Public Use
Data Tape
Documentation

NHANES I Epidemiologic Followup Study, 1987

Health Care Facility Stay

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

CDC
CENTERS FOR DISEASE CONTROL

Public Use Data Tape Documentation

NHANES I Epidemiologic Followup Study, 1987
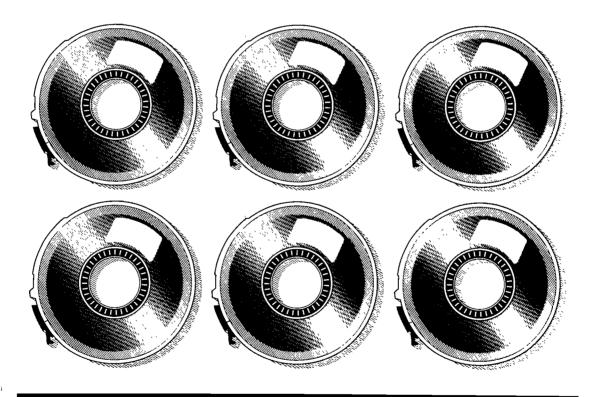**Health Care Facility Stay**

ACKNOWLEDGMENTS

CONTENTS

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 1987 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

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 1987 NHEFS data tapes, or 2) between the 1987 NHEFS data tapes and the data tapes of the original National Health and Nutrition Examination Survey (NHANES I) and other NHEFS followup waves.

I. NHEFS BACKGROUND INFORMATION

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 completed. 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). The second wave of data collection, 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, the 1987 NHEFS, was conducted for the entire non-deceased NHEFS cohort (n=11,750). The fourth wave of data collection, the 1992 NHEFS, includes the entire non-deceased NHEFS cohort (n=11,195).

NHANES I collected data from a national probability sample of the United States civilian noninstitutionalized 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 the baseline and the development of specific health conditions. It originated as a joint project between the National Center for Health Statistics (NCHS) and the National Institute on Aging with collaboration from components of the National Institutes of Health and other Public Health Service agencies. The 14,407 participants who were 25 to 74 years of age when they were examined in NHANES I (1971-75) were 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, <u>Vital and Health Statistics</u>, 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 second wave of NHEFS, the 1986 NHEFS, was conducted to assess changes in the health and functional status of the oldest members of the NHEFS cohort since the last contact period. It included 5,677 subjects who were 55 years or older at their NHANES I examination (almost 40 percent of the entire NHEFS cohort). Data collection was restricted to 3,980 subjects aged 55 years or

older at NHANES I who were not known to be deceased at the time of the 1982-84 NHEFS, regardless of their tracing or interview status in 1982-84. The remaining 1,697 subjects who were deceased at the time of the 1982-84 NHEFS were excluded from additional data collection in the 1986 NHEFS. Detailed information on the design, content, and operation of the 1986 NHEFS may be found in the Plan and Operation of the NHANES I Epidemiologic Followup Study 1986, <u>Vital and Health Statistics,</u> Series 1, No. 25.

The 1987 NHEFS, the third wave of data collection was designed to collect information on changes in the health and functional status of the NHEFS cohort since the last contact period. Tracing and data collection were conducted during this followup survey only for the members of the NHEFS cohort who had not been identified as deceased in 1982-84 or 1986 (n=11,750) regardless of their previous tracing or interview status. The 2,657 previously deceased subjects were excluded from additional data collection in the 1987 NHEFS.

The design and data collection procedures adopted in the 1987 NHEFS were very similar to the ones developed in the previous surveys: subjects were traced; subject and proxy interviews were conducted; and, health care facility abstracts and death certificates were collected. All subjects whose vital status was not obtained through tracing procedures were considered lost-to-followup in the 1987 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 <u>had</u> 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 surviving subjects as well as to identify a knowledgeable proxy respondent for deceased subjects. Respondents 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 1987 survey are available.

A major difference between the 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 and 1987 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 or the 1987 NHEFS.

The 1987 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, certain questions on pregnancy and menstrual history in the 1987 interview were programmed to be skipped automatically if the subject was male or if the female subject was interviewed previously and was 45 years of age or older at the time of that interview. Edit and logic checks are incorporated into the data collection system itself, thus improving the quality of the data.

