NATIONAL HOSPITAL DISCHARGE SURVEY
1997 PUBLIC USE DATA TAPE DOCUMENTATION

Abstract

This material provides documentation for users of the 1997 NHDS Public Use Data Tape. The NHDS is conducted annually by the National Center for Health Statistics (NCHS) and is a principal source of information on inpatient hospital utilization in the United States.

Section I describes the survey and includes information on the history and scope of the NHDS; the methodology followed, including data collection and medical coding procedures; population estimates; measurement errors and sampling errors.

Section II provides technical details of the tape.

Section III provides a detailed description of the contents of each data record.

Appendix A defines certain terms used in this document.
Appendix B lists the ICD-9-CM Addenda.
Appendix C provides population estimates to allow the user to calculate rates.
Appendix D provides unweighted and weighted frequencies for selected variables.

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I. DESCRIPTION OF THE NATIONAL HOSPITAL DISCHARGE SURVEY

INTRODUCTION. This document and its appendices contain information for users of the 1997 National Hospital Discharge Survey (NHDS) public use data file. Conducted annually by the National Center for Health Statistics, NHDS collects medical and demographic information from a sample of discharge records selected from a national sample of nonFederal, short-stay hospitals. The data serve as a basis for calculating statistics on inpatient hospital utilization in the United States. For a brief description of the survey design and data collection procedures, see below. For a more detailed description of the survey design, data collection procedures, and the estimation process, see Reference 1. Publications based on the data for each survey year can be obtained from the Government Printing Office.

HISTORY. To provide more complete and precise information on the utilization of the Nation's hospitals and on the nature and treatment of illness among the hospitalized population, in 1962 the NCHS began exploring possibilities for surveying morbidity in hospitals. A national advisory group was established. The NCHS conducted planning discussions with other officials of the Public Health Service. Hospitalization material from the Survey Research Center of the University of Michigan, the American Hospital Association, and the Professional Activities Study was examined and evaluated. In 1963, a study by the School of Public Health of the University of Pittsburgh under contract to the NCHS demonstrated the feasibility of an NHDS type of program. An additional pilot study using enumerators from the Bureau of the Census was conducted in late 1964 and confirmed the University of Pittsburgh's findings.

Finally, with advice and support from the American Hospital Association, the American Medical Association, individual experts, other professional groups, and officials of the U.S. Public Health Service, the NCHS initiated the National Hospital Discharge Survey in 1964.

SURVEY METHODOLOGY

SOURCE OF THE DATA. The National Hospital Discharge Survey (NHDS) covers discharges from noninstitutional hospitals, exclusive of Federal, military, and Veterans Administration hospitals, located in the 50 States and the District of Columbia. Only short-stay hospitals (hospitals with an average length of stay for all patients of less than 30 days) or those whose specialty is general (medical or surgical) or children's general are included in the survey. These hospitals must also have six or more beds staffed for patient use. These criteria, used from 1988 through the current survey year, differ slightly from those used prior to 1988.

Beginning in 1988, the NHDS sampling frame consisted of hospitals that were listed in the April 1987 SMG Hospital Market Tape (2), met the above criteria, and began accepting patients by August 1987. The hospital sample was updated in 1991, 1994, and 1997, to allow

for hospitals that opened later or changed their eligibility status since the previous sample update. For 1997 the sample consisted of 513 hospitals. Of the 513 hospitals, 12 were found to be out of scope (ineligible) because they went out of business or otherwise failed to meet the criteria for the NHDS universe. Of the 501 inscope (eligible) hospitals, 474 hospitals responded to the survey.

SAMPLE DESIGN AND DATA COLLECTION. The NCHS has conducted the NHDS continuously since 1965. The original sample was selected in 1964 from a frame of short-stay hospitals listed in the National Master Facility Inventory. That sample was updated periodically with samples of hospitals that opened later. Sample hospitals were selected with probabilities ranging from certainty for the largest hospitals to 1 in 40 for the smallest hospitals. Within each sample hospital, a systematic random sample of discharges was selected. A report on the design and development of the original NHDS has been published (1).

In 1988, the NHDS was redesigned to provide geographic sampling comparability with other surveys conducted by the NCHS; to update the sample of hospitals selected into the survey; and to maximize the use of data collected through automated systems. As did the original design, the redesigned NHDS sample included with certainty the largest hospitals.   The remaining sample of hospitals was based on a stratified, three-stage design. The first stage consisted of selecting 112 primary sampling units (PSU's) that comprised a probability subsample of PSU's used in the 1985-94 National Health Interview Survey. The second stage consisted of selecting non-certainty hospitals from the sampled PSU's. At the third stage a sample of discharges was selected by a systematic random sampling technique.

