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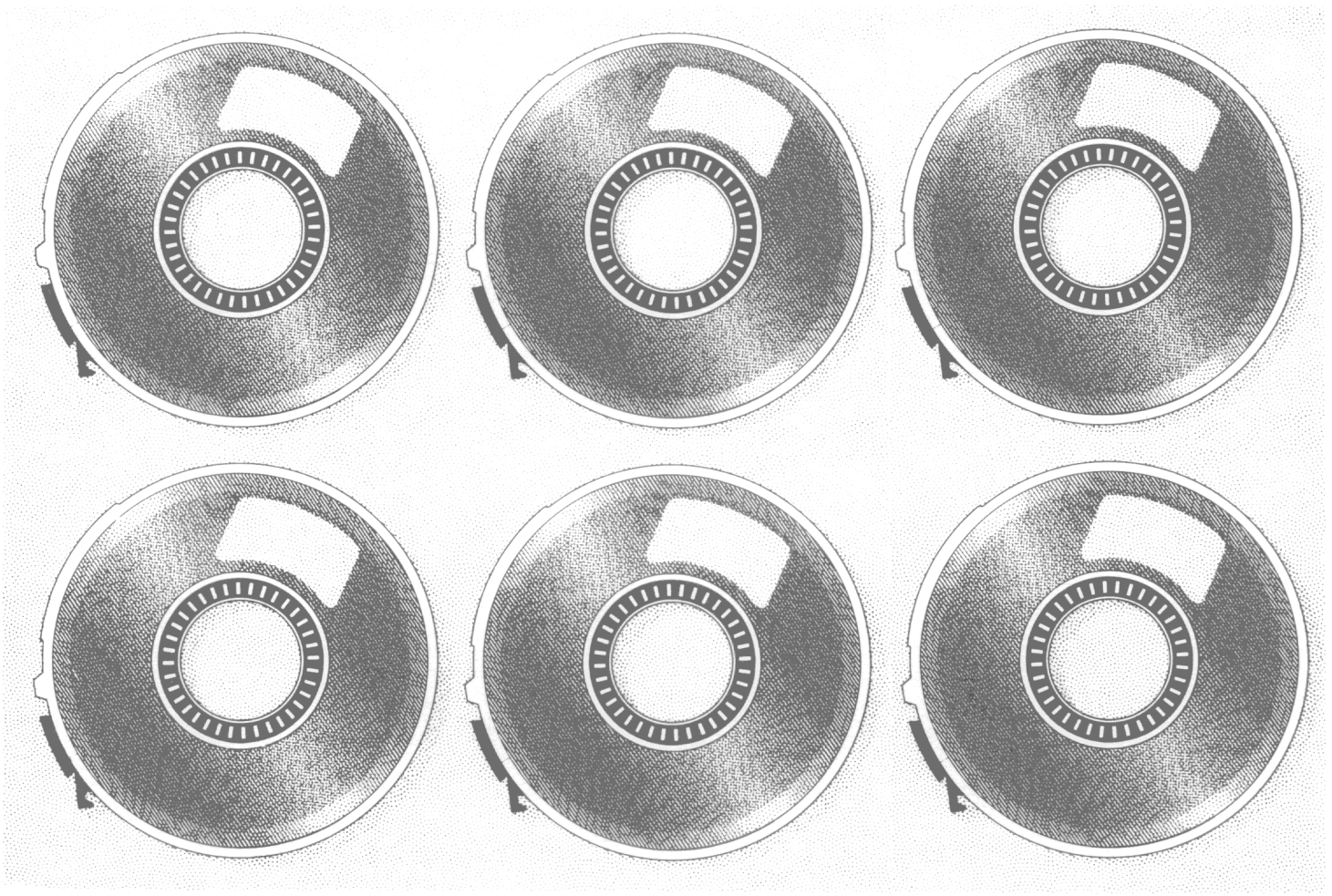
Public Use Data Tape Documentation

NHANES I Epidemiologic Followup Study, 1986

Health Care Facility Stay



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
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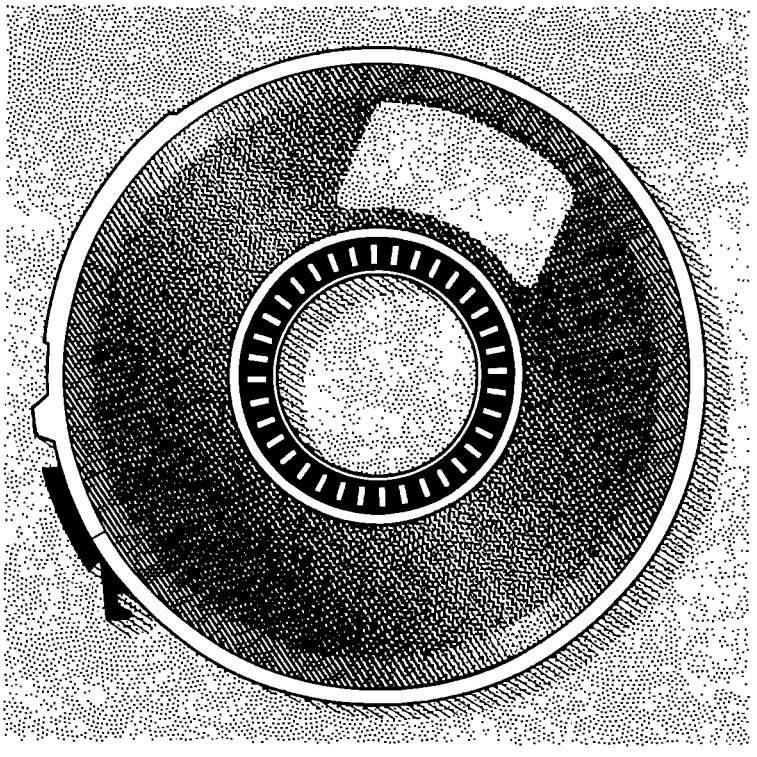

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control
National Center for Health Statistics

Hyattsville, Maryland
April 1990

ACKNOWLEDGMENTS

The NHANES I Epidemiologic Followup Study (NHEFS), 1986 Health Care Facility Stay Public Use tape was prepared by Virginia M. Freid under the direction of Jennifer H. Madans. Assistance was provided by other members of the NHEFS data management team: Joel C. Kleinman, Fanchon F. Finucane, Christine S. Cox, Sandra T. Rothwell, Brian A. Kissel, Cynthia A. Reuben, Michael E. Mussolino, Helen E. Barbano, Madelyn A. Lane, and Jacob J. Feldman. Virginia M. Freid, Sandra T. Rothwell, and Dawn M. Scott were in charge of data set management. La-Tonya D. Curl, Patricia B. Salins and Carole J. Hunt were in charge of manuscript preparation. Special thanks are extended to Joan Cornoni-Huntley of the National Institute on Aging (NIA) who played an important role in the development and continuation of the NHEFS. The contribution of Westat, the contractor who collected the data for this longitudinal study, is also gratefully acknowledged.

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USE OF NHEFS 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 (NCHS) 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.

C. Authors should provide NCHS with a reprint of published articles which utilize the 1986 NHEFS data. Please send reprints to :

NHEFS Data Management Staff
Division of Analysis
National Center for Health Statistics
Presidential Building, Room 1080
6525 Belcrest Road
Hyattsville, MD 20782

Note: New address effective May 1990.

ERRORS IN THE DATA TAPES AND SURVEY DIFFERENCES

The NHEFS Public Use data 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.

In general, the NHEFS data management team has not attempted to resolve substantive data discrepancies that may exist 1) within the 1986 NHEFS data tapes, or 2) between the 1986 NHEFS data tapes and the data tapes of the original National Health and Nutrition Examination Survey (NHANES I) and other NHEFS followup waves.

NHANES I EPIDEMIOLOGIC FOLLOWUP STUDY, 1986

The NHANES I Epidemiologic Followup Study (NHEFS) is a longitudinal study which uses as its baseline those adult persons ages 25 to 74 years who were examined in the first National Health and Nutrition Survey (NHANES I). The NHEFS is comprised of a series of followup surveys, three of which have been conducted to date. The first wave of data collection, the 1982-84 NHEFS, was conducted from 1982 to 1984 and included all persons who were between 25 and 74 years at their NHANES I examination (n=14,407). This series of tape documentation describes data collected in the second wave, the 1986 NHEFS. The 1986 NHEFS was conducted for members of the NHEFS cohort who were 55-74 years at their baseline examination and not known to be deceased at the 1982-84 NHEFS (n=3,980). The third wave of data collection took place in 1987. An attempt was made to re-contact the entire non-deceased NHEFS cohort (n=11,750) at that time. A plan to re-contact the entire non-deceased NHEFS cohort in 1991 is currently under review.

NHANES I collected data from a national probability sample of the United States civilian non-institutionalized population between the ages of 1 and 74 years. The survey, which included a standardized medical examination and questionnaires that covered various health-related topics, took place from 1971 through 1974 and was augmented by an additional national sample in 1974-75. The NHANES I sample included 20,729 persons 25 to 74 years of age, of whom 14,407 (70 percent) completed a medical examination. The design, content and operation of NHANES I has been described elsewhere (Vital and Health Statistics, Series 1, Nos. 10a, 10b, and 14).

Although NHANES I provided a wealth of information on the prevalence of health conditions and risk factors, the cross-sectional nature of the original survey limits its usefulness for studying the effects of clinical, environmental, and behavioral factors and in tracing the natural history of disease. Therefore, the NHEFS was designed to investigate the association between factors measured at baseline and the development of

specific health conditions. It has been jointly sponsored by the National Center for Health Statistics (NCHS), the National Institute on Aging, and other components of the National Institutes of Health and Public Health Service. The 14,407 participants who were 25 to 74 years of age when they were examined in NHANES I (1971-75) are included in the followup study population.