As of January 25, 1988, the end of the 1987 NHEFS data collection period, 11,018 (93.8 percent) of the 11,750 members of the 1987 NHEFS cohort had been successfully traced. Interviews were conducted for 9,998 subjects (90.7 percent of those successfully traced). In addition, 7,361 facility stay records were collected for 3,472 subjects using information obtained from the interview, death certificate, or some other source. Death certificates were obtained for 524 (94.4 percent) of the 555 subjects who were known to have died since last contact. Detailed information on the design, content, and operation of the 1987 NHEFS may be found in the Plan and Operation of the NHANES I Epidemiologic Followup Study 1987, Vital and Health Statistics, Series 1, No. 27.

The data collected from the 1987 NHEFS are stored on four separate tapes:

1) Vital and Tracing Status tape -- contains summary information about the status of the NHEFS cohort,

2) Interview tape -- contains the data collected from the 1987 NHEFS subject and proxy interviews,

3) Mortality Data tape -- contains data abstracted from the death certificates from all three NHEFS surveys,

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

1987 NHEFS HEALTH CARE FACILITY STAY DATA TAPE CHARACTERISTICS

Title: 1987 NHEFS Health Care Facility Stay Data Tape

Data Set Name: NHEFS3.FACILPB

Record Length: 429

Blocksize: 31746

Number of Records: 7,361

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
                                Presidential Building, Room 1080
                                6525 Belcrest Road
                                Hyattsville, Maryland 20782

1987 NHEFS HEALTH CARE FACILITY STAY INTRODUCTION

The 1987 NHEFS Health Care Facility Stay (HCFS) file contains information on all overnight health care facility stays for members of the 1987 Followup cohort. The 1987 Followup cohort consisted of the 11,750 subjects who were between 25 and 74 years old at their NHANES I examination and were not known to be deceased at the time of the 1986 NHEFS. Followup cohort members who have either an interview or a death certificate on the 1987 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 1987 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 1987 NHEFS Health Care Facility Stay file was constructed. The procedures for obtaining reports and collecting abstracts are described briefly, below.

The 1987 NHEFS Health Care Facility Stay file contains all information on overnight stays that are in-scope for the 1987 NHEFS period. The in-scope period depends upon the timing of the subject's last interview and his/her vital status. For subjects who have not been interviewed since the NHANES I exam, the 1987 in-scope period is from the date of the NHANES I exam to the date of the 1987 interview for surviving subjects and from the exam date to the date of death for deceased subjects. For subjects who have had at least one followup interview prior to the 1987 followup, the in-scope period is from the date of the last interview (either 1982-84 or 1986) to the date of the 1987 interview for surviving subjects and from the date of the last interview 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 1987 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 of the interview. Generally, respondents were asked
to report all overnight facility stays since 1985 if the subject was last
interviewed in the 1986 NHEFS, 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 1987 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

11

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 1987 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 assigned. An abstract that did not match any report but was in-scope for the 1987 survey period was assigned the record status code of ASF (additional stay found). A record status code of CRM (cross-referenced match) was assigned to a stay that was the continuation of a stay begun prior to the 1987 NHEFS survey period. If no matching abstract was found, 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. The other three sections were added when the 1986 version of the Health Care Facility Stay file was designed. A revised 1982-84 HCFS data tape which is structured in the same format as the 1986 and 1987 HCFS tapes 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

12

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.

In some cases requests were made to facilities for information about stays with reported admission dates that preceded the date of the NHANES I exam (i.e., were out-of-scope). This was done to maximize the collection of reports of hospital or nursing home stays. Reports of stays with a reported date of admission more than one year prior to the exam were retained on the file when they represented the only mention of visits to a specific health care facility for a given subject. These were flagged with a Type D in Position 199. All stays with reported dates within the year immediately preceding the exam were kept and flagged with a Type C in position 199.

After the receipt of information from the health care facility, it was necessary to remove stays from the tracking system that had been out-of-scope and to incorporate information on in-scope stays that was generated from the "out-of-scope" reports. If an in-scope abstract was received from a facility named on a Type D report, the in-scope stay was added to the file with a record status code of ASF and the Type D report was deleted from the file. The Type D report was also deleted from the file if the facility responded to the Type D request, but sent no in-scope abstracts. In this case it was presumed that the respondent had correctly reported the date as out-of-scope. In 12 cases the Type D reports remain on the final version of the file. This occurred because it was impossible to contact the facility. These records for unconfirmed reports of out-of-scope stays can be eliminated from analyses at the analysts' discretion. In the case of Type C reports, if an in-scope abstract was returned which matched the Type C report, the report was assigned a record status code of MAT (n=142). (Recall that matching rules permitted an admission date of up to one year before or after the reported date of

13

admission.) If the facility responded but no in-scope abstract was received, the Type C report was removed from the file. Again it was assumed that the correct date had been reported and the stay was truly out-of-scope. There are 15 Type C reports that remain on the file. These reports were given by respondents who did not grant permission to obtain abstracts or they involved facilities that could not be contacted, refused to participate or did not respond. These unconfirmed reports of out-of-scope stays are identified by the non-match status in positions 60-62 and a Type C flag in position 199.

