzing the above determinations.

DETAILED NOTE

TAPE LOCATIONS 339-350

MISCELLANEOUS FINDINGS - GLOSSARY

Red Cell Descriptive Terms

1. CABOT RINGS
2. ELLIPTOCYTES (OVALOCYTES) - USE ONLY WHEN THE PREDOMINANT CELL
3. HEMOGLOBIN C CRYSTALS
4. HOWELL-JOLLY BODIES
5. IMMATURE NUCLEATED CELLS
6. FRAGMENTED RED BLOOD CELLS (HELMET CELLS, ETC.)
7. ROULEAUX
8. POLYMACROCYTES (MACROCYTES WITH LOBULATED NUCLEUS)
9. SIDEROCYTES (PAPPENHEIMER BODIES)
10. MALARIA PARASITES
11. SCHUFFNER'S DOTS
12. MALARIA CRESCENT SHAPED GAMETOCYTES
13. MAURER'S DOTS
14. MALARIAL DOUBLE RINGS 1-3 TROPHOZOITES
15. OTHER MALARIAL FORMS
16. POLYCHROMATOPHILIA, SLIGHT
17. POLYCHROMATOPHILIA, MARKED
18. BASOPHILIC STIPPLING, SLIGHT
19. BASOPHILIC STIPPLING, MARKED
20. SPHEROCYTES (ANY TYPE), FEW
21. SPHEROCYTES, NUMEROUS
22. TARGET CELLS, FEW
23. TARGET CELLS, MANY
24. SICKLE CELLS, POINTED
25. SICKLE CELLS, BLUNT END
26. BURR CELLS OR SPINOCYTES, FEW
27. BURR CELLS OR SPINOCYTES, MANY

White Cell Descriptive Terms

35. ALDER'S GRANULATION
36. BASOPHILIC BANDS
37. BASOPHILIC METAMYELOCYTES
38. BASOPHILIC MYELOCYTES
39. HYPOSEGMENTATION (NEUTROPHILS)
40. AUER RODS
41. POLYPLOIDY, DIPLOID CELLS, TETRAPLOID CELLS, ETC.

White Cell Descriptive Terms - Continued

42. EOSINOPHILIC BANDS
43. EOSINOPHILIC METAMYELOCYTES
44. EOSINOPHILIC MYELOCYTES
45. IMMATURE CELLS UNIDENTIFIED
46. MITOSES (WHITE CELLS)
47. MONOCYTES, ATYPICAL
48. MONOCYTES, VACUOLATED
49. NEUTROPHILS, VACUOLATED
50. PLASMOCYTES
51. STEM CELLS
52. TART CELLS
53. MARKED LEUKOCYTOSIS
54. TOXIC GRANULATION (NEUTROPHILS), SLIGHT
55. TOXIC GRANULATION, MARKED
56. SMUDGE CELLS, FEW
57. SMUDGE CELLS, MANY
58. HYPERSEGMENTATION OF NEUTROPHILS, FEW
59. HYPERSEGMENTATION OF NEUTROPHILS, MANY
60. MACROPOLYCYTES (ABNORMALLY LARGE NEUTROPHILS)
61. ATYPICAL LYMPHOCYTES OCCASIONAL (0-5%)
62. ATYPICAL LYMPHOCYTES PLASMACYTOID TYPE (6-20% of total)
63. MAJORITY OF THE LYMPHOCYTES ATYPICAL
64. DOEHLE (RNA) BODIES

Platelet Descriptive Terms

70. LARGE PLATELETS OR MACROTHROMEOCYTES
71. CLUMPS OF PLATELETS, OCCASIONAL
72. CLUMPS OF PLATELETS, MANY
73. PLATELETS BIZARRE, OR IRREGULAR SHAPES