In the first wave, the 1982-84 NHEFS, data were collected on all 14,407 subjects (i.e., individuals examined at NHANES I) in the cohort. Tracing of subjects began in 1981 and data collection was conducted from 1982 to 1984. Approximately 93 percent (n=13,383) of the cohort was successfully traced by the end of the survey period. Detailed information on the design, content, and operation of the 1982-84 NHEFS may be found in the Plan and Operation of the NHANES I Epidemiologic Followup Study 1982-84, Vital and Health Statistics, Series 1, No. 22. The basic design of the 1982-84 NHEFS consisted of the following components:

- tracing subjects or their proxies to a current address;
- acquiring death certificates for deceased subjects;
- performing in-depth interviews with the subjects or with their proxies including, for surviving subjects, taking pulse, blood pressure, and weight measurements of subjects; and,
- obtaining hospital and nursing home records, including pathology reports and electrocardiograms.

The 1986 NHEFS, the second wave of the NHEFS, collected information on changes in the health and functional status since the last contact with the older members of the NHEFS cohort. It was restricted to those subjects who were at least 55 years old at their NHANES I examination (n=5,677), which is almost 40 percent of the entire NHEFS cohort. This group includes 1,697 subjects who were deceased at the time of the 1982-84 NHEFS and 3,980 subjects who were not known to be deceased at the time

of the 1982-84 NHEFS. The 1982-84 NHEFS decedents were excluded from additional data collection in the 1986 NHEFS. Tracing and data collection were undertaken for the 3,980 subjects not known to be deceased in the 1982-84 NHEFS, regardless of their tracing or interview status in that survey. The design and data collection procedures adopted in the 1986 NHEFS were very similar to the ones developed in the 1982-84 Survey: subjects (or their proxies) were traced; subject and proxy interviews were conducted; and, health care facility abstracts and death certificates were collected. For more information on the 1986 NHEFS, see the Plan and Operation: NHANES I Epidemiologic Followup Study, 1986 (a Vital and Health Statistics, Series 1, No. 25).

Tracing began in November 1984 for the 1986 NHEFS. A large variety of tracing sources were used in order to locate subjects. For example, all subjects were matched against information from the National Death Index (NDI) and the enrollee files of the Health Care Financing Administration. The additional tracing sources used in the 1986 wave, though, depended on the subject's vital status in the 1982-84 NHEFS. Subjects who had been successfully traced alive in the 1982-84 NHEFS underwent one set of tracing procedures while those who had not been successfully traced in the 1982-84 NHEFS underwent another.

Date and place of death were obtained for all subjects identified during tracing as deceased. These data were used to obtain a copy of the subject's death certificate from the appropriate State Vital Statistics office. A death identified by the NDI or by the other tracing methods was also verified by obtaining the death certificate from the State of death. All death certificates were coded by NCHS using the International Classification of Diseases, Ninth Revision and multiple cause-of-death codes.

All subjects who could not be located through the tracing procedures were considered lost-to-followup in the 1986 NHEFS. In some cases, information about the death of a subject was obtained from a former neighbor, a relative or another tracing source. Although this information was noted

in the subject's tracing record, he or she was considered lost-to-followup unless the information was verified by means of a death certificate or proxy interview. A subject's death had to be confirmed by either a death certificate or proxy interview.

In addition to verifying the subject's vital status, the tracing process also was used to obtain the current address of a surviving subject as well as to identify a knowledgeable proxy respondent for a deceased subject or a surviving but incapacitated subject. Respondents (i.e., subjects or their proxies) who were identified and located through the tracing procedure were then contacted and asked to participate in a telephone interview. In a few cases, subjects who had been traced successfully could not be relocated for the interview. Only their vital status and the date when they were last traced in the 1986 Survey are available.

A major difference between the 1982-84 and 1986 NHEFS waves was the manner in which the interviews were conducted. In the 1982-84 NHEFS, the two-hour subject interview usually was conducted in-person while, in the 1986 NHEFS, the interview was shortened to 30 minutes in length and was conducted primarily by telephone. In addition, since the questionnaire was not administered in-person, no physical measurements were made in the 1986 NHEFS.

The 1986 NHEFS interviews were conducted over the telephone using a Computer Assisted Telephone Interviewing (CATI) system. CATI is a telephone interviewing technique that allows the interviewer to enter the answers supplied by the respondent directly into the computer. Thus, editing and coding time is reduced and keypunching from a hard copy questionnaire is eliminated. A computer program drives the questionnaire so that the correct skip patterns are followed and the appropriate questions are displayed on the computer monitor. The skip patterns are based on information gathered from previous data collection waves or on responses provided during the interview. For example, the questions on pregnancy and menstrual history in the 1986 NHEFS interview were programmed to be skipped automatically if the subject was male or if the

female subject had had an interview in 1982-84. Edit and logic checks are incorporated into the data collection system itself, thus improving the quality of the data.

The 1986 NHEFS included a health care facility record collection component designed to provide information on all overnight stays for subjects since their last interview. Subjects were eligible for this component if either an interview or a death certificate had been collected for them in the 1986 Survey.

As of July 28, 1986, the end of the 1986 NHEFS survey, 3,767 (94.6 percent) of the 3,980 members of the 1986 NHEFS cohort had been successfully traced. Interviews were conducted for 3,608 subjects (95.8 percent of those successfully traced), 167 of which were conducted during three pretest periods in 1985 and 3,441 during a main survey period in 1986. In addition, 5,405 facility stay records were collected for 2,021 subjects. Death certificates were obtained for 616 (97.0 percent) of the 635 subjects who were known to have died since last contact.

The data collected from the 1986 NHEFS are stored on four separate tapes:

1) Vital and Tracing Status tape -- contains vital status, tracing, and demographic information on <u>all</u> subjects 55 years or older at NHANES I,

2) Interview tape -- contains the data collected from the 1986 NHEFS subject and proxy interviews,

3) Mortality Data tape -- contains data abstracted from the death certificate for <u>all</u> known decedents aged 55 years or older at NHANES I for whom a death certficate was obtained,

4) Health Care Facility Stay tape -- contains information collected during the 1986 NHEFS on reports of stays in hospitals and nursing homes, as well as information abstracted from facility medical records. This tape is discussed below in the following pages.

1986 NHEFS HEALTH CARE FACILITY STAY DATA TAPE CHARACTERISTICS

Title:	1986 NHEFS Health Care Facility Stay Data Tape
Data Set Name:	NHEFS2.FACIL55
Record Length:	429
Blocksize:	31,746
Number of Records:	5,405
Number of Reels:	1
Recording Mode:	FIXED BLOCK, EBCDIC
Density:	6250 bpi
Channel:	9 TRACK
Created by:	Office of Analysis and Epidemiology Division of Analysis National Center for Health Statistics Federal Center Building II, Room 2-27 3700 East-West Highway Hyattsville, Maryland 20782

1986 NHEFS HEALTH CARE FACILITY STAY INTRODUCTION

The 1986 NHEFS Health Care Facility Stay file contains information on all overnight health care facility stays for members of the 1986 Followup cohort. The 1986 Followup cohort consisted of the 3,980 subjects who were at least 55 years old at their NHANES I examination and were not known to be deceased at the time of the 1982-84 NHEFS. Followup cohort members who have either an interview or a death certificate on the 1986 NHEFS data files were eligible for the health care facility records component. The aim of this component was to develop a complete set of health care facility (i.e., hospital and nursing home) records for each 1986 Followup cohort member. This was accomplished by identifying all facility stays through a series of reporting mechanisms. Facilities were contacted to obtain copies of medical records. Reports and medical records were then linked and the 1986 NHEFS Health Care Facility Stay file was constructed. The procedures for obtaining reports and collecting abstracts are described in detail in the Plan and Operation: NHANES I Epidemiologic Followup Study, 1986 (Vital and Health Statistics, Series 1, No. 25). They are outlined briefly, below.

The 1986 NHEFS Health Care Facility Stay file contains all information on overnight stays that are in-scope for the 1986 NHEFS period. For subjects interviewed during the 1982-84 NHEFS, the 1986 in-scope survey period is from the date of the 1982-84 interview to the date of the 1986 interview for surviving subjects and from the date of the 1982-84 interview to the date of death for deceased subjects. The 1986 in-scope survey period for subjects who were not interviewed in the 1982-84 NHEFS is from the date of NHANES I examination to the date of the 1986 interview for surviving subjects and from the date of NHANES I examination to the date of death for deceased subjects. Stays that were reported prior to the in-scope period were defined as out-of-scope for the 1986 survey.

Identification of Stay Reports:

Reports of overnight hospital or nursing home facility stays were obtained from various sources. Most reports were elicited through a series of detailed questions in sections B and F of the interview. Generally, respondents were asked to report all overnight facility stays since 1980 if the subject was last interviewed in the 1982-84 NHEFS or since 1970 if the subject was last interviewed at NHANES I examination. In addition to interview information, data on facility stays were gathered from other reporting sources: from the death certificate, tracing sources, and other hospital abstracts. At the conclusion of the interview, authorization was obtained for permission to contact facilities.

Facility Data Collection:

For each stay reported during the interview, the name and address of the facility, the reported dates of the stay, and the reason for the stay were recorded on the hospital and health care facility chart (HHCF). A separate log book was kept containing similar data for reports gathered from the death certificates, tracing sources, and other hospital abstracts. All reports of facility stays were compiled and entered into a computerized tracking system. All reported facilities were contacted by mail and asked to review the subject's medical records and to abstract information on exact dates of admission, discharge and diagnoses onto standard abstract forms. In addition to completing abstract forms, facilities were requested to submit photocopies of selected sections of the subject's inpatient record i.e., the "facesheet", the discharge summary, the third day EKG (for myocardial infarction diagnoses, 410 in the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)) and of pathology reports (for any admission where a new malignancy was diagnosed).