The final section of the record contains related stay codes (positions 380-429). These related stay codes 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 chronological 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: Chronological 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
30201	N. Home	03/01/85	04/30/85	30101	30102
30101	Hosp	04/01/85	04/08/85	30201	
30102	Hosp	04/22/85	04/25/85	30201	

MEDICAL CODING SPECIFICATIONS

Medical coding for the NHEFS 1987 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 by trained medical coders. The coders assigned the _principal_ diagnosis as 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.

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 check mark, 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 by trained medical coders from the information 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:

<u>Diagnostic codes</u>--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

Tape Position	Frequencies	Variable Description and Codes
		SUBJECT INFORMATION
1-5	7361	NHANES I Sample Sequence Number
6-7		Record Count
	7361	01-26 = 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	7361	Blank

Tape Position	Frequencies	Variable Description and Codes
(29-59 63-204)		**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 30102 refers to a facility stay reported during the NHEFS 1987 wave (3) in the first facility reported for that subject (01) but the second admission to that facility (02).
29		Survey Period Identifier
	7361	3 = NHEFS 1987 Note: This variable identifies the survey period in which the stay data were collected. A facility stay reported during the NHEFS 1987 wave will be identified with a code number "3". All records on this file are coded "3" in this field.

Tape Position	Frequencies	Variable Description and Codes
30-31		Facility Number
	7361	01-11 = 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.
32-33		Stay Number Within Facility
	7349	01-23 = Stay number
	12	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
	6845	01 = Hospital
	405	02 = Nursing home
	111	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	7361	Blank

24

Tape Position	Frequencies	Variable Description and Codes

| (47-54) | | <u>Reported Admission Date/Range</u> |

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   <u>Reported Month of Admission</u>

	4457	01-12 = Month of admission
	1321	98 = Don't know
	80	99 = Not ascertained
	1503	Blank = Type D (position 199), or record status code ASF (positions 60-62), or source code 1 or 3 (position 200) and record status code (positions 60-62) not a cross-referenced stay (CRM, CRX)

49-50   <u>Reported Day of Admission</u>

	2572	01-31 = Day of admission
	3201	98 = Don't know
	85	99 = Not ascertained
	1503	Blank = Type D (position 199), or record status code ASF (positions 60-62), or 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**
	5465	70-87 = Year of admission or beginning year of range (1970-1987)
	375	98 = Don't know
	18	99 = Not ascertained
	1503	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**
	183	73-87 = Ending year of range (1973-1987)
	7178	Blank = No range given for reported year of admission, or 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)

Tape Position	Frequencies	Variable Description and Codes
(55-59)		**ID Number of Cross Referenced Facility Status Stay**

Note: The ID number on the 1982-84 or 1986 NHEFS Facility Tape (positions 29-33) is used to reference stays in a hospital or nursing home that began during the 1982-84 or 1986 NHEFS period and which continue into the 1987 survey period. This variable is coded only for records with a CRM or CRX in positions 60-62 on the 1987 file. |
55		**Survey Period Identifier of Cross-referenced Facility Stay**
	23	1 = NHEFS 1982-84
	181	2 = NHEFS 1986
	7157	Blank = Stay not cross-referenced
56-57		**Facility Number of Cross-referenced Stay**
	204	01-04 = Stay number
	7157	Blank = Stay not cross-referenced
58-59		**Stay Number Within Facility of Cross-reference Stay**
	204	00-14 = Stay number
	7157	Blank = Stay not cross-referenced
(60-62)		**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. |
| | 7361 | 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

63-66   Condition Code

        5717   01-37 = Condition code (See Appendix B)
        1644   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.