DETAILED NOTE

TAPE LOCATIONS 351-362

MORPHOLOGICAL INTERPRETATIONS - GLOSSARY

1. NORMAL (RED CELLS, WHITE CELLS AND PLATELETS)

Red Cell Interpretation

2. ACQUIRED HEMOLYTIC PROCESS
3. HYPOCHROMIC MICROCYTOSIS
4. MACROCYTOSIS
5. NORMOCHROMIC MICROCYTOSIS
6. NORMOCYTIC NORMOCHROMIC
7. HYPOCHROMIC MACROCYTOSIS
8. HYPOCHROMIC NORMOCYTOSIS
9. HEMOGLOBINOPATHY, TYPE NOT DESIGNATED
10. HEMOGLOBINOPATHY, HOMOZYGOUS C
11. HEMOGLOBINOPATHY, (SC)
12. HEMOGLOBINOPATHY, SICKLE CELL DISEASE, DREPANOCYTOSIS
13. HEMOGLOBINOPATHY, (HEMOLYTIC CRISIS)
14. HEMOGLOBINOPATHY, (C-THALASSEMIA)
15. HEMOGLOBINOPATHY, (TRAIT S or C)
16. HEMOGLOBINOPATHY, THALASSEMIA - COOLEY'S ANEMIA
17. SPHEROCYTOSIS
18. OVALOCYTOSIS
19. MALARIA

White Cell Interpretation

31. INCREASED BANDS
32. EOSINOPHILIA, SLIGHT
33. EOSINOPHILIA, MARKED
34. PELGER-HUET ANOMALY - HYPOSEGMENTATION
35. INFECTIOUS MONONUCLEOSIS
36. LYMPHOPENIA (RELATIVE AND/OR ABSOLUTE)
37. MONOCYTOSIS (RELATIVE AND/OR ABSOLUTE)
38. LYMPHOCYTOSIS,(ABSOLUTE AND/OR RELATIVE)
39. NEUTROPENIA, SLIGHT (ABSOLUTE AND/OR RELATIVE)
40. NEUTROPENIA, MARKED (ABSOLUTE AND/OR RELATIVE)
41. AGRANULOCYTOSIS
42. LEUKEMOID REACTION, LEUCOCYTOSIS
43. MAY-HEGGLIN ANOMALY

Immature cells seen which may be classified as follows:

50. IMMATURE CELLS, NOT IDENTIFIED
51. MAJORITY, IMMATURE PROLYMPHOCYTES AND/OR LYMPHOBLASTS
52. FEW IMMATURE CELLS, MAJORITY MATURE LYMPHOCYTES
53. FEW IMMATURE CELLS, MAJORITY MONOCYTES
54. MAJORITY IMMATURE CELLS, MONOBLASTS OR PROMONOCYTES
55. MAJORITY OF IMMATURE CELL BLASTS AND/OR PROGRANULOCYTES OR PROMONOCYTES
56. MAJORITY OF IMMATURE CELLS MYELOCYTES AND MONOCYTES
57. MAJORITY OF IMMATURE CELLS PROGRANULOCYTES AND/OR GRANULOBLASTS
58. MAJORITY OF IMMATURE CELLS MYELOCYTES OR BANDS
59. MAJORITY OF IMMATURE CELLS PLASMA CELLS
60. BIZARRE IMMATURE RUBRICYTES WITH OTHER IMMATURE CELLS

Platelet Interpretations

70. THROMBOCYTOPENIA
71. THROMBOCYTHEMIA

DETAILED NOTES

TAPE POSITIONS 401-430

Serological testing for the presence of Polio I, II and III; Measles; Rubella Tetanus; Diptheria; and Amebiasis antibodies was done on the Detailed Sample of adults at locations 1-100 in HANES I. From the beginning of the survey certain procedural variations occurred which were not actually resolved until the augmentation portion of the survey which began at location 66.

Illustrative of these variations are titration series which begin at varied levels. As an example, Polio titration series done on serum samples taken during approximately the first 15 locations of HANES I, began at dilutions reactive at "less than 1:20." Later titration series were initialized at dilutions reactive at "less than 1:10." Similar problems exist for all other tests done except for Rubella and Amebiasis. However, since the titration series for Polio at the earlier locations began at a higher titer than is generally employed as a cut-off point for determining protection from, or susceptability to, the disease (less than 1:10), the Polio data are more seriously affected by the procedural variations than are the rest of the serological test results.

The concentration of a given antibody in serum is expressed as a "titer." A titer is defined here as the highest dilution that still produces the test reaction with the appropriate antigens. The reciprocal of this quantity then has the following meaning: If 1 in 80 is the end-point dilution of a serum, then the serum must contain 80 times the concentration of antibody required for the reaction. The reciprocal of the end-point dilution is used on this tape as a definition of the titer.

For Polio I, II and III; Measles; and Rubella, the reciprocals of the actual titration series end-point values are coded in three digits. The first of these digits has a special meaning according to the following convention:

First Digit	Two Digit Titer Value
7 - reactive, dilution less than	1/XX
0 - reactive at specified dilution	1/XX
3 - reactive, dilution greater than	1/XX

Similarly for diptheria, tetanus, and amebiasis, the same convention using the first digit is involved. The titer series, however, may run further before an end-point is reached. The actual titer values then, are given in four digits, rather than two digits as above.