Matching Records:

As the abstracts were received, they were checked against report information in the tracking system to determine if the abstract "matched" any of the reported stays. Date of admission and diagnosis were used as matching criteria but exact matches on date or diagnosis were not required for a stay to be considered matched. Abstracts were matched to reports if the reported date of admission was within a year of the actual date of admission and if the reported reason for admission involved the same body system as at least one of the diagnoses present on the abstract. Cases that did not meet these specific criteria were reviewed by NCHS staff and matched when appropriate. Since the matching rules allowed for an admission date of up to one year before or after the reported date of admission, some stay records are present on the file with a match record status, an out-of-scope report date, but an in-scope date on the abstract. These records are identified by a Type C flag in position 199 of the file.

Each record on the file represents an overnight facility stay. Therefore, one or more records will exist for some 1986 Followup cohort subjects, while other subjects will have no records on the file. The structure of the data file reflects the system used to obtain and process stay information. The record is divided into four major sections: 1) the report section, 2) the record status section, 3) the abstract section and, 4) the related stay section. An example of the record layout is provided in figure 1.

The subject identification number (i.e. the sample sequence number) is in positions 1-5 on each record. This number is unique for each subject and is used when linking the Health Care Facility Stay tape to all other NHEFS and NHANES I Public Use Data Tapes. The total number of records per subject is found in positions 6-7 on the file. The first section of the record is the report section (positions 29-59 and 63-204) which contains information from the reporting source as well as stay identification numbers assigned by NCHS. Each stay entered into the report section is assigned a health care facility stay id number (positions 29-33). When used in conjunction with the sample sequence number, this number uniquely identifies each record on the file.

The reported date of admission is found in positions 47-54. This date is used in conjunction with the last interview date to determine whether reported stays were in-scope for the NHEFS 1986 survey (position 199).

The record status section (positions 60-62) contains a code for the result of the abstract request, i.e. match or non-match status. If a facility returned an abstract that matched a report then a record status code of MAT (match) was applied. A returned abstract that did not match a report but was in-scope for the 1986 survey period was assigned the record status code of ASF (additional stay found). A record status code of CRM (cross-referenced match) was applied to a stay that was the continuation of a stay begun prior to the 1986 NHEFS survey period. If an abstract was not returned, the appropriate non-match code was assigned.

The abstract section (positions 205-379) contains the information obtained from the facility records including actual dates of admission, discharge and diagnoses. The diagnoses on the abstracts were coded using the ICD-9-CM according to the medical coding specifications detailed in the following section of this codebook. The abstract section is similar to the original 1982-84 NHEFS Health Care Facility record file released in August, 1987 while the other three sections are new additions to the NHEFS 1986 facilty tape format. (A revised file which restructures the 1982-84 Health Care Facility data into the current format has also been released.)

Information will be present in one or more sections of the record depending on whether a report was obtained, and whether an abstract was received. The presence or absence of information in the first three sections results in three different record profiles. Figure 2 illustrates these three profiles. The first is the successfully matched stay record, where an abstract was received which matched a report. Abstract information is added to the report and the code of MAT was entered into the record status section. Complete information is available in the first three sections of the record for these stays. The second type occurs when an abstract was not matched to a report and, therefore, no data is contained in the abstract section. The appropriate non-match code was entered in the record status section. The

third type of record is one which was generated solely by the receipt of a facility abstract. This type of record resulted when the facility returned an in-scope abstract that did not match with any report on the tracking system. When this occurred, the abstract was entered on the file, and stay identifiers were assigned in the report section of the record but no other information in the report section is present. An ASF (additional stay found) code was entered in the record status section.

Due to the procedures we instituted for maximizing the collection of reports of hospital or nursing home stays, i.e., deliberately requesting out-of-scope report information, it was necessary to devise rules for removing the "correctly reported" out-of-scope reports from the final version of the file. This was only possible after the facilities returned abstract information to us. Reports of stays with a reported date of admission more than one year prior to the last interview in health care facilities which had not been contacted previously were flagged with a Type D in position 199. If an in-scope abstract was received from the facility it was added onto the file with a record status code of ASF, and the Type D report was deleted from the final version of the file. If the facility responded to the request for information but no in-scope abstracts were received from the facility, the Type D report was deleted from the file based on the presumption that the date had been correctly reported and the stay was out-of-scope. In 20 cases, the Type D reports remain on the final version of the file. This occurred when it was impossible to contact the facility or the facility did not return any information to us. These records for unconfirmed reports of out-of-scope stays can be eliminated from analyses at the analysts' discretion. A Type C flag was assigned in position 199 when a reported date of admission was within one year of the previous interview. If an in-scope abstract was returned which matched the Type C report, it was assigned a record status code of MAT (n=73). (The matching rules permitted an admission date of up to one year before or after the reported date of admission). If the facility responded but no in-scope abstracts were received the Type C reports were removed from the file again on the assumption that the correct date had been reported and the stay was truly out-of-scope. In 10 cases it was not possible to contact the facility, and the Type C reports remain on the file.

These unconfirmed reports of out-of-scope stays are identified by a non-match status in positions 60-62 and a Type C flag in position 199.

The final section of the record, the related stay codes (positions 380-429), are used to identify stays which are contained within other stays. This occurred most often when nursing home residents had a brief hospital stay but then returned to the nursing home. A detailed example of the related stay section is presented below. In panel A, a chronologic history of a subject's hospital and nursing home stays is presented in order to facilitate the discussion of the related stay codes. This subject was admitted to the nursing home on March 1, 1985, and discharged to the hospital on April 1, 1985. He returned to the original nursing home on April 8 and stayed until April 22 when he required readmission to the hospital. He returned from the hospital to the nursing home on April 25, 1985 where he remained until April 30, 1985.

Panel A: Chronologic profile of hospital and nursing home stays:

Location	Admission	Discharge
Nursing home	03/01/85	04/01/85
Hospital	04/01/85	04/08/85
Nursing home	04/08/85	04/22/85
Hospital	04/22/85	04/25/85
Nursing home	04/25/85	04/30/85

Panel B illustrates how these stays are present in the final file. The three nursing home stays were collapsed into one long stay with two related hospitalizations. The related stay codes were added to demonstrate the relationship between the hospital and nursing home stays.

Panel B: Final file layout

Variable Position:					
29-33	209	210-215	216-221	380-384	385-389
Variable Name:					
Stay Number	Type	Admit	Dis-charge	First Related	Second Related
20201	N. Home	03/01/85	04/30/85	20101	20102
20101	Hosp	04/01/85	04/08/85	20201	
20102	Hosp	04/22/85	04/25/85	20201	

MEDICAL CODING SPECIFICATIONS

Medical coding for the NHEFS 1986 data tape was based on the International Classification of Diseases-9th Revision-Clinical Modification (ICD-9-CM). The health care facility was asked to abstract all diagnoses and procedures onto a special form. In most cases, a copy of the hospital discharge summary and/or medical records facesheet was attached to the abstract. The diagnoses and procedures listed on the discharge summary or facesheet were then compared with those provided on the abstract form. In most instances, discrepancies were resolved by coding the diagnoses or procedures as provided on the discharge summary or the facesheet.

All diagnoses were coded to the highest level of specificity possible. The fourth-digit subcategory for diagnosis and procedure codes was used whenever possible. The fifth-digit subclassification of disease for diagnosis codes was also used when appropriate. A three-digit ICD code was used only if it could not be further subdivided. The following rules were used to code diagnoses and procedures.

Rules Governing Medical Coding of Diagnoses:

All medical diagnoses listed on the health care facility abstract form or the discharge summary are coded in the order in which the diagnoses were listed. The principal diagnosis is the condition established after study to be chiefly responsible for occasioning the admission of the patient to the health care facility. The admitting diagnosis is not used as the principal diagnosis unless the admitting and discharge diagnoses are the same.

> Ex: Patient admitted with a diagnosis of bronchopneumonia. After workup and treatment, x-ray findings, etc., the patient was discharged with a final diagnosis of bronchopneumonia. The principal diagnosis is coded 485 for bronchopneumonia.

Note that the facility was asked to select the principal diagnosis and no review of the records was made to determine if the correct diagnosis was selected.

All other diagnoses or conditions existing at the time of admission or that developed subsequently during the stay are coded.

> Ex: Patient was admitted with a diagnosis of uncontrolled diabetes mellitus, and during the course of examination and treatment, phlebitis was discovered. The diabetes and the phlebitis are coded.

Diagnoses documented as probable, possible, suspected, question of, suggestive of, compatible with, or questionable are coded and prefixed with a "P".

> Ex: If the diagnosis is stated possible myocardial infarction, the diagnosis code is P410.9.

If a diagnosis is stated as "rule out" or "R/O", the condition is coded as if it exists and the "P" prefix is not used. If a diagnosis is stated as "ruled out", the condition is not coded.

> Ex: If "R/O M.I." appears on the facesheet, the code is 410.9
> If "M.I. ruled out" appears, the condition is not coded.

Hospital acquired infections, such as a "staph" infection, if documented on the facesheet and/or discharge summary are coded. Documentation may be in the form of a note by the infections committee, stamped notation, or a checkmark, depending on the record format.

Malignant neoplasms are coded according to ICD-9-CM coding specifications which indicate primary site of origin.