67-96   Condition Text

        5717   Description of reason for facility stay
        1644   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

97-100   Condition Code

                1096   01-37 = Condition code (See Appendix B)
                6265   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

101-130   Condition Text

                1096   Description of reason for facility stay
                6265   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

131-134   Condition Code

                217   01-37 = Condition code (See Appendix B)
                7144   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

135-164   Condition Text

                217   Description of reason for facility stay
                7144   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

165-168                        Condition Code

              30               01-37 = Condition code (See Appendix B)
              7331             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

169-198                        Condition Text

              30               Description of reason for facility stay
              7331             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

Tape
Position Frequencies Variable Description and Codes

199   Type of Stay Flag

           157   C =   A reported stay with admission date
                           up to one year prior to the date of
                           last interview (i.e. the NHEFS 1982-
                           84 or 1986 if interviewed at either
                           followup or date of NHANES I
                           Examination if not interviewed since
                           exam.

           12   D =   A reported stay with admission date
                           more than one year prior to date of
                           last interview and the facility had
                           not been contacted previously. 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 12 type D reports
                           remaining on the final file are all
                           non-responses from the facility and
                           thus were not able to be resolved.

     7192   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 1987
                           interview period. Reported dates of
                           admission of don't know (989898) or
                           not ascertained (999999) in positions
                           47-52 were considered in-scope.

Tape Position	Frequencies	Variable Description and Codes
200		**Source of Report of Stay that Initiated Request for Abstract**
	46	1 = Information from death certificate
	126	2 = Information from hospital abstract report
	49	3 = Information from other source
	5728	4 = Information from NHEFS 1987 interview
	1412	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.
201-204	7361	**Blank**

(205-379)   **ABSTRACT DATA**

Note: The abstract data portion of the record (positions 205-379) 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=1597).

205-206		**Abstract Number**
	5764	01-26 = Number of abstract
	1597	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**
	7361	00-26 = 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.

```
Tape
Position     Frequencies     Variable Description and Codes


209                          Facility Record Type

             5431               1 = Hospital
              333               2 = Nursing home
             1597            Blank = Stay reported, no abstract form
                                     received


(210-215)                    Date of Admission

210-211                      Month of Admission

             5764            01-12 = Month of admission
             1597            Blank = Stay reported, no abstract form
                                     received


212-213                      Day of Admission

             5764            01-31 = Day of admission
             1597            Blank = Stay reported, no abstract form
                                     received


214-215                      Year of Admission

             5764            71-87 = Year of admission (1971-1987)
             1597            Blank = Stay reported, no abstract form
                                     received
```

Tape Position	Frequencies	Variable Description and Codes
(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 10-31-86 to 12-22-86. The subject was readmitted to the same nursing home 1-3-87 and stayed until his death 3-5-87. No information is available for 12-22-86 to 1-3-87. These 2 stays would appear on the file as 1 stay from 10-31-86 to 3-5-87. 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 collapsed as described above and a code was entered in the related stay section (see positions 380-429).

216-217		Month of Discharge
	5565	01-12 = Month of discharge
	199	97 = Inapplicable (still at facility on date of 1987 interview)
	1597	Blank = Stay reported, no abstract form received
218-219		Day of Discharge
	5565	01-31 = Day of discharge
	199	97 = Inapplicable (still at facility on date of 1987 interview)
	1597	Blank = Stay reported, no abstract form received
220-221		Year of Discharge
	5565	72-87 = Year of discharge (1972-1987)
	199	97 = Inapplicable (still at facility on date of 1987 interview)
	1597	Blank = Stay reported, no abstract form received

Tape Position	Frequencies	Variable Description and Codes
222-225		Length of Facility Stay
	17	0000 = Died on day of admission
	5548	0001-2564 = Total number of days in facility
	199	9997 = Inapplicable (still at facility on date of 1987 interview)
	1597	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.

Tape Position	Frequencies	Variable Description and Codes
226		Was the Patient in Cardiac Intensive Care Unit?
	485	1 = Yes
	4575	2 = No
	333	7 = Inapplicable (facility is a nursing home)
	371	9 = Not ascertained
	1597	Blank = Stay reported, no abstract form received
227-229		Number of Days in Cardiac Intensive Care Unit
	445	000-070 = Number of days
	5279	997 = Inapplicable (position 226 = 2,7,9)
	40	999 = Not ascertained
	1597	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.

35

Tape Position	Frequencies	Variable Description and Codes
230		Was the Patient In Other Intensive Care Unit?
	381	1 = Yes
	4359	2 = No
	333	7 = Inapplicable (facility is a nursing home)
	691	9 = Not ascertained
	1597	Blank = Stay reported, no abstract form received
231-233		Number of Days in Other Intensive Care Unit
	364	000-066 = Number of days
	5383	997 = Inapplicable (Position 230 = 2,7,9)
	17	999 = Not ascertained
	1597	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.