First Digit	Four Digit Titer Value
7 - reactive, dilution less than	1/XXXX
0 - reactive at specified dilution	1/XXXX
3 - reactive, dilution greater than	1/XXXX

There are blocks of missing data which involve largely serology data collected during the first sixty-five locations of HANES I. Especially affected by these missing data are the results of the Tetanus and Diptheria testing. This is due to deficiencies in record handling, sera which became lost or damaged in the mail, or sera which was damaged in the storage process. There is no reason to believe that these losses occur in a selective pattern, but for analytic purposes magnitude of the lost data compromises the full exploitation of the HANES I sample design.

Because relative freedom from the problems of missing data and variations in the testing procedures, the serology data collected from locations 66 to 100 during the augmentation portion of HANES I may be best suited for analysis purposes. Careful consideration should be given to the selection of data for the purpose of making national estimates. Data from locations 1-65 may be excluded from analysis by selecting those records which contain non-blanks in the sample weight field for locations 66-100 on the demographic portion of the data tape. (See Detailed Notes, tape positions 158-193.)

DETAILED NOTES

TAPE POSITIONS 401-409

HANES I SEROLOGY

TITRATION SERIES VALUES - POLIO I, II, III

SERA GATHERED AT LOCATIONS:

1-100	1-65	66-100
LT 10	LT 10	LT 10
10	10	10
LT 20	LT 20	20
20	20	GT 40
40	40	
GT 40	GT 40	
80	80	
GT 80	GT 80	

(LT = Less than) (GT = Greater than)

NOTE: Values are the reciprocals of the end points of a titration series.

DETAILED NOTES

TAPE POSITIONS 410-412

HANES I SEROLOGY

TITRATION SERIES VALUES - MEASLES

SERA GATHERED AT LOCATIONS:

1-100	1-65	66-100
LT 8	LT 8	LT 10
8	8	10
LT 10	LT 10	20
10	10	GT 40
16	16	
20	20	
32	32	
GT 32	GT 32	
40	40	
GT 40	GT 40	

(LT = Less than) (GT = Greater than)

NOTE: Values are the reciprocals of the end points of a titration series.

DETAILED NOTES

TAPE POSITIONS 413-415

HANES I SEROLOGY

TITRATION SERIES VALUES - RUBELLA

SERA GATHERED AT LOCATIONS:

1-100	1-65	66-100
LT 8	LT 8	LT 8
8	8	8
16	16	16
GT 32	GT 32	GT 32

(LT = Less than) (GT = Greater than)

NOTE: Values are the reciprocals of the end points of a titration series.

DETAILED NOTES

TAPE POSITIONS 416-420

HANES I SEROLOGY

TITRATION SERIES VALUES - DIPHTHERIA

SERA GATHERED AT LOCATIONS:

1-100			1-65			66-100		
LT	0	(No reaction)	LT	0	(No reaction)	LT	0	(No reaction)
LT	1		LT	1		LT	1	
	1			1			1	
LT	2		LT	2		LT	2	
	2			2			2	
LT	3		LT	3			5	
	3			3			11	
LT	5		LT	5			23	
	5			5			46	
LT	11		LT	11			93	
	11			11			187	
	23			23			375	
	46			46			750	
	93			93			1500	
	187			187		GT	1500	
	375			375		GT	3000	
	750			750		GT	6000	
	1500			1500				
GT	1500		GT	1500				
	3000			3000				
GT	3000		GT	3000				
	6000			6000				
GT	6000		GT	6000				

(LT = Less than) (GT = Greater than)

NOTE: Values are the reciprocals of the end points of a titration series.

DETAILED NOTES

TAPE POSITIONS 421-425

HANES I SEROLOGY

TITRATION SERIES VALUES - TETANUS

SERA GATHERED AT LOCATIONS:

1-100		1-65		66-100	
LT	0 (No reaction)	LT	0 (No reaction)	LT	0 (No reaction)
	0		0	LT	1
LT	1	LT	1		1
	1		1	LT	2
LT	2	LT	2		2
	2		2		4
LT	4	LT	4	LT	5
	4		4		19
LT	5	LT	5		38
	5		5		77
	7		7		155
LT	11	LT	11		310
	19		19		620
LT	22	LT	22		1250
	38		38	GT	1250
	77		77		2500
	155		155	GT	2500
	310		310	GT	5000
	620		620		
	1250		1250		
GT	1250		2500		
	2500		5000		
GT	2500	GT	5000		
	5000				
GT	5000				

(LT = Less than) (GT = Greater than)

NOTE: Values are the reciprocals of the end points of a titration series.