Injuries and poisonings are coded, where applicable, using both the nature of the injury and the external cause of injury code (E800-E999).

> Ex: Patient sustained comminuted fracture of the femur due to a fall down stairs. Nature of injury code is 821.00 and external cause of injury code is E880.9

"History of" conditions are not coded with the following exceptions:

Old myocardial infarction (more than 8 weeks since last occurrence)

Status post bypass surgery

Malignant neoplasm (cancer in remission or under treatment)

Old cerebrovascular accident

Sterilization

Normal pregnancy undelivered

Manipulation of an IUD

These diagnoses are coded using "V" codes and were used on a limited basis. Recurrent malignancy codes are prefixed with an "R".

Symptoms (ICD-9-CM codes 7800-7999) were coded using the following guidelines:

1. When the only diagnosis listed on the abstract form, facesheet, and/or discharge summary is a symptom, the symptom is coded.

   Ex: The only discharge diagnosis listed is "chest pain". The code number 786.50 (chest pain, unspecified) is assigned.

2. When a symptom is listed that is unrelated to any of the diagnoses listed, the symptom is coded.

   Ex: The discharge diagnoses listed are acute myocardial infarction, diabetes mellitus, and hepatomegaly. The hepatomegaly is also coded.

3. When a symptom is listed and is related to a listed discharge diagnosis the symptom is not coded.

   Ex: The discharge diagnoses listed are diabetes mellitus, acute appendicitis, severe abdominal pain. Only the diabetes and the appendicitis are coded. The abdominal pain is not coded.

Rules Governing Medical Codes for Procedures:

The same general rules apply to coding procedures as to coding diagnoses. Medical procedures are coded and sequenced in accordance with the principal and secondary procedures described on the health care facility abstract form or the discharge summary/facesheet.

The principal procedure is the primary procedure most related to the principal diagnosis and is performed for definitive treatment as opposed to diagnostic and/or exploratory purposes.

Ex: Diagnosis - uterine fibroids.
Procedures - biopsy of uterus, total abdominal hysterectomy, incidental appendectomy.

The hysterectomy is coded as the principal procedure and the appendectomy and the biopsy are coded as secondary procedures.

All procedures documented on the discharge summary and/or facesheet are coded if they fall into the following categories:

Biopsies (if related to the principal diagnosis and procedure or if related to other listed diagnoses)

Surgical procedures

Cardiac catheterizations

D and C (following delivery or abortion only)

The following procedures are not coded:

Surgical approach

Operative cholangiogram

Lumbar puncture

CT scan

Endoscopy

Diagnostic D and C

Diagnostic radiology

Examination (under anesthesia, physical exam, etc.)

Manipulations

Physical therapy

Application or removal of casts, splints, etc.

Medical Coding Conventions:

Diagnostic codes--Up to ten diagnoses are coded for each hospital and nursing home stay. The format for each diagnosis code is six positions. The following conventions were used when entering diagnostic codes on the data tape:

1. ICD-9-CM diagnostic codes (including "V" codes) were entered beginning with the second position of the variable field continuing through the sixth position. There is an implied decimal point between the fourth and fifth positions of the variable field.

2. If the diagnoses code required less than five digits the remaining tape positions are blank.

3. Prefix codes "P" and "R" are coded in the first tape position. If the diagnosis code has no prefix the first position is blank.

   Ex. 1: _ 4 2 2 9 0 Code is 422.90
   Ex. 2: _ V 7 1 1 _ Code is V71.1
   Ex. 3: _ 4 3 6 _ _ Code is 436
   Ex. 4: P 1 8 0 0 _ Code is P180.0
   Ex. 5: R 1 7 4 9 _ Code is R174.9

4. E codes - External cause of injury codes
   An external cause of injury code is provided, when applicable, immediately after the medical diagnosis code which describes the nature of the injury. E codes were entered on the data tape beginning in the first position of the variable field and

continuing through the fifth position. There is an implied decimal point between the fourth and fifth positions of the variable field. If an E code required less than five positions the remaining positions are blank. If an E code is not applicable (i.e. the medical diagnosis code is not a nature of injury code) or could not be coded, the variable field is blank.

Ex. 1: E 9 0 6 1 Code is E906.1

Ex. 2: E 8 5 1 _ Code is E851

Procedure codes--Up to five procedures are coded for each health care facility record. Each procedure code is formatted in a field containing four positions. Procedure codes were entered beginning with the first position of the variable field continuing through the fourth position. There is an implied decimal point between the second and third positions of the variable field. If a procedure code required less than four positions the remaining positions are blank.

Ex. 1: 4 2 9 2 Code is 42.92

Ex. 2: 0 3 1 _ Code is 03.1

NHANES I EPIDEMIOLOGIC FOLLOWUP STUDY 1986
Health Care Facility Stay File Codebook

Tape Position	Frequencies	Variable Description and Codes
		SUBJECT INFORMATION
1-5	5405	NHANES I Sample Sequence Number
6-7		Record Count
	5405	01-29 = Total number of records
		Note: Each record on the file represents an overnight stay in a health care facility (hospital or nursing home). This variable identifies for each subject the total number of records on the file. It will be the same for each record the subject has on the file.
8-28	5405	Blank

Tape Position	Frequencies	Variable Description and Codes
		STAY IDENTIFIERS AND REPORTED INFORMATION ON FACILITY STAYS
		Note: The report section of the record (positions 29-59 and 63-204) contains the information on health care facility stays that was reported on the questionnaire, on a death certificate, on another hospital/nursing home abstract form, or obtained from other sources.
(29-33)		Health Care Facility Stay ID Number
		Note: When used in conjunction with the sample sequence number this number uniquely identifies each record on the tape. It is composed of three variables: Survey Period Identifier, Facility Number and Stay Number Within Facility. For example: a Stay Number of 20102 refers to a facility stay reported during the NHEFS 1986 wave (2) in the first facility reported for that subject (01) but the second admission to that facility (02).
29		Survey Period Identifier
	5405	2 = NHEFS 1986
		Note: This variable identifies the survey period in which the stay data were collected. A facility stay reported during the NHEFS 1986 wave will be identified with a code number "2". All records on this file are coded "2" in this field.
30-31		Facility Number
	5405	01-08 = Hospital/nursing home number
		Note: For each NHEFS subject, a two digit number was assigned to each facility in which a stay occurred. Thus, if a subject had multiple stays at the same facility, all stays will have the same facility number.
		Facility numbers were assigned consecutively. However, due to tape editing, there are missing numbers in the sequence of facility numbers.

Tape Position	Frequencies	Variable Description and Codes
32-33		Stay Number Within Facility
	5385	01-30 = Stay number
	20	00 = D stay record
		Note: The two digit stay numbers were assigned to identify different stays in the same facility. Type D stay records were assigned a stay number of "00". A type D stay record is defined as a stay with a reported admission date more than one year prior to the date of last interview (see position 199).
		Stay numbers within facilities were assigned consecutively. However, due to tape editing, there are missing numbers in the sequence of stay numbers within facilities.
34-35		Facility ID Prefix
	4784	01 = Hospital
	528	02 = Nursing home
	93	03 = Out of country, don't know, not ascertained
		Note: This variable identifies the type of facility to which the request for a stay record was mailed.
36-46	5405	Blank

Tape Position	Frequencies	Variable Description and Codes
(47-54)		Reported Admission Date/Range
		The date of admission to a facility is reported by month, day and year. A range of years was coded when the respondent was unable to recall the exact year of admission. When the year of admission was reported as a range, the beginning year of the range is found in positions 51-52 and the ending year of the range is found in positions 53-54. Except for type D (position 199) records the reported date of admission is present for all source code 2 and 4 records (see position 200), and CRM and CRX records (positions 60-62).
47-48		Reported Month of Admission
	2674	01-12 = Month of admission
	1592	98 = Don't know
	20	99 = Not ascertained
	1119	Blank = Type D (position 199), record status code ASF (positions 60-62), source code 1 or 3 (position 200) and record status code (positions 60-62) not a cross-referenced stay (CRM, CRX)
49-50		Reported Day of Admission
	1175	01-31 = Day of admission
	3091	98 = Don't know
	20	99 = Not ascertained
	1119	Blank = Type D (position 199), record status code ASF (positions 60-62), source code 1 or 3 (position 200) and record status code (positions 60-62) not a cross-referenced stay (CRM, CRX)

Tape Position	Frequencies	Variable Description and Codes
51-52		Reported Year of Admission or Beginning Year of Range
	4030	70-86 = Year of admission or beginning year of range (1970-1986)
	239	98 = Don't know
	17	99 = Not ascertained
	1119	Blank = Type D (position 199), or record status code ASF (positions 60-62), or source code (position 200) 1 or 3 and record status code (positions 60-62) not a cross-referenced stay (CRM, CRX)
53-54		Reported Year of Admission - Ending Year of Range
	322	73-86 = Ending year of range (1973-1986)
	5083	Blank = No range given for reported year of admission, type D (position 199), or record status code ASF (positions 60-62), or source code (position 200) 1 or 3 and record status code (positions 60-62) not a cross-referenced stay (CRM, CRX)
(55-59)		ID Number of Cross Referenced Facility Status Stay Note: The ID number on the 1982-84 NHEFS Facility Tape (positions 29-33) is used to reference stays in a hospital or nursing home that began during the 1982-84 NHEFS period and which continue into the 1986 survey period. This variable is coded only for records with a CRM or CRX in positions 60-62 on the 1986 file.
55		Survey Period Identifier of Cross-referenced Facility Stay
	132	1 = NHEFS 1982-84
	5273	Blank = Stay not cross-referenced
56-57		Facility Number of Cross-referenced Stay
	132	01-06 = Stay number
	5273	Blank = Stay not cross-referenced