Tape Position	Frequencies	Variable Description and Codes
234		Patient Admitted to Nursing Home From:
	113	1 = Private residence
	160	2 = Acute care hospital
	12	3 = Chronic disease hospital
	46	4 = Other nursing home
	5431	7 = Inapplicable (facility is a hospital)
	2	9 = Not ascertained
	1597	Blank = Stay reported, no abstract form received

Tape Position	Frequencies	Variable Description and Codes
235		<u>Disposition of Hospital Patient</u>
	4623	1 = Routine discharge/discharged home
	27	2 = Left against medical advice
	427	3 = Discharged/transferred to another facility or organization
	119	4 = Discharged/referred to organized home care service
	212	5 = Died
	12	6 = Not discharged/still in hospital on the date of 1987 interview
	333	7 = Inapplicable (facility is a nursing home)
	11	9 = Subject discharged, disposition not ascertained
	1597	Blank = Stay reported, no abstract form received
236		<u>Disposition of Nursing Home Patient</u>
	187	1 = Not discharged/still in a nursing home on date of 1987 interview
	16	2 = Discharged to private residence/referral to organized home care services
	72	3 = Died
	26	4 = Discharged to private residence/no referral
	32	5 = Transferred to another facility
	5431	7 = Inapplicable (facility is a hospital)
	1597	Blank = Stay reported, no abstract form received
237		<u>Transferred to Another Health Care Facility</u>
	22	1 = Acute care hospital
	6	2 = Other nursing home
	3	3 = Chronic disease hospital
	1	4 = Other
	5732	7 = Inapplicable (Position 236 = 1,2,3,4 or 7)
	1597	Blank = Stay reported, no abstract form received

37

Tape Position	Frequencies	Variable Description and Codes
238-239		<u>Number of Diagnoses</u>
	5763	01-22 = Number of diagnoses
	1	99 = Not ascertained
	1597	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		<u>Principal Diagnosis</u>
	5763	ICD-9-CM Code
	1	999999= Not ascertained
	1597	Blank = Stay reported, no abstract form received

Note: See medical coding specifications.

246-250		<u>Principal Diagnosis E Code</u>
	463	ICD-9-CM Code
	6898	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

              4577             ICD-9-CM Code
              1187             999997 = Inapplicable (only one diagnosis
                                        coded)
              1597              Blank = Stay reported, no abstract form
                                        received

                               Note:   See medical coding specifications.


257-261                        Second Diagnosis E Code

               131             ICD-9-CM Code
              1187             99997 = Inapplicable (only one diagnosis
                                       coded)
              6043             Blank = Stay reported, no abstract form
                                       received or second diagnosis does not
                                       require E code

                               Note:   See medical coding specifications.


262-267                        Third Diagnosis

              3374             ICD-9-CM Code
              2390             999997 = Inapplicable (less than three
                                        diagnoses coded)
              1597              Blank = Stay reported, no abstract form
                                        received

                               Note:   See medical coding specifications.


268-272                        Third Diagnosis E Code

                88             ICD-9-CM Code
              2390             99997 = Inapplicable (less than three
                                       diagnoses coded)
              4883             Blank = Stay reported, no abstract form
                                       received or third diagnosis does not
                                       require E code

                               Note:   See medical coding specifications.
```

Tape Position	Frequencies	Variable Description and Codes
273-278		Fourth Diagnosis
	2333	ICD-9-CM Code
	3431	999997 = Inapplicable (less than four diagnoses coded
		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
	70	ICD-9-CM Code
	3431	99997 = Inapplicable (less than four diagnoses coded)
	3860	Blank = Stay reported, no abstract form received or fourth diagnosis does not require E code

Note: See medical coding specifications.

Tape Position	Frequencies	Variable Description and Codes
284-289		Fifth Diagnosis
	1526	ICD-9-CM Code
	4238	999997 = Inapplicable (less than five diagnoses coded)
	1597	Blank = Stay reported, no abstract form received

Note: See medical coding specifications.

Tape Position	Frequencies	Variable Description and Codes
290-294		Fifth Diagnosis E Code
	28	ICD-9-CM Code
	4238	99997 = Inapplicable (less than five diagnoses coded)
	3095	Blank = Stay reported, no abstract form received or fifth diagnosis does not require E code

Note: See medical coding specifications.