These changes in the survey may affect trend data. That is, some of the differences between NHDS statistics based on the 1965-87 sample and statistics based on the sample drawn for the new design may be due to sampling error rather than actual changes in hospital utilization.

Two data collection procedures were used for the survey. The first was a manual system of sample selection and data abstraction, used for approximately 60 percent of the responding hospitals.   The second was an automated method, used for approximately 40 percent of the responding hospitals, that involved the purchase of computerized data tapes from abstracting service organizations, state data systems, or from the hospitals themselves.

In the manual system, the sample selection and the transcription of information from the hospital records to abstract forms were performed at the hospitals. Of the hospitals using this system in 1997, about 33 percent had the work performed by their own medical records staff. In the remaining hospitals using the manual system, personnel of the U.S. Bureau of the Census did the work on behalf of NCHS. The completed forms, along with sample selection control sheets, were forwarded to NCHS for coding, editing, and weighting.

For the automated system, NCHS purchased tapes containing machine-readable medical

record data from which records were systematically sampled by NCHS.

The Medical Abstract Form and the automated data contain items relating to the personal characteristics of the patient, including birth date or age, sex, race, and marital status, but not name and address; administrative information, including admission and discharge dates, discharge status, and medical record number; and medical information, including diagnoses and surgical and nonsurgical procedures. Since 1977, patient zip code, expected source of payment, and dates of surgery have also been collected. (The medical record number, date of birth, and patient zip code are confidential information and are not available to the public.)

MEDICAL CODING AND EDIT. The medical information that was recorded manually on the sample patient abstracts was coded centrally by NCHS staff. A maximum of seven diagnostic codes was assigned for each sample abstract. In addition, if the medical information included surgical or nonsurgical procedures, a maximum of four codes for these procedures was assigned. The system currently used for coding the diagnoses and procedures on the medical abstract forms as well as on the commercial abstracting services data tapes is the International Classification of Diseases, 9th Revision, Clinical Modification, or ICD-9-CM (3).

NHDS usually presents diagnoses and procedures in the order they are listed on the abstract form or obtained from abstract services; however, there are exceptions. For women discharged after a delivery, a code of V27 from the supplemental classification is entered as the first-listed code, with a code designating either normal or abnormal delivery in the second-listed position. In another exception, a decision was made to reorder some acute myocardial infarction diagnoses. If an acute myocardial infarction is listed with other circulatory diagnoses and is other than the first entry, it is reordered to first position. If a symptom appears as a first-listed code and a diagnosis appears as a secondary code, the diagnosis replaces the symptom which is moved back.

Following conversion of the data on the medical abstract to computer tape and combining it with the automated data tapes, a final medical edit was accomplished by computer inspection and by a manual review of rejected records. Priority was given to medical information in the editing decision.

A new edit program was developed for the NHDS and was implemented beginning in the 1996 data year. The updated edit program, while following the same general specifications as the previous edit program, was designed to make as few changes as possible in the data. Thus, there may be some minor anomalies in certain areas which would be apparent when examining data over time, performing trend analyses, or examining combinations of variables. Particular features of the new edit program which may affect certain variables are:
<   An improved imputation procedure for missing age and sex data was developed, which maintains the known distribution of these variables, according to categories

of the First-Listed Diagnosis.
< There is no longer a re-ordering of the procedure codes.
< Principal and additional expected sources of payment are no longer re-ordered, with
one exception: "Self-Pay" is listed as the principal source only if there are no other
sources, or the only other source is "Not Stated"; otherwise it must be listed after
every other source (except "Not Stated").
< An arbitrary month of admission is no longer assigned to records received from
abstract services which do not provide the exact date of admission and discharge.

Users of the National Hospital Discharge Survey (NHDS) diagnostic and/or procedure data,
which is coded to the ICD-9-CM, must take into account annual ICD-9-CM addenda. The
addenda lists new codes, new fourth or fifth digits to existing codes, as well as other
modifications. Changes go into effect October 1 of the calendar year. A list of the changes
for 1986 through 1996 are listed in Appendix B. All coding of the 1997 data is consistent
with the ICD-9-CM and the addendum effective October 1, 1996. Information provided by
automated systems for the last three months of 1997 which was coded using the October
1997 addendum was converted back to the previous code assignment. This was done in
order to prevent NHDS data users from mistaking partial year estimates for annual estimates.