Tape Position	Frequencies	Variable Description and Codes
58-59		Stay Number Within Facility of Cross-reference Stay
	132	01-03 = Stay number
	5273	Blank = Stay not cross-referenced
		RECORD STATUS
		Note: The record status section of the record (positions 60-62) contains information on the outcome of the request for a health care facility stay.
60-62		Record Status Code
		Note: See Appendix A for an explanation of the record status codes.
	5405	ANO - XRD = Record status code

Tape Position	Frequencies	Variable Description and Codes
(63-198)		Reported Conditions and Codes
		During the process of completing the Hospital and Health Care Facility Chart (HHCF) respondents described the conditions that led to their overnight facility stays. This information is included as a text field on the stay record. Space is allotted for the recording of up to four reasons for the hospital or nursing home stay (see positions 67-96, 101-130, 135-164 and 169-198).
		A numeric code was assigned to each text description to aid the researcher in the use of this information (see positions 63-64, 97-98, 131-132, 165-166). These variables should be used in conjunction with information in the abstract section, i.e, ICD-9-CM diagnosis codes, present on records with a record status code of MAT, ASF or CRM. Appendix B contains a complete description of these fields along with guidelines for their use.
(63-96)		First Reported Condition
63-64		Condition Code
	4174	01-37 = Condition code (See Appendix B)
	1231	Blank = Source Code equal to 2 or 3 or D stay record or Record Status Code ASF or source code equal to 1 and record status code not CRM.
65-66	5405	Blank
67-96		Condition Text
	4174	Description of reason for facility stay
	1231	Blank = Source Code equal to 2 or 3 or D stay record or Record Status Code ASF or source code equal to 1 and record status code not CRM.

Tape Position	Frequencies	Variable Description and Codes
(97-130)		Second Reported Condition
97-98		Condition Code
	1481	01-36 = Condition code (See Appendix B)
	3924	Blank = Source Code equal to 2 or 3 or D stay record or Record Status Code ASF or source code equal to 1 and record status code not CRM or only one condition reported
99-100	5405	Blank
101-130		Condition Text
	1481	Description of reason for facility stay
	3924	Blank = Source Code equal to 2 or 3 or D stay record or Record Status Code ASF or source code equal to 1 and record status code not CRM or only one condition reported
(131-164)		Third Reported Condition
131-132		Condition Code
	402	01-35 = Condition code (See Appendix B)
	5003	Blank = Source Code equal to 2 or 3 or D stay record or Record Status Code ASF or source code equal to 1 and record status code not CRM or less than three conditions reported
133-134	5405	Blank
135-164		Condition Text
	402	Description of reason for facility stay
	5003	Blank = Source Code equal to 2 or 3 or D stay record or Record Status Code ASF or source code equal to 1 and record status code not CRM or less than three conditions reported

Tape Position	Frequencies	Variable Description and Codes
(165-198)		Fourth Reported Condition
165-166		Condition Code
	117	01-35 = Condition code (See Appendix B)
	5288	Blank = Source Code equal to 2 or 3 or D stay record or Record Status Code ASF or source code equal to 1 and record status code not CRM or less than four conditions reported
167-168	5405	Blank
169-198		Condition Text
	117	Description of reason for facility stay
	5288	Blank = Source Code equal to 2 or 3 or D stay record or Record Status Code ASF or source code equal to 1 and record status code not CRM or less than four conditions reported

Tape Position	Frequencies	Variable Description and Codes
199		Type of Stay Flag
	83	C = A reported stay with admission date up to one year prior to the date of last interview (i.e. the NHEFS 1982-84 if interviewed at that time or date of NHANES I Examination if never interviewed at NHEFS 1982-84).
	20	D = A reported stay with admission date more than one year prior to date of last interview and the facility had not been contacted during the 1982-84 NHEFS. If there were multiple reported stays in the same facility that were all type D (more than one year prior to last interview) these stays were consolidated into one entry in the tracking system. If an in-scope abstract was received in response to a type D report, the abstract was never matched, but assigned a record status code of ASF (positions 60-62). The type D report was then removed from the file. The 20 type D reports remaining on the final file are all non-responses from the facility and thus were not able to be resolved.
	5302	Blank = In-scope stay; a reported date of admission after the last interview date. This field is also blank for record status codes of ASF, CRM or CRX (positions 60-62).
		Note: This variable identifies reported facility stays as in-scope or out-of-scope for the NHEFS 1986 interview period. Reported dates of admission of don't know (989898) or not ascertained (999999) in positions 47-52 were considered in-scope.
200		Source of Report of Stay that Initiated Request for Abstract
	36	1 = Information from death certificate
	103	2 = Information from hospital abstract report
	79	3 = Information from other source
	4192	4 = Information from NHEFS 1986 interview
	995	Blank = Not a requested stay. Additional stay information obtained from facility (record status code ASF positions 60-62). ASF may also be coded as source code 3.

Tape Position	Frequencies	Variable Description and Codes
201-204	5405	Blank
		ABSTRACT DATA
		Note: The abstract data portion of the record (positions 205-380) contains information obtained from an abstract form returned by the facility. This section of the stay record (excluding positions 207-208) will be blank when a facility did not return an abstract form for a stay (n=1496).
205-206		Abstract Number
	3909	01-29 = Number of abstract
	1496	Blank = Stay reported, no abstract form received
		Note: For each subject, a two digit number was assigned consecutively to each abstract form received.
207-208		Total Number of Abstracts Received
	5405	00-29 = Total number of abstracts received
		Note: This number represents the total number of abstracts received for each subject. The total number is repeated on each subject record.
209		Facility Record Type
	3496	1 = Hospital
	413	2 = Nursing home
	1496	Blank = Stay reported, no abstract form received
(210-215)		Date of Admission
210-211		Month of Admission
	3909	01-12 = Month of admission
	1496	Blank = Stay reported, no abstract form received
212-213		Day of Admission
	3909	01-31 = Day of admission
	1496	Blank = Stay reported, no abstract form received

Tape Position	Frequencies	Variable Description and Codes
214-215		Year of Admission
	3909	72-86 = Year of admission (1972-1986)
	1496	Blank = Stay reported, no abstract form received
(216-221)		Date of Discharge
		Note: When a subject had a brief break in a nursing home stay not due to a hospitalization, the nursing home stays were combined into one long stay with the latest discharge date assigned to the stay. The information contained in the report and abstract sections of the stay is from the earliest abstract. For example: subject A was in a nursing home from 10-31-85 to 12-22-85. The subject was readmitted to the same nursing home 1-3-86 and stayed until their death 3-5-86. No information is available for 12-22-85 to 1-3-86. These 2 stays would appear on the file as 1 stay from 10-31-85 to 3-5-86. Length of stay would be calculated on the entire stay (see positions 222-225). If the break in the nursing home was due to an interspersed hospitalization, the nursing homes stays were collasped as described above and a code was entered in the related stay section (see positions 380-429).
216-217		Month of Discharge
	3732	01-12 = Month of discharge
	177	97 = Inapplicable (still at facility on date of 1986 interview)
	1496	Blank = Stay reported, no abstract form received
218-219		Day of Discharge
	3732	01-31 = Day of discharge
	177	97 = Inapplicable (still at facility on date of 1986 interview)
	1496	Blank = Stay reported, no abstract form received
220-221		Year of Discharge
	3732	72-86 = Year of discharge (1972-1986)
	177	97 = Inapplicable (still at facility on date of 1986 interview)
	1496	Blank = Stay reported, no abstract form received

Tape Position	Frequencies	Variable Description and Codes
222-225		Length of Record Stay
	16	0000 - Died on day of admission
	3716	0001-4218 - Total number of days in facility
	177	9997 - Inapplicable (still at facility on date of 1986 interview)
	1496	Blank - Stay reported, no abstract form received
		Note: Length of stay is calculated by subtracting the date of admission from the date of discharge. For subjects with nursing home stays, brief breaks were collapsed into one continuous nursing home stay (see positions 216-221). For subjects with information coded in the related stays section (see positions 380-429) length of stay will include time spent in other facilities.
226		Was the Patient in Cardiac Intensive Care Unit?
	379	1 - Yes
	2790	2 - No
	413	7 - Inapplicable (facility is a nursing home)
	327	9 - Not ascertained
	1496	Blank - Stay reported, no abstract form received
227-229		Number of Days in Cardiac Intensive Care Unit
	363	000-197 - Number of days
	3530	997 - Inapplicable (position 226 - 2,7,9)
	16	999 - Not ascertained
	1496	Blank - Stay reported, no abstract form received
		Note: A length of stay of 0 days occurred when a subject was admitted to the facility and died on the day of admission.
230		Was the Patient In Other Intensive Care Unit?
	317	1 - Yes
	2607	2 - No
	413	7 - Inapplicable (facility is a nursing home)
	572	9 - Not ascertained
	1496	Blank - Stay reported, no abstract form received

Tape Position	Frequencies	Variable Description and Codes
231-233		Number of Days in Other Intensive Care Unit
	310	000-090 = Number of days
	3592	997 = Inapplicable (Position 230 = 2,7,9)
	7	999 = Not ascertained
	1496	Blank = Stay reported, no abstract form received
		Note: A length of stay of 0 days occurred when a subject was admitted to the facility and died on the day of admission.
234		Patient Admitted to Nursing Home From:
	121	1 = Private residence
	214	2 = Acute care hospital
	6	3 = Chronic disease hospital
	68	4 = Other nursing home
	3496	7 = Inapplicable (facility is a hospital)
	4	9 = Not ascertained
	1496	Blank = Stay reported, no abstract form received
235		Disposition of Hospital Patient
	2556	1 = Routine discharge/discharged home
	6	2 = Left against medical advice
	473	3 = Discharged/transferred to another facility or organization
	135	4 = Discharged/referred to organized home care service
	268	5 = Died
	7	6 = Not discharged/still in hospital on the date of 1986 interview
	413	7 = Inapplicable (facility is a nursing home)
	51	9 = Subject discharged, disposition not ascertained
	1496	Blank = Stay reported, no abstract form received