```
Tape
Position        Frequencies    Variable Description and Codes


295-300                        Sixth Diagnosis

                  965          ICD-9-CM Code
                 4799          999997 = Inapplicable (less than six
                                        diagnoses coded)
                 1597           Blank = Stay reported, no abstract form
                                        received

                               Note:  See medical coding specifications.


301-305                        Sixth Diagnosis E Code

                   29          ICD-9-CM Code
                 4799          99997 = Inapplicable (less than six diagnoses
                                       coded)
                 2533          Blank = Stay reported, no abstract form
                                       received or sixth diagnosis does not
                                       require E code

                               Note:  See medical coding specifications.


306-311                        Seventh Diagnosis

                  597          ICD-9-CM Code
                 5167          999997 = Inapplicable (less than seven
                                        diagnoses coded)
                 1597           Blank = Stay reported, no abstract form
                                        received

                               Note:  See medical coding specifications.


312-316                        Seventh Diagnosis E Code

                   17          ICD-9-CM Code
                 5167          99997 = Inapplicable (less than seven
                                       diagnoses coded)
                 2177          Blank = Stay reported, no abstract form
                                       received or seventh diagnosis does
                                       not require E code

                               Note:  See medical coding specifications.
```

```
Tape
Position    Frequencies    Variable Description and Codes


317-322                    Eighth Diagnosis

            376            ICD-9-CM Code
           5388            999997 = Inapplicable (less than eight
                                    diagnoses coded)
           1597             Blank = Stay reported, no abstract form
                                    received

                           Note:   See medical coding specifications.

323-327                    Eighth Diagnosis E Code

              6            ICD-9-CM Code
           5388            99997 = Inapplicable (less than eight
                                   diagnoses coded)
           1967            Blank = Stay reported, no abstract form
                                   received or eighth diagnosis does not
                                   require E code

                           Note:   See medical coding specifications.

328-333                    Ninth Diagnosis

            238            ICD-9-CM Code
           5526            999997 = Inapplicable (less than nine
                                    diagnoses coded)
           1597             Blank = Stay reported, no abstract form
                                    received

                           Note:   See medical coding specifications.

334-338                    Ninth Diagnosis E Code

              7            ICD-9-CM Code
           5526            99997 = Inapplicable (less than nine
                                   diagnoses coded)
           1828            Blank = Stay reported, no abstract form
                                   received or ninth diagnosis does not
                                   require E code

                           Note:   See medical coding specifications
```

```
Tape
Position      Frequencies    Variable Description and Codes


339-344                      Tenth Diagnosis

         161                 ICD-9-CM Code
        5603                 999997 = Inapplicable (less than ten
                                      diagnoses coded)
        1597                  Blank = Stay reported, no abstract form
                                      received

                             Note:  See medical coding specifications.


345-349                      Tenth Diagnosis E Code

           8                 ICD-9-CM Code
        5603                 99997 = Inapplicable (less than ten diagnoses
                                     coded)
        1750                 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

              5431            00-08 = Number of procedures
               333               97 = Inapplicable (facility is a nursing
                                      home)
              1597            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

              2239            ICD-9-CM Code
              3525            9997  = Inapplicable (facility is a nursing
                                      home or no procedures coded)
              1597            Blank = Stay reported, no abstract form
                                      received

                              Note:  See medical coding specifications.

356-359                       Second Procedure

               950            ICD-9-CM Code
              4814            9997  = Inapplicable (facility is a nursing
                                      home or only one procedure coded)
              1597            Blank = Stay reported, no abstract form
                                      received

                              Note:  See medical coding specifications.

360-363                       Third Procedure

               354            ICD-9-CM Code
              5410            9997  = Inapplicable (facility is a nursing
                                      home or less than three procedures
                                      coded)
              1597            Blank = Stay reported, no abstract form
                                      received