THE UNIFORM HOSPITAL DISCHARGE DATA SET (UHDDS). Starting with 1979
data, the NHDS has followed guidelines of the Uniform Hospital Discharge Data Set
(UHDDS) within the confines of its contractual agreement with participating hospitals. The
UHDDS is a minimum data set of items uniformly defined (4). These items were selected
on the basis of their usefulness to a broad range of organizations and agencies requiring
hospital information, uniformity of definition, and general availability from medical records
and abstract services.

POPULATION ESTIMATES. Appendix C describes LOTUS files which accompany this
documentation. The files, provided by the U. S. Bureau of the Census, contain estimates of
the U. S. civilian population as of July 1, 1997, and may be used to calculate rates of hospital
utilization. The estimates are consistent with those published in PPL-91R (U.S. Population
Estimates by Age, Sex, Race and Hispanic Origin: 1990-1997) and have been adjusted for net
underenumeration using the 1990 National Population Adjustment Matrix. NOTE THAT
PRIOR TO THE 1997 DATA YEAR, CENSUS ESTIMATES OF THE CIVILIAN
POPULATION PROVIDED WITH THE NHDS PUBLIC USE DATA TAPE
DOCUMENTATION WERE NOT ADJUSTED FOR THE UNDERCOUNT.

MEASUREMENT ERRORS. As in any survey, results are subject to nonsampling or
measurement errors, which include errors due to hospital nonresponse, missing abstracts,
information incompletely or inaccurately recorded on abstract forms, and processing errors.
A very small proportion, (less than one-half of one percent) of the discharge records failed
to include the sex, age, or date of birth of the patient. If the hospital record did not state
either the age or sex of patient, it was imputed by assigning an age or sex value according

to the specifications described earlier. In a very few cases (about a quarter of a percent of the records), the age or sex was edited, because it was inconsistent with the diagnosis. Data on race was missing for 25percent of the discharges, and no attempt was made to impute for these missing values.

During 1997, 16.5 percent of the records lacked the day of admission or day of discharge, but included a length of stay. Because the new edit program does not require exact admission or discharge dates if length of stay is provided on the record, no attempt was made to impute for these missing values.

Other edit and imputation procedures may have been applied to data in the NHDS collected in automated form.

SAMPLING ERRORS AND ROUNDING OF NUMBERS . The standard error is primarily a measure of sampling variability that occurs by chance because only a sample rather than the entire universe is surveyed. The relative standard error of the estimate is obtained by dividing the standard error by the estimate itself. The resulting value is multiplied by 100, so the relative standard error is expressed as a percent of the estimate. Estimates of sampling variability were calculated with SUDAAN software, which computes standard errors by using a first-order Taylor series approximation of the deviation of estimates from their expected values. A description of the software and the approach it uses was published by Shah, Barnwell, and Bieler (5).

RELATIVE STANDARD ERRORS FOR AGGREGATE ESTIMATES

Parameters for calculating approximate relative standard errors for aggregate estimates are presented in Table 1. To derive error estimates that would be applicable to a wide variety of statistics, numerous estimates and their variances were produced. A regression model was then used to produce best-fit curves, based on the empirically determined relationship between the size of an estimate X and its relative variance.

The relative standard error of an estimate, RSE(X), may be calculated from the formula:

$$RSE(X) = SQRT(a + b/X)$$

with a and b provided in the accompanying table. When multiplied by 100, RSE(X) is expressed as a percent of X.

For example, in 1997 the estimated number of discharges from short-stay hospitals for females with a first-listed diagnosis of atherosclerotic heart disease (ICD-9-CM code 414.0) was 384,000. Using the applicable constants from Table 1 for estimates by sex produces:

$$RSE(384,000) = SQRT [.00127 + (325.984 / 384,000)] = .046$$

Expressed as a percent, RSE(384,000) = 4.60 % From this the standard error is obtained by multiplying the relative standard error by the estimate:

$$SE(384,000) = 384,000 * .046 = 17,664$$

The standard error can be employed to generate confidence intervals for statistical testing. In this example, the 95% confidence interval for the estimate of female inpatients with a first-listed diagnosis of atherosclerotic heart disease is:

LOWER LIMIT: 384,000 - 2 * 17,664 = 348,670
UPPER LIMIT: 384,000 + 2 * 17,664 = 419,330

RELATIVE STANDARD ERRORS FOR ESTIMATES OF PERCENTS

Approximate relative standard errors for estimates of percents may be calculated using values from Table 1 also. The relative standard error for a percent, 100 p where (0<p<1), may be calculated using the formula:

$$RSE(p) = SQRT [b * (1 - p)/(p * X)]$$

where 100 p is the percent of interest, X is the base of the percent, and b is the parameter b in the formula for approximating the RSE(X). Values for b are given in Table 1. When multiplied by 100, the relative standard error is expressed as a percent of the estimate, p.