Tape Position	Frequencies	Variable Description and Codes
236		Disposition of Nursing Home Patient
	170	1 = Not discharged/still in a nursing home on date of 1986 interview
	23	2 = Discharged to private residence/referral to organized home care services
	106	3 = Died
	39	4 = Discharged to private residence/no referral
	75	5 = Transferred to another facility
	3496	7 = Inapplicable (facility is a hospital)
	1496	Blank = Stay reported, no abstract form received
237		Transferred to Another Health Care Facility
	37	1 = Acute care hospital
	35	2 = Other nursing home
	0	3 = Chronic disease hospital
	3	4 = Other
	3834	7 = Inapplicable (Position 236 = 1,2,3,4 or 7)
	1496	Blank = Stay reported, no abstract form received
238-239		Number of Diagnoses
	3909	01-22 = Number of diagnoses
	1496	Blank = Stay reported, no abstract form received
		Note: This variable identifies the total number of diagnoses entered on the abstract. The number of coded diagnoses may exceed the maximum number allowed on the data tape (10).
240-245		Principal Diagnosis
	3909	ICD-9-CM Code
	1496	Blank = Stay reported, no abstract form received
		Note: See medical coding specifications.
246-250		Principal Diagnosis E Code
	299	ICD-9-CM Code
	5106	Blank = Stay reported, no abstract form received or principal diagnosis does not require E code
		Note: See medical coding specifications.

Tape Position	Frequencies	Variable Description and Codes
251-256		Second Diagnosis
	3413	ICD-9-CM Code
	496	999997 = Inapplicable (only one diagnosis coded)
	1496	Blank = Stay reported, no abstract form received
		Note: See medical coding specifications.
257-261		Second Diagnosis E Code
	87	ICD-9-CM Code
	496	99997 = Inapplicable (only one diagnosis coded)
	4822	Blank = Stay reported, no abstract form received or second diagnosis does not require E code
		Note: See medical coding specifications.
262-267		Third Diagnosis
	2794	ICD-9-CM Code
	1115	999997 = Inapplicable (less than three diagnoses coded)
	1496	Blank = Stay reported, no abstract form received
		Note: See medical coding specifications.
268-272		Third Diagnosis E Code
	56	ICD-9-CM Code
	1115	99997 = Inapplicable (less than three diagnoses coded)
	4234	Blank = Stay reported, no abstract form received or third diagnosis does not require E code
		Note: See medical coding specifications.
273-278		Fourth Diagnosis
	2109	ICD-9-CM Code
	1800	999997 = Inapplicable (less than four diagnoses coded)
	1496	Blank = Stay reported, no abstract form received
		Note: See medical coding specifications.

Tape Position	Frequencies	Variable Description and Codes
279-283		Fourth Diagnosis E Code
	44	ICD-9-CM Code
	1800	99997 = Inapplicable (less than four diagnoses coded
	3561	Blank = Stay reported, no abstract form received or fourth diagnosis does not require E code
		Note: See medical coding specifications.
284-289		Fifth Diagnosis
	1458	ICD-9-CM Code
	2451	999997 = Inapplicable (less than five diagnoses coded)
	1496	Blank = Stay reported, no abstract form received
		Note: See medical coding specifications.
290-294		Fifth Diagnosis E Code
	24	ICD-9-CM Code
	2451	99997 = Inapplicable (less than five diagnoses coded)
	2930	Blank = Stay reported, no abstract form received or fifth diagnosis does not require E code
		Note: See medical coding specifications.
295-300		Sixth Diagnosis
	946	ICD-9-CM Code
	2963	999997 = Inapplicable (less than six diagnoses coded)
	1496	Blank = Stay reported, no abstract form received
		Note: See medical coding specifications.
301-305		Sixth Diagnosis E Code
	25	ICD-9-CM Code
	2963	99997 = Inapplicable (less than six diagnoses coded)
	2417	Blank = Stay reported, no abstract form received or sixth diagnosis does not require E code
		Note: See medical coding specifications.

Tape Position	Frequencies	Variable Description and Codes
306-311		Seventh Diagnosis
	602	ICD-9-CM Code
	3307	999997 = Inapplicable (less than seven diagnoses coded)
	1496	Blank = Stay reported, no abstract form received
		Note: See medical coding specifications.
312-316		Seventh Diagnosis E Code
	14	ICD-9-CM Code
	3307	99997 = Inapplicable (less than seven diagnoses coded)
	2084	Blank = Stay reported, no abstract form received or seventh diagnosis does not require E code
		Note: See medical coding specifications.
317-322		Eighth Diagnosis
	418	ICD-9-CM Code
	3491	999997 = Inapplicable (less than eight diagnoses coded)
	1496	Blank = Stay reported, no abstract form received
		Note: See medical coding specifications.
323-327		Eighth Diagnosis E Code
	13	ICD-9-CM Code
	3491	99997 = Inapplicable (less than eight diagnoses coded)
	1901	Blank = Stay reported, no abstract form received or eighth diagnosis does not require E code
		Note: See medical coding specifications.
328-333		Ninth Diagnosis
	265	ICD-9-CM Code
	3644	999997 = Inapplicable (less than nine diagnoses coded)
	1496	Blank = Stay reported, no abstract form received
		Note: See medical coding specifications.

Tape Position	Frequencies	Variable Description and Codes
334-338		Ninth Diagnosis E Code
	3	ICD-9-CM Code
	3644	99997 = Inapplicable (less than nine diagnoses coded)
	1758	Blank = Stay reported, no abstract form received or ninth diagnosis does not require E code
		Note: See medical coding specifications
339-344		Tenth Diagnosis
	160	ICD-9-CM Code
	3749	999997 = Inapplicable (less than ten diagnoses coded)
	1496	Blank = Stay reported, no abstract form received
		Note: See medical coding specifications.
345-349		Tenth Diagnosis E Code
	1	ICD-9-CM Code
	3749	99997 = Inapplicable (less than ten diagnoses coded)
	1655	Blank = Stay reported, no abstract form received or tenth diagnosis does not require E code
		Note: See medical coding specifications.

Tape Position	Frequencies	Variable Description and Codes
350-351		Number of Procedures
	3496	00-07 = Number of procedures
	413	97 = Inapplicable (facility is a nursing home)
	1496	Blank = Stay reported, no abstract form received
		Note: This variable identifies the total number of procedures coded on the facility abstract. The number of reported procedures from a hospital may exceed the maximum number of five coded on this data tape.
352-355		First Procedure
	1192	ICD-9-CM Code
	2717	9997 = Inapplicable (facility is a nursing home or no procedures coded)
	1496	Blank = Stay reported, no abstract form received
		Note: See medical coding specifications.
356-359		Second Procedure
	471	ICD-9-CM Code
	3438	9997 = Inapplicable (facility is a nursing home or only one procedure coded)
	1496	Blank = Stay reported, no abstract form received
		Note: See medical coding specifications.
360-363		Third Procedure
	129	ICD-9-CM Code
	3780	9997 = Inapplicable (facility is a nursing home or less than three procedures coded)
	1496	Blank = Stay reported, no abstract form received
		Note: See medical coding specifications.
364-367		Fourth Procedure
	32	ICD-9-CM Code
	3877	9997 = Inapplicable (facility is a nursing home or less than four procedures coded)
	1496	Blank = Stay reported, no abstract form received
		Note: See medical coding specifications.

Tape Position	Frequencies	Variable Description and Codes
368-371		Fifth Procedure
	11	ICD-9-CM Code
	3898	9997 = Inapplicable (facility is a nursing home or less than five procedures coded)
	1496	Blank = Stay reported, no abstract form received
		Note: See medical coding specifications.
(372-373)		Presence of Documents
372		Pathology Report
	168	1 = Required and present
	58	2 = Required and not present
	3270	6 = Not required
	413	7 = Inapplicable (facility is a nursing home)
	1496	Blank = Stay reported, no abstract form received
373		Third Day EKG Report
	128	1 = Required and present
	50	2 = Required and not present
	3318	6 = Not required
	413	7 = Inapplcable (facility is a nursing home)
	1496	Blank = Stay reported, no abstract form received
374-379	5405	Blank

Tape Position	Frequencies	Variable Description and Codes
		RELATED STAY CODES
		Note: Residents in nursing homes are often admitted to hospitals during the course of their stays in the nursing home. The related stay section of the record cross-links nursing home stays with interspersed hospital stays.
		In the case of nursing home records, this set of variables identifies hospital stays that occurred during the nursing home stay. Up to 10 related stays can be listed.
		In the case of hospital records, this set of variables identifies the nursing home stay within which the hospital stay occurred. Only one related stay is identified for hospital records.
		The Related Stay is identified by its Health Care Facility Stay ID Number (positions 29-33) of the record for that stay.
		An example of the usage of the related stay section is found in the introduction to this codebook.
(380-429)		ID Number(s) of Related Stay(s)
(380-384)		ID of First Related Stay
380		Survey Period Identifier
	283	2 = NHEFS 1986
	5122	Blank = No related stays
381-382		Facility Number
	283	01-06 = Hospital/nursing home number
	5122	Blank = No related stays
383-384		Stay Number Within Facility
	283	01-21 = Stay number
	5122	Blank = No related stays