                              Note:  See medical coding specifications.
```

Tape Position	Frequencies	Variable Description and Codes
364-367		<u>Fourth Procedure</u>
	119	ICD-9-CM Code
	5645	9997 = Inapplicable (facility is a nursing home or less than four procedures coded)
	1597	Blank = Stay reported, no abstract form received
		Note: See medical coding specifications.
368-371		<u>Fifth Procedure</u>
	31	ICD-9-CM Code
	5733	9997 = Inapplicable (facility is a nursing home or less than five procedures coded)
	1597	Blank = Stay reported, no abstract form received
		Note: See medical coding specifications.
(372-373)		<u>Presence of Documents</u>
372		<u>Pathology Report</u>
	190	1 = Required and present
	76	2 = Required and not present
	5165	6 = Not required
	333	7 = Inapplicable (facility is a nursing home)
	1597	Blank = Stay reported, no abstract form received
373		<u>Third Day EKG Report</u>
	142	1 = Required and present
	40	2 = Required and not present
	5249	6 = Not required
	333	7 = Inapplicable (facility is a nursing home)
	1597	Blank = Stay reported, no abstract form received
374-379	7361	<u>Blank</u>

45

```
Tape
Position    Frequencies    Variable Description and Codes


(380-429)                  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

            238               3 = NHEFS 1987
           7123            Blank = No related stays

381-382                    Facility Number

            238            01-10 = Hospital/nursing home number
           7123            Blank = No related stays

383-384                    Stay Number Within Facility

            238            01-09 = Stay number
           7123            Blank = No related stays
```

```
Tape
Position     Frequencies     Variable Description and Codes


(385-389)                    ID of Second Related Stay

385                          Survey Period Identifier

             34                  3 = NHEFS 1987
             7327            Blank = No second related stay

386-387                      Facility Number

             34              01-04 = Hospital/nursing home number
             7327            Blank = No second related stay

388-389                      Stay Number Within Facility

             34              01-11 = Stay number
             7327            Blank = No second related stay

(390-394)                    ID of Third Related Stay

390                          Survey Period Identifier

             19                  3 = NHEFS 1987
             7342            Blank = No third related stay

391-392                      Facility Number

             19              01-04 = Hospital/nursing home number
             7342            Blank = No third related stay

393-394                      Stay Number Within Facility

             19              01-12 = Stay number
             7342            Blank = No third related stay
```

```
Tape
Position      Frequencies      Variable Description and Codes


(395-399)                      ID of Fourth Related Stay

395                            Survey Period Identifier

                 8                 3 = NHEFS 1987
              7353             Blank = No fourth related stay

396-397                        Facility Number

                 8             01-04 = Hospital/nursing home number
              7353             Blank = No fourth related stay

398-399                        Stay Number Within Facility

                 8             02-06 = Stay number
              7353             Blank = No fourth related stay

(400-404)                      ID of Fifth Related Stay

400                            Survey Period Identifier

                 4                 3 = NHEFS 1987
              7357             Blank = No fifth related stay

401-402                        Facility Number

                 4             02-03 = Hospital/nursing home number
              7357             Blank = No fifth related stay

403-404                        Stay Number Within Facility

                 4             01-03 = Stay number
              7357             Blank = No fifth related stay
```

48

```
Tape
Position      Frequencies    Variable Description and Codes


(405-409)                    ID of Sixth Related Stay

405                          Survey Period Identifier

                 2              3 = NHEFS 1987
              7359           Blank = No sixth related stay

406-407                      Facility Number

                 2           02-03 = Hospital/nursing home number
              7359           Blank = No sixth related stay

408-409                      Stay Number Within Facility

                 2           02-04 = Stay number
              7359           Blank = No sixth related stay

(410-414)                    ID of Seventh Related Stay

410                          Survey Period Identifier

                 1              3 = NHEFS 1987
              7360           Blank = No seventh related stay

411-412                      Facility Number

                 1             03 = Hospital/nursing home number
              7360           Blank = No seventh related stay

413-414                      Stay Number Within Facility

                 1             05 = Stay number
              7360           Blank = No seventh related stay
```