For example, in 1997 the estimated number of discharges from short-stay hospitals which were female was 18,647,000. This is 60.3 percent of the estimated 30,914,000 discharges for that year. Using the applicable constants for estimates by sex produces:

$$RSE(.603) = SQRT [325.984 * (1 - .603) / (.603 * 30,914,000)] = 0.002635$$

Expressed as a percent, RSE(.603) = 0.2635%

The relative standard error for the estimate of interest is 0.2635 percent. From this the standard error is obtained by multiplying the relative standard error by the estimate:

$$SE(.603) = .603* 0.2635\% = .0016$$

The standard error can be employed to generate confidence intervals for statistical testing. In this example, the 95% confidence interval for the estimate of the percentage of female inpatients is:

LOWER LIMIT: .603 - 2 * .0016 = .5998 = 59.98 %

UPPER LIMIT: .603 + 2 * .0016 = .6062 = 60.62 %

TABLE 1. Parameter values for relative standard error curves for National Hospital Discharge Survey aggregate statistics, by statistics type: United States, 1997

	First-Listed Diagnosis		All-Listed Diagnoses		Days of Care		All-Listed Procedures	
	a	b	a	b	a	b	a	b
TOTAL	0.00132	313.983	0.00271	428.987	0.00242	1,036.029	0.00288	323.247
Male	0.00148	335.128	0.00214	307.917	0.00299	1,309.507	0.00268	380.213
Female	0.00127	325.984	0.00127	311.394	0.00252	1,060.275	0.00197	299.725
Und15	0.01470	181.262	0.01617	223.921	0.02393	346.675	0.02639	196.719
15-44	0.00137	294.357	0.00151	309.115	0.00285	934.043	0.00219	305.574
45-64	0.00138	301.320	0.00290	370.245	0.00284	1,248.476	0.00235	298.267
65&Up	0.00147	343.779	0.00144	361.717	0.00275	1,866.761	0.00239	292.252
NE	0.00384	195.564	0.00592	239.709	0.00863	495.447	0.00695	219.126
MW	0.00609	191.492	0.00853	180.424	0.00866	481.071	0.00870	163.190
SO	0.00369	320.084	0.00307	341.005	0.00572	1,581.301	0.00498	274.548
WE	0.00513	338.516	0.00508	378.827	0.01008	926.285	0.00663	288.835
White	0.00300	314.704	0.00357	314.530	0.00480	1,103.096	0.00463	369.830
Black	0.00529	248.048	0.00519	236.801	0.00822	875.877	0.00662	225.180
Other	0.01770	200.033	0.01615	224.604	0.02524	581.314	0.02070	211.065
NS	0.01973	196.517	0.02002	187.166	0.02387	394.423	0.02126	142.769
WC	0.00721	320.711	0.01093	337.073	0.01413	896.903	0.01143	270.432
Mcare	0.00171	325.698	0.00157	372.529	0.00301	1,822.158	0.00264	297.577
Mcaid	0.00438	293.366	0.00379	287.541	0.00709	685.261	0.00540	282.342
NS	0.00962	313.407	0.01219	310.942	0.01966	1,484.182	0.01814	248.591
OGOV	0.00181	278.864	0.00199	299.815	0.00345	617.794	0.00265	289.092
Private	0.00373	265.383	0.00415	281.681	0.00994	854.606	0.00689	227.293
SelfPay	0.02771	94.095	0.03212	127.947	0.03240	244.803	0.03297	94.813
NC/Oth	0.01828	394.867	0.01931	386.315	0.02548	1,488.967	0.02059	388.354

PRESENTATION OF ESTIMATES. Publication of estimates for the NHDS is based on the relative standard error of the estimate and the number of sample records on which the estimate is based. Estimates are not presented in NCHS reports unless a reasonable assumption regarding the probability distribution of the sampling error is possible.