Tape Position	Frequencies	Variable Description and Codes
(385-389)		ID of Second Related Stay
385		Survey Period Identifier
	38	2 = NHEFS 1986
	5367	Blank = No second related stay
386-387		Facility Number
	38	01-06 = Hospital/nursing home number
	5367	Blank = No second related stay
388-389		Stay Number Within Facility
	38	01-09 = Stay number
	5367	Blank = No second related stay
(390-394)		ID of Third Related Stay
390		Survey Period Identifier
	13	2 = NHEFS 1986
	5392	Blank = No third related stay
391-392		Facility Number
	13	01-05 = Hospital/nursing home number
	5392	Blank = No third related stay
393-394		Stay Number Within Facility
	13	01-08 = Stay number
	5392	Blank = No third related stay

Tape Position	Frequencies	Variable Description and Codes
(395-399)		ID of Fourth Related Stay
395		Survey Period Identifier
	6	2 = NHEFS 1986
	5399	Blank = No fourth related stay
396-397		Facility Number
	6	01-03 = Hospital/nursing home number
	5399	Blank = No fourth related stay
398-399		Stay Number Within Facility
	6	02-06 = Stay number
	5399	Blank = No fourth related stay
(400-404)		ID of Fifth Related Stay
400		Survey Period Identifier
	2	2 = NHEFS 1986
	5403	Blank = No fifth related stay
401-402		Facility Number
	2	03 = Hospital/nursing home number
	5403	Blank = No fifth related stay
403-404		Stay Number Within Facility
	2	04-08 = Stay number
	5403	Blank = No fifth related stay

Tape Position	Frequencies	Variable Description and Codes
(405-409)		ID of Sixth Related Stay
405		Survey Period Identifier
	2	2 = NHEFS 1986
	5403	Blank = No sixth related stay
406-407		Facility Number
	2	03 = Hospital/nursing home number
	5403	Blank = No sixth related stay
408-409		Stay Number Within Facility
	2	01-10 = Stay number
	5403	Blank = No sixth related stay
(410-414)		ID of Seventh Related Stay
410		Survey Period Identifier
	1	2 = NHEFS 1986
	5404	Blank = No seventh related stay
411-412		Facility Number
	1	03 = Hospital/nursing home number
	5404	Blank = No seventh related stay
413-414		Stay Number Within Facility
	1	11 = Stay number
	5404	Blank = No seventh related stay

Tape Position	Frequencies	Variable Description and Codes
(415-419)		ID of Eighth Related Stay
415		Survey Period Identifier
	1	2 = NHEFS 1986
	5404	Blank = No eighth related stay
416-417		Facility Number
	1	03 = Hospital/nursing home number
	5404	Blank = No eighth related stay
418-419		Stay Number Within Facility
	1	12 = Stay number
	5404	Blank = No eighth related stay
(420-424)		ID of Ninth Related Stay
420		Survey Period Identifier
	1	2 = NHEFS 1986
	5404	Blank = No ninth related stay
421-422		Facility Number
	1	03 = Hospital/nursing home number
	5404	Blank = No ninth related stay
423-424		Stay Number Within Facility
	1	13 = Stay number
	5404	Blank = No ninth related stay

Tape Position	Frequencies	Variable Description and Codes
(425-429)		ID of Tenth Related Stay
425		Survey Period Identifier
	1	2 = NHEFS 1986
	5404	Blank = No tenth related stay
426-427		Facility Number
	1	03 = Hospital/nursing home number
	5404	Blank = No tenth related stay
428-429		Stay Number Within Facility
	1	01 = Stay number
	5404	Blank = No tenth related stay

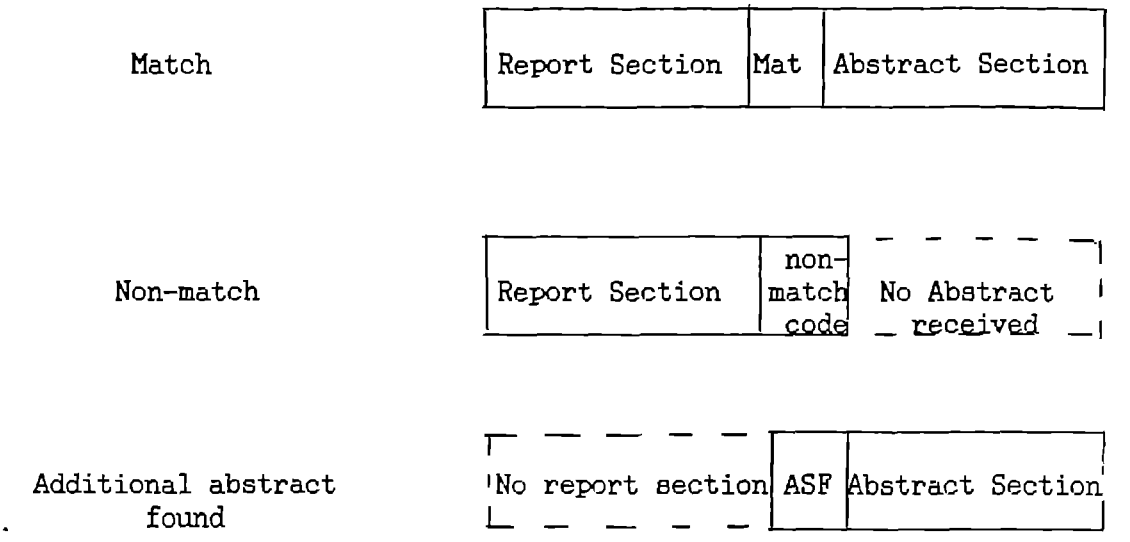
Figure 1

NHANES I Epidemiologic Followup Study (NHEFS)
Health care facility record layout

Report Section	Record Status Section	Abstract Section	Related Stay section
. Facility identifiers . Reported date of admission . Reported cause of admission . Source of report	Match or reason for non-match	. Actual dates admission and discharge . ICD-9-CM diagnoses . Discharge status from hospitals and nursing homes	. Codes assigned by NCHS to identify stays contained within other stays

Figure 2

NHANES I Epidemiologic Followup Study (NHEFS)
Examples of matching process and record status codes



APPENDIX A

RECORD STATUS CODES

Code	Frequency	Description
ANO -	28	"Authorization Not Obtained." This code indicates that the subject or proxy refused to sign the Medical Authorization Form (MAF). These stays are not requested from the reported facilities.
ASF -	1063	"Additional Stay Found." This code was assigned when a received stay could not be matched to a reported stay and the received stay is in-scope. This code was also assigned to in-scope stays that were received as a result of an inquiry generated by a type D report (Position 199). The type D report was deleted from the final file.
CRM -	124	"Cross-Referenced Match." This code indicates a stay that was begun prior to the NHEFS 1986 survey period and continues into the 1986 survey period. For this type of stay, the abstract is brought forward from the previous wave. The discharge date and discharge status information are the only positions that are updated. The admission date is prior to the 1982-84 interview because this is a continuing stay. Thus, it appears but is not out-of-scope for 1986.
CRX -	8	"Cross-Referenced Non-Match." A code assigned by NCHS staff to close out a stay that was begun in a previous wave and was reported to have continued into the 1986 Survey period, yet no in-scope stay was received for the 1986 survey period.
FNC -	90	"Facility Never Contacted." This code was assigned when the facility was not contacted for the following reasons: the respondent could not recall the name of the facility; the facility was closed; the facility could not be located; and facility located outside the United States.
MAT -	2722	"Record Match." This code was assigned when a received stay matches a reported stay. This code was assigned to in-scope and type C (position 199) reports, but never to type D reports. In-scope stays that were received as the result of a type D report were assigned an ASF code. See ASF.

Code	Frequency	Description
ONR -	276	"Other Non-Response." This code is assigned to a stay when no response for the stay request has been received from the facility by the end of the study period.
REF -	189	"Refused." This code is assigned after a facility refuses to send back the stay record requested. It is record, not subject specific. For example, a facility may send some records for a subject but refused to send others.
XNH -	212	"Subject Never at Facility." This code is used when the facility indicates that the patient was never admitted to that facility.
XNS -	686	"Other - No Stay Found." This code is assigned when a facility responds it is unable to send records because an in-scope stay was not found at this facility, or when the facility returns the request form without records and provides no explanation for the failure to provide records.
XRD -	7	"Record Destroyed or No Longer Available." This code is assigned if the facility attempts to locate the record and states it no longer exists, i.e., destroyed, lost.

NOTE: Additional information concerning the assignment of the record status codes is found in the introduction to this codebook.

APPENDIX B

NUMERIC CODES FOR REPORTED CONDITIONS ON HEALTH CARE FACILITY STAY RECORDS

Code for Reported Condition	Condition Description
01	Arthritis
02	Gout
03	Heart attack
04	Another heart condition besides heart attack
05	Coronary bypass surgery
06	Pacemaker repair, insertion and/or replacement
07	T.I.A., small stroke
08	Stroke or CVA (cerebrovascular accident)
09	Diabetes
10	High Blood Pressure
11	Cancer and/or cancer treatment
12	Fractured hip
13	Another type of bone fracture besides a hip fracture
14	Pneumonia or flu
15	Surgery
16	Don't know
18	Tests/observation/x-rays/physical exam

19	Digestive/endocrine condition
20	Respiratory condition (other than influenza and pneumonia)
21	Infection
22	Kidney/bladder/urinary condition
23	Debility/pain
24	Male reproductive condition
25	Musculoskeletal problem or injury other than a fracture
26	Circulatory condition
27	Female reproductive condition
28	Mental illness
29	Neurologic condition
30	Nutritional condition or dehydration
31	Bleeding or blood disorder
32	Skin condition
33	Condition not elsewhere coded
34	Admission to a facility other than an acute care hospital
35	In a facility at time of death
36	Cataracts
37	A fall

Background:

During the process of completing the Hospital and Health Care Facility (HHCF) chart respondents were asked to describe the conditions that led to their facility stays and this information is included as a text field on the stay record. The text portion of the reported condition contains the

respondent's own words if possible or a summary of the respondent's description which was edited to fit into the 30 positions. A numeric code was also assigned to each description. This was done so that users would not have to deal with alphabetic description fields when investigating reasons for facility stays. Space is allotted on the report section of the facility stay record for recording of up to four reasons for the hospitalization or nursing home stay (positions 63-198 of the HCFS record).