```
Tape
Position        Frequencies     Variable Description and Codes


(415-419)                       ID of Eighth Related Stay

415                             Survey Period Identifier

                7361            Blank = No eighth related stay

416-417                         Facility Number

                7361            Blank = No eighth related stay

418-419                         Stay Number Within Facility

                7361            Blank = No eighth related stay

(420-424)                       ID of Ninth Related Stay

420                             Survey Period Identifier

                7361            Blank = No ninth related stay

421-422                         Facility Number

                7361            Blank = No ninth related stay

423-424                         Stay Number Within Facility

                7361            Blank = No ninth related stay
```

Tape Position	Frequencies	Variable Description and Codes
(425-429)		ID of Tenth Related Stay
425		Survey Period Identifier
	7361	Blank = No tenth related stay
426-427		Facility Number
	7361	Blank = No tenth related stay
428-429		Stay Number Within Facility
	7361	Blank = No tenth related stay

Figure 1

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

. 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

	Record		Related
Report Section	Status Section	Abstract Section	Stay section

52

Figure 2

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

Record status code

Match

Report Section	Mat	Abstract Section

Non-match

Report Section	non-match code	No Abstract received

Additional abstract
found

No report section	ASF	Abstract Section

53

APPENDIX A

RECORD STATUS CODES

Code	Frequency	Description

ANO - 57   "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 - 1446   "Additional Stay Found." This code was assigned when a returned in-scope abstract could not be matched to a reported stay. This code was also assigned to in-scope abstracts 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 - 183   "Cross-Referenced Match." This code indicates a stay that was begun prior to the NHEFS 1987 survey period and continues into the 1987 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 most recent interview because this is a continuing stay. Thus, it appears to be, but is not, out-of-scope for 1987.

CRX - 21   "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 1987 Survey period, yet no in-scope abstract was received for the 1987 survey period.

FNC - 110   "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.

54

Code	Frequency	Description
MAT -	4135	"Record Match." This code was assigned when a received abstract matched a reported stay. This code was assigned to in-scope and type C (position 199) reports, but never to type D reports. In-scope abstracts that were received as the result of a type D report were assigned an ASF code. See ASF.
ONR -	101	"Other Non-Response." This code was assigned to a stay when no response for the stay request had been received from the facility by the end of the study period.
REF -	158	"Refused." This code was assigned if a facility refused to send back the abstract requested. It is record, not subject specific. For example, a facility may have sent some abstracts for a subject but refused to send other abstract for the same subject.
XNH -	367	"Subject Never at Facility." This code was used when the facility indicated that the patient was never admitted to that facility.
XNS -	755	"Other - No Stay Found." This code was assigned when a facility responded it was unable to send abstracts because no in-scope stays were found at the facility, or when the facility returned the request form without abstracts and provided no explanation for the failure to provide them.
XRD -	28	"Record Destroyed or No Longer Available." This code was assigned if the facility attempted to locate the abstract but stated that it no longer existed, i.e., was destroyed, or lost.

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

APPENDIX B

<u>NUMERIC CODES FOR REPORTED CONDITIONS ON</u>
<u>HEALTH CARE FACILITY STAY RECORDS</u>

<u>Code for reported</u> <u>Condition</u>	<u>Condition</u> <u>Description</u>
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
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
15	Surgery
16	Don't know
17	Not ascertained
18	Tests/observation/x-rays/physical exam
19	Digestive/endocrine condition
20	Respiratory condition (including 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
3603	Eye problem other than cataracts, detached retina or glaucoma
37	A fall

<u>Background</u>

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 standard nomenclature for certain conditions (see Type A conditions below) or in the respondent's own words. If necessary the respondent's description was edited to fit into the 30 positions available in the record. 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 codes "07" and "14" are not included in the coding structure for the 1987 file. These codes had been assigned to conditions in the 1982-84 and 1986 followups. The 1987 followup questionnaire differs from the previous two versions and sufficient information was not collected to assign these codes.

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 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 of the interview 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 of the interview. For example, if a respondent answered "yes" to question B-17 ("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-17)
02	Gout (B-17)
03	Heart attack (B-23)
04	Other heart conditions (B-24)
05	Coronary bypass surgery (B-27)
06	Procedures for pacemakers (B-29)
08	Stroke (B-35)
09	Diabetes (B-42)
10	High blood pressure (B-48)
11	Cancer (B-52)
12	Fractured hip (B-61)
20	Pneumonia, bronchitis and influenza (B-71)
	Note: this code is also found under Type D because other respiratory conditions are also coded to category 20
22	Kidney, bladder or urinary problem (B-74)
34	Care in non-acute care facility (B-86)
35	In a facility at death (B-93)
36	Cataracts (B-79)
37	A fall (B-70)

Complete agreement between responses to the questions in section B 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 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-24 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:

      13   Bone fracture
      18   Tests and observation

Type C - Unknown conditions:

      16   Don't know
      17   Not ascertained

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
               Note: this code is also found under Type A because the specific question about pneumonia, bronchitis and influenza (B-71) is coded to the general category
      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
      3603 Eye problem (except cataracts, detached retina or glaucoma)

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

      15   Surgery
      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 has been matched to the report. 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 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". Analysts need 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 match criteria.