Based on consideration of the complex sample design of the NHDS, the following guidelines are used for presenting the NHDS estimates:

> If the sample size is less than 30, the value of the estimate is not reported.
>
> If the sample size is 30-59, the value of the estimate is reported but should not be assumed reliable.
>
> If the sample size is 60 or more and the relative standard error is less than 30 percent, the estimate is reported.
>
> If the relative standard error of any estimate is over 30 percent, the estimate is considered to be unreliable. It is left to the author to decide whether or not to present it. However, if the author chooses to present the unreliable estimate, the consumer of the statistic must be informed that the statistic is not reliable.

MONTHLY AND SEASONAL ESTIMATES UNDER THE NEW DESIGN.
An important difference between the old and new designs is the method used to adjust for nonresponse. In the old design, weights for responding hospitals were adjusted each month to account for hospitals that did not respond for that month. In the new design, the type of nonresponse adjustment applied depended on whether the hospital was considered a nonrespondent or partial respondent. A nonresponding hospital was one which failed to provide at least half of the expected number of discharges for at least half of the months for which it was inscope. In this case, weights of discharges from hospitals similar to the nonresponding hospital were inflated to account for discharges of the nonrespondent hospital. However, this adjustment was performed just once, after the close out of the survey for the year, instead of monthly as before.

For partially responding hospitals, one or both of two adjustments were made. If the hospital provided at least half, but not all, of the expected number of abstracts for a given month, the weights of the abstracts actually collected for that month were inflated to account for the missing abstracts. If fewer than half of the expected number of abstracts were provided, the weights of the abstracts provided were inflated by a factor of two, then a second adjustment was made to account for the excess nonresponse. In the second adjustment, the weights of the discharges in the hospital's respondent months were inflated by ratios that varied by category of first-listed ICD-9-CM diagnostic code. This adjustment ratio was based on the hospital's month(s) of nonresponse and the month-by-month distributions of first-listed diagnostic groups among discharges from hospitals which

responded for all twelve months. The ratio accounts for the seasonality in the occurrence of the first-listed diagnostic groups for annual statistics, but not for partial year estimates. As a result monthly and seasonal estimates may be skewed. While the effect is believed to be small, it is recommended that partial year estimates NOT be produced. In the 1997 NHDS, 87 percent of the 474 responding hospitals provided data for all twelve months, and 97 percent provided at least 9 months of data.

HOW TO USE THE DATA TAPE. The NHDS records are weighted to allow inflation to national or regional estimates. The weight applied to each record is found in tape location 21-25. To produce an estimate of the number of discharges, the weights for the desired records must be summed. To produce an estimate for number of days of care, the weight must be multiplied by the days of care (tape location 13-16) and these products are summed. Average length of stay data can be obtained by dividing the days of care by the number of discharges as calculated above.

Appendix D contains unweighted and weighted frequencies for selected variables on the data tape. These may be used as a cross-check when processing the data on the user's system.

DIAGNOSIS-RELATED GROUPS (DRGs). Many users of the NHDS data tapes have expressed an interest in converting the data to DRGs. This has been done using DRG Grouper Programs obtained from the Health Care Financing Administration. The DRGs and the DRG Grouper Programs were developed outside of the National Center for Health Statistics; any questions about DRGs, other than specific questions about how they relate to NHDS data, should be addressed elsewhere.

QUESTIONS. Questions concerning data on the tape should be directed to Maria Owings, Ph.D., Hospital Care Statistics Branch, Division of Health Care Statistics, National Center for Health Statistics, Presidential Building, Room 956, 6525 Belcrest Road, Hyattsville, Maryland 20782, (301)-436-7125.

REFERENCES

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(2) SMG Marketing Group, Inc. Hospital Market Database. Healthcare Information Specialists, 1342 North LaSalle Drive, Chicago, IL. 1987, April 1991, April 1994, April 1997.

(3) National Center for Health Statistics: International Classification of Diseases, 9th Revision, Clinical Modification. DHHS Pub. No. (PHS) 80-1260. Public Health Service. Washington. U.S. Government Printing Office, Sept. 1980.

(4) Office of the Secretary, Department of Health and Human Services: Health Information Policy Council: 1984 Revision of the Uniform Hospital Discharge Data Set. Federal Register, Volume 50, No. 147. July 31, 1985.

(5) Shah, Babubhai.V., Beth G. Barnwell, and Gayle S. Bieler. SUDAAN User's Manual: Software for Analysis of Correlated Data, Release 6.40.   Research Triangle Institute: Research Triangle Park, N.C. 1997.