DETAILED NOTES

TAPE POSITIONS 426-430

HANES I SEROLOGY

TITRATION SERIES VALUES - AMEBIASIS

SERA GATHERED AT LOCATIONS:

1-100	1-65	66-100
LT 16	LT 16	LT 16
16	16	16
LT 32	LT 32	LT 32
32	32	32
64	64	64
128	128	128
256	256	256
512	512	512
1024	1024	1024
2048	2048	
GT 4096	GT 4096	

(LT = Less than) (GT = Greater than)

NOTE: Values are the reciprocals of the end points of a titration series.

DETAILED NOTE

TAPE POSITIONS 441-442

Hemoglobin Phenotyping was performed as a special study during HANES I on 12,282 sample persons. These persons do not represent a scientific subsample of the HANES I sample, although those persons examined at locations 66-100 may be used for estimation purposes by applying the appropriate sample weights.

Cellulose acetate electrophoresis was performed on all specimens. Those specimens that appeared abnormal were then tested further.

DETAILED NOTE

TAPE POSITIONS 443-445, 446-448

Percent A_2 hemoglobin was determined for examined persons with mean corpuscular volume (MCV) values below 70 percent.

Percent F hemoglobin was determined when the presence of this hemoglobin was detected.

DETAILED NOTE

TAPE POSITIONS 483-485

The T4 Murphy-Pattee test was performed for those sample persons who had a T4 test result greater than 7.5.

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Detailed note

Tape Position 556-558, 559

NHANES I Serum Vitamin A

Adjustment Procedure

Preface

Serum vitamin A values were obtained for 19,088 examinees at locations 1-65 during NHANES I. However, these data have not been previously released due to a quality control problem which occurred during a 6-month period in 1972. A recent collaborative effort between the Food and Drug Administration (FDA), National Center for Health Statistics (NCHS), and an Expert Panel on Vitamin A Nutriture convened by the Federation of American Societies for Experimental Biology (FASEB), led to the development of an adjustment procedure to correct sample values analyzed during the quality control problem period. The serum vitamin A values given in tape positions 556-558 include 3,530 which were adjusted by this procedure. The adjustment procedure lowered sample values obtained during the quality control problem period by 8.7%. The development and evaluation of the adjustment procedure is described in more detail in the following discussion.

In order to identify which sample values have been adjusted, an adjustment code variable is provided in tape position 559. It is recommended that data tape users read the following description of the adjustment procedure before analyzing the serum vitamin A data. For a description of how these data have been analyzed previously, the user is referred to the following report: "Assessment of the Vitamin A Nutritional Status of the U.S. Population Based on Data Collected in the Health and Nutrition Examination Surveys." This report is available from the Life-Sciences Research Office of the Federation of American Societies for Experimental Biology, 9650 Rockville Pike, Bethesda, MD 20814.

Introduction - The Expert Panel on Vitamin A Nutriture (EPVAN), convened by the Life Sciences Research Office of FASEB, was asked to examine NHANES I serum vitamin A data as part of its review of the HANES data. A total of 18,452 sera samples were available from NHANES I for serum vitamin A analysis; however, quality control (QC) problems related to a contaminated reagent affected 3,432* samples analyzed during a six-month period extending from May 5 through November 1, 1972. Compared to values reported during other periods of the survey, QC pool values during the problem period were approximately 20 percent higher than normal QC values, and concurrently analyzed sample person serum vitamin A values were approximately 10 percent higher than normal sample values.

Although the EPVAN recognized the importance of using the entire NHANES I data base to provide national baseline serum vitamin A data, the members were concerned about potential biases if the problem data were included in their original form. The discrepancy in deviation between QC values and observed sample person values precluded the usual approach for this type of problem, i.e., use of QC values to adjust sample person values. Therefore, FDA and NCHS were requested by the EPVAN to evaluate other approaches for handling the "problem" data.