Note that code "17" is not included in the coding structure for the 1986 file. This code was designated for use when the reported condition is "not ascertained", a situation which never arose during the construction of the 1986 HCFS file.

Reported conditions and their associated codes can be divided into six types depending on where in the interview the stay was reported and the amount of information obtained: specific conditions included in Section B or F of the interview (Type A); conditions which are well-defined but for which no question exists in Section B of the interview (Type B); unknown conditions (Type C); conditions about which there is no specific question in Section B but for which sufficient information is available to attribute them to disorders of a major body system (Type D); conditions that are broadly defined and/or cannot be attributed to a single major body system (Type E); and conditions that cannot be classified into any of the above categories (Type F). Each condition type, the associated codes and the rules for assigning the reported conditions to the categories of the coding structure are described in detail below.

Type A - Conditions about which the respondent was asked in section B or F of the interview. For example, if a respondent answered "yes" to question B-13a ("Were you hospitalized for your arthritis?"), then a condition code of "01" and a text field containing "arthritis" would be included on the facility stay record. Type A conditions are:

01 Arthritis (B-13a)
02 Gout (B-13a)

03 Heart attack (B-19a)
04 Other heart conditions (B-19b)
05 Coronary bypass surgery (B-20b)
06 Procedures for pacemakers (B-20d)
07 T.I.A., small stroke (B-26)
08 Stroke (B-32)
09 Diabetes (B-39)
10 High blood pressure (B-45)
11 Cancer (B-48 or B-51)
12 Fractured hip (B-57)
13 Bone fracture other than hip (B-61)
14 Pneumonia or influenza (B-62)
15 Surgery (B-63)
34 Care in non-acute care facility (B-69)
35 In a facility at death (B-80 proxy questionnaire)
36 Cataracts (F-5) Note: This question was located in Section F.

Complete agreement between responses to the questions in section B and F and Type A condition codes on the facility stay file should not be expected. There are several reasons for a lack of agreement between these two data sources.

First, the respondent may report a facility stay for a given condition in the interview and yet no facility stay record containing the condition may appear on the HCFS file. This would result if: (1) it was determined that the hospitalization did not last overnight causing the stay to be deleted from the HCFS file; or (2) the reported stay was found to be "out-of-scope". (See the introduction to this codebook and the Plan and Operation for definitions of out-of-scope stays.)

Second, data may be inconsistent between the interview and the HCFS file if the respondent remembered and reported a condition after responding to the corresponding question in Section B or F of the interview. This tended to occur at the time the interviewer was recording information on the HHCF

chart. For example, while recording information on a stay for high blood pressure, the respondent may add that he/she was also hospitalized at that time for a heart condition. The respondent may not have reported the hospitalization when asked about heart conditions in question B-19a and the Section B information may not have been updated to reflect this additional condition. However, heart condition would appear on the HCFS file.

Type B - Conditions which do not have a corresponding question in Section B of the interview but for which sufficient descriptive information is available to allow them to be easily coded:

18 Tests and observation
37 A fall

Type C - Unknown conditions:

16 Don't know

Type D - Conditions for which there is not a specific question in Section B of the interview but which can be attributed to disorders of a major body system:

19 The digestive/endocrine system
20 The respiratory system (excluding flu or pneumonia)
22 Kidney, bladder or urinary problem
24 The male reproductive system
25 The musculoskeletal system
26 The circulatory system (except strokes)
27 The female reproductive system
29 Neurologic disorders
31 Blood disorder/bleeding
32 Skin problem

Type E - Conditions which are broadly defined or are attributed to problems of more than one major body system:

21 Infections
23 Debility and pain
28 Mental illness
30 Nutrition and dehydration

Type F - All conditions that cannot be assigned to one of the above codes:

33 Other conditions

Additional information on reasons for a facility stay is available in the abstract section of the record (positions 205-379) if an abstract was received from the facility. In general information from the abstract is considered a more accurate determination of the conditions associated with the stay than are the reported conditions. The condition codes in the report section of stay records do provide useful information in the absence of a medical abstract. Both flexibility and caution should be exercised when selecting stays based on these codes. In order to help the analyst use these condition codes effectively, a description of the code assignment procedure along with an example is provided.

Rules for Assignment:

The numeric codes were assigned to the respondent's non-technical descriptions by trained medical coders. In order to minimize variation among the coders assigning these codes, precedence rules were defined. Generally, a condition was coded to the most specific category in which it could be placed. The assignment rules are described below in priority order, e.g. Rule 2 was used only if Rule 1 did not apply and so forth.

Rule 1: If a condition was one about which there was a specific question in Section B or F of the interview, the code appropriate for that question was assigned. (Type A conditions)

Rule 2: If the textual description could be coded to a narrowly defined condition not referenced in Section B or to the unknown category, the appropriate Type B or Type C code was assigned.

Rule 3: Conditions that could not be coded to a specific question but could be coded to a major body system were assigned the appropriate Type D code.

Rule 4: General descriptions, symptoms and conditions not coded by rules 1 through 3 were coded at the discretion of the medical coder, again with emphasis on as much specificity as possible. For example, "HEADACHES, BRAIN TUMOR" would be coded to "29 - Neurologic disorders", not to "23 - Debility and pain". (Type D or Type E conditions).

Rule 5: Everything that could not be assigned a code after applying the above rules was coded to "33 - Other conditions". (Type F conditions).

Considerations for the Data User:

These precedence rules were used for all three followups. However, since the questionnaires used in each followup differed slightly, the assignment of codes also differed. Questions about specific conditions were not always included in all three questionnaires. For example, Question B-63 in the 1986 interview asked about overnight stays for surgery making condition code "15 - Surgery" a Type A condition in the 1986 followup. There is no similar question in the 1982-84 or 1987 interview, therefore, surgery is a Type E condition in the 1982-84 and 1987 files. In other cases, groups of conditions are combined into one question on one questionnaire but asked separately on another. For example, T.I.A.'s and other strokes are combined

in one question in 1987. Since it was not possible to separate reports of T.I.A.'s from other strokes in the 1987 file, there are no conditions assigned to codes "07" in this file. There are reports assigned to "07" in the 1982-84 and 1986 files since separate T.I.A. and stroke questions were asked. An attempt was made to include as much detail in the code as possible. The questionnaire in the 1982-84 followup included enough detail to separate specific digestive conditions, such as colitis and gallbladder problems, from the general category of digestive disorders. Therefore, the 1982-84 HCFS data file, includes sub-codes under "19 - Digestive/endocrine system". Thus, analysts interested in colitis can identify cases from the reported condition section of the 1982-84 file but not from the 1986 or 1987 files. However, all files can be used to identify cases of the digestive/endocrine system in general. The analyst should refer to the questionnaire and the condition coding structure in the HCFS data tape codebook for the period of interest in order to obtain the maximal amount of information available.

In using the condition codes to select records of interest, two characteristics of the coding structure should be considered: (1) the condition of interest may be found under more than one numeric code and (2) each numeric code covers more than one condition.

To illustrate the first situation, consider a search for all reported stays with breast biopsies. A respondent might report a breast biopsy in response to the question relating to cancer and cancer treatment. In this case the textual field would contain a description such as "BIOPSY OF RIGHT BREAST" and the numeric code assigned would be 11 (indicating a response to the cancer stay question). Breast biopsies could also be reported in response to the surgery question in the 1986 followup and be assigned the code of 15. If the biopsy was reported in response to question B-83 on the 1987 questionnaire, "Have you stayed in a hospital for any other reason...?", it would be assigned to code 18 - Tests and observation". To identify breast biopsy cases it would be necessary to search the alphabetic fields for codes 11, 15 and 18. In addition, the reports of breast biopsies include several

wording variations, for example, "BREAST BIOPSY", "BIOPSY OF BREAST". The analyst needs to investigate all possible wordings.

To illustrate the second situation, consider code 18 - "Tests and observation". Over 250 different verbal descriptions have been coded to this category including a variety of radiological procedures, surgeries and physical examinations. Selecting just on code 18 will result in a wide variety of procedures. Those of a specific interest need to be identified by the textual description.

Analysts who wish to use these reports, should print and review all the reported condition codes and alphabetic descriptions from the Health Care Facility Stay data files. Such a review will aid in (1) finding all the numeric condition codes under which the condition of interest will be found and (2) insuring that, within any numeric condition code, only the reports of interest will be selected.

Finally, the condition codes in the report section should be used in conjunction with the information in the abstract section if it is available. Returned abstracts were matched to reports if one of the reported conditions matched one of the discharge diagnoses on the abstract. Other conditions reported for the same stay may or may not be confirmed in the matched medical abstract. If the condition of interest is not indicated as a discharge diagnosis on the medical record, the analyst may not want to accept the reported condition as a reason for the stay. Similarly, conditions may be listed as discharge diagnoses that do not appear on the report section. See the introduction to this codebook for a description of the matching rules.