II. TECHNICAL DESCRIPTION OF TAPE

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Data Set Name---------------------------------------------------BG00.NHDS97.PU
Number of REELS or CARTRIDGES----------------------------------------------1
Number of Recording Tracks, REEL-------------------------------------------9
Number of Recording Tracks, CARTRIDGE----------------------------------18
Density for REEL (bpi)---------------------------------------------------6,250
Density for CARTRIDGE (bpi)--------------------------------------------38,000
Language-------------------------------------------------------------EBCDIC
Parity-------------------------------------------------------------------Odd
Record Length-----------------------------------------------------------81
Block Size------------------------------------------------------------16,200
Number of Records---------------------------------------------------300,464
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III. RECORD FORMAT: Location and Coding of Data Elements

This section provides detailed information for each sampled record on the
tape, with a description of each item included in the record. Data elements
are arranged sequentially according to their physical location on the tape
record. Unless otherwise stated in the Item Description, the data are derived
from the abstract form or from automated sources. The SMG Hospital
Market Tape and the hospital interview are alternate sources of data; some
other items are computer generated.

Item Number	Tape Location	Number of Positions	Item Description and Codes	
1	1-2	2	Survey Year:	97
2	3	1	Newborn Status:	1 = Newborn 2 = Not Newborn
3	4	1	Units for Age:	1 = Years 2 = Months 3 = Days
4	5-6	2	Age in years, months, or days:	If Units = Years: 0-99* If Units = Months: 01-11 If Units = Days: 00-31
5	7	1	Sex:	1 = Male 2 = Female
6	8	1	Race:	1 = White 2 = Black 3 = American Indian/Eskimo 4 = Asian/Pacific Islander 5 = Other 9 = Not Stated
7	9	1	Marital Status:	1 = Married 2 = Single 3 = Widowed 4 = Divorced 5 = Separated 9 = Not Stated
8	10-11	2	Month of Admission:	01-12: January to December 99: Missing

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* Ages 100 and over were recoded to 99.

Item Number	Tape Location	Number of Positions	Item Description and Codes
9	12	1	Discharge Status: 1 = Routine/Discharged Home 2 = Left Against Medical Advice 3 = Discharged/Transferred to Short-Term Facility 4 = Discharged/Transferred to Long-Term Care Institution 5 = Alive, Disposition Not Stated 6 = Dead 9 = Not Stated or Not Reported
10	13-16	4	Days of Care: Use to calculate number of days of care; Values of zero generated by the computer from admission and discharge dates were changed to one. (Discharges for which dates of admission and discharge are the same are identified in Item Number 11.)
11	17	1	Length of Stay Flag: 0 = Less than 1 day 1 = 1 day or more
12	18	1	Geographic Region: 1 = Northeast 2 = Midwest 3 = South 4 = West
13	19	1	Number of Beds, Recode: 1 = 6-99 2 = 100-199 3 = 200-299 4 = 300-499 5 = 500 and over
14	20	1	Hospital Ownership: 1 = Proprietary 2 = Government 3 = Nonprofit, including Church

Item Number	Tape Location	Number of Positions	Item Description and Codes
15	21-25	5	Analysis Weight: Use to obtain weighted estimates
16	26	1	Principal Expected Source of Payment: 0 = No Charge 1 = Workmen's Compensation 2 = Medicare 3 = Medicaid 4 = Other Govt Payments, incl. Title V 5 = Blue Cross 6 = Other Private/Commercial Insurance 7 = Self-Pay 8 = Other 9 = Not Stated
17	27	1	Secondary Expected Source of Payment: Same coding as item 16
18	28-32	5	Diagnosis Code #1 *
19	33-37	5	Diagnosis Code #2 *
20	38-42	5	Diagnosis Code #3 *
21	43-47	5	Diagnosis Code #4 *
22	48-52	5	Diagnosis Code #5 *
23	53-57	5	Diagnosis Code #6 *
24	58-62	5	Diagnosis Code #7 *
25	63-66	4	Procedure Code #1 *
26	67-70	4	Procedure Code #2 *
27	71-74	4	Procedure Code #3 *
28	75-78	4	Procedure Code #4 *
29	79-81	3	DRG, Grouper Version 14.0

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* Codes are in compliance with the International Classification of Diseases, 9th Revision, Clinical
Modification, (ICD-9-CM). For diagnosis codes, there is an implied decimal between positions 3
 and 4. For E-codes, the implied decimal is between the 4th and 5th position. For inapplicable
4th or 5th digits, a dash is inserted. For procedure codes, there is an implied decimal between
positions 2 and 3. For inapplicable 3rd or 4th digits, a dash is inserted.

 If you have any suggestions about how to better provide NHDS data by DRGs to NHDS data