Proposed Adjustment Methods - Two possible approaches for dealing with the problem data were proposed by FDA/NCHS staff:

Method I - Discard all 3,432 samples analyzed during the problem period

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* The EPVAN only reviewed serum vitamin A data for persons 3-74 years, so this value does not include 98 children under age 3 years whose serum vitamin A was analyzed during the problem QC period.

and restrict the statistical analysis of serum vitamin A to the remaining 15,110 of the NHANES I samples.

Method II - Replace all observed values for the problem period by adjusted values calculated by applying a simple multiplicative adjustment factor to the observed values.

Based on a preliminary evaluation of statistical issues associated with the two methods, FDA/NCHS statisticians concluded that Method II was preferable to Method I. This preference was based primarily on the following statistical and resource considerations inherent in Method I:

a) 3,432 sample observations would be discarded, resulting in the loss of the entire data set for some Primary Sampling Units (PSU's). The loss of entire PSU's severely undermines the NHANES I sample design and could lead to biased estimates for the original target population.

b) The power of statistical tests would be diminished due to both the reduced sample size and to less stable variance estimates caused by loss of the entire data set for some PSU's.

c) The loss of entire PSU's also implied that new pseudo strata and PSU codes would be required and a new BRR variance data tape (based on a new orthogonal matrix) would have to be created.

d) New post-stratification adjustment factors would be required for the reduced data set.

Although the EPVAN concurred with the preliminary statistical evaluation presented by FDA/NCHS statisticians, they both expressed concern about two issues associated with Method II:

a) could a single adjustment factor work uniformly well in adjusting data for all demographic subgroups of interest?

b) would an adjustment factor that was selected to shift a location parameter (the median) of the problem values to the level of the good values distort the higher order moments of the distribution, i.e., kurtosis, skewness, etc.?

The EPVAN requested that FDA/NCHS staff develop a methodology for calculating the adjustment factor and then conduct a set of analyses to address the issues cited above.

Calculation of the Adjustment Factor - The following steps describe the procedure used to calculate the adjustment factor. The calculation was based on the 20 age-sex-race cells defined previously by the EPVAN for presentation of data.

1. For each of the 20 age-sex-race cells, the 25th, 50th, and 75th percentiles were estimated separately for the good and problem data. Thus, let:

$\hat{P}_{1,ij}$ = estimate of the ith percentile for the jth age-sex-race cell using the good data.

$\hat{P}_{2,ij}$ = estimate of the ith percentile for the jth age-sex-race cell using the problem data.

($i = 1, 2, 3$; $j = 1, 2, \ldots\ldots, 20$).

2. The proportional difference between the estimates based on the problem data and the estimates based on the good data were calculated for each percentile and for each age-sex-race cell. That is:

$$\Delta_{ij} = \frac{\hat{P}_{2ij} - \hat{P}_{1ij}}{\hat{P}_{1ij}} \qquad \text{for } i = 1, 2, 3; \quad j = 1, 2, \ldots\ldots, 20.$$

3. For each percentile i, the estimates Δ_{ij} were reasonably consistent across the twenty age-sex-race cells. Thus, it appeared reasonable to pool the estimated percent differences across the age-sex-race cells. The estimates were pooled in such a way that those based on larger sample sizes would have larger weight. Since the sample size within a cell was approximately proportional to the population size of the cell, each estimated proportional difference was weighted by the relative population of its age-sex-race cell. That is, the pooled proportional difference estimates for the th percentile were defined to be: $\Delta_{i\cdot} = \sum_{j=1}^{2} \pi_j \Delta_{ij}$

where π_j is the U.S. Census Bureau estimate of the relative population size for age-sex-race cell j at the midpoint of NHANES I.

4. The pooled proportional difference estimates for the 25th, 50th, and 75th percentiles were found to be 0.0902, 0.0876, and 0.0821, respectively. Although these estimates are not exactly equal, it appeared reasonable to use the average to define an "overall" multiplicative adjustment factor. Thus, the average overall proportional difference estimate was

$$\Delta_{\cdot\cdot} = \sum_{i=1}^{3} \Delta_{i\cdot}/3$$

$$= 0.0866$$

and the overall multiplicative factor was

$$\alpha_{\cdot\cdot} = 1 - \Delta_{\cdot\cdot}$$

$$= 0.9134.$$

Analyses Performed to Evaluate Adjustment Method

The analyses performed to evaluate the adjustment method included the following:

a) comparisons of NHANES I serum vitamin A distributions ("good" period only) with NHANES II serum vitamin A distributions for children ages 3-11 years.

The EPVAN requested that the NHANES II distribution be based only on data collected from locations that matched those sampled during the NHANES I problem QC period. However, data from the NHANES I problem QC period could not be compared to the same locations in NHANES II because NHANES II did not necessarily return to the same PSU's used in NHANES I, nor to the same states as were sampled in NHANES I. Even if the same states were used in both surveys, the actual locations may have differed in terms of important socioeconomic variables, thus making it difficult to match locations in NHANES I and NHANES II.

b) comparisons of NHANES I serum vitamin A distributions between the "good" versus "problem" QC time periods by various one, two-, three- and four-way combinations of selected demographic variables (e.g., age, sex, race, region, poverty status, and urban/rural residence), as requested by the EPVAN. These distributions were then compared with the corresponding distributions produced after applying the adjustment factor.

When comparing NHANES I vitamin A distributions between "good" and "problem" QC periods, NCHS staff used age and sex to define all subgroups because physiological differences in serum vitamin A occur by age and sex. Thus, only distributions that included both these variables were examined. For example, region was not included as a criterion for defining subgroups in a one- or two-way analysis because of the difficulty in interpreting regional data without adjusting for age and sex differences.

Additionally, NCHS staff concluded that a cell size of at least 100 persons was needed to compare cumulative distributions for two groups. All the two-way (age-sex) cells, and eleven of the 20 three-way (age-sex-race) cells contained enough persons to compare the distributions from the good versus problem periods. However, four-way distributions were not possible (e.g., age-sex-race-region) due to inadequate cell sizes.

Due to time and resource constraints, it was not possible to graph all two-way or three-way distributions of good vs. problem data and good vs. adjusted problem data. Therefore, cumulative distribution graphs for selected two-way and three-way distributions were prepared for groups most likely to have a high prevalence of low serum vitamin A-- children 3-5 years, and women 18-44 years. Examples of these graphs are shown in Figures 1 and 2. Figure 1 is a graph comparing good vs. problem data for 3-5 year-old white males, while figure 2 is the corresponding graph comparing good vs. adjusted problem data for this group. In addition to comparing distributions graphically, the percent of persons with serum vitamin A levels below 20 Mg/dl were compared

before and after applying the adjustment factor (Table 1). Results of these analyses indicated that good agreement existed between distributions based on the "good" QC period data and distributions based on the adjusted "problem" QC period data. (Note: The percentages shown in Table 1 are based on unweighted data because the sample weights could not be used with the data from the "good QC period only." Because the data were unweighted, the percents presented in Table 1 do not necessarily match those based on the weighted data which are shown in the FASEB vitamin A report.

Recommendations - Based on the time constraints of the EPVAN and results of the above analyses, NCHS and FDA recommended the multiplicative adjustment method for handling the NHANES I vitamin A data collected during the problem QC period for the following reasons:

A. there were no systematic biases in the pattern of differences between good and problem QC periods for the 25th, 50th, and 75th percentiles within or among any of the age-sex-race groups examined.

B. application of an overall adjustment factor resulted in fairly uniform distributions across the entire range of vitamin A values, including both low and high serum vitamin A values. Thus, prevalence estimates for those with low serum vitamin A levels were similar regardless whether they were based on adjusted or unadjusted NHANES I vitamin A data.

Table 1. Comparison of Percent with Serum Vitamin A Values ∠ 20 by Age, Sex, and Race Groups, NHANES I Good QC Period vs. Combined Good and Adjusted Problem QC* Periods, Unweighted Data

Race/Sex/Age	Percent with Serum Vitamin A ∠ 20 Ug/dl	
	Good QC Period Only	Good and Adjusted Problem QC Periods Combined
White		
MALES		
3-5 years	2.2	2.4
6-11 years	0.7	0.6
12-17 years	0.0	0.0
18-44 years	0.3	0.2
45-74 years	0.2	0.1
FEMALES		
3-5 years	0.7	1.0
6-11 years	0.8	0.7
12-17 years	0.3	0.3
18-44 years	0.1	0.2
45-74 years	0.1	0.2
Black		
MALES		
3-5 years	4.4	4.7
6-11 years	1.8	1.4
12-17 years	0.0	0.0
18-44 years	0.0	0.0
45-74 years	0.0	0.0
FEMALES		
3-5 years	6.5	5.6
6-11 years	2.4	1.8
12-17 years	0.5	0.4
18-44 years	0.7	0.5
45-74 years	0.3	0.2

* Adjusted vitamin A values are 8.66% lower than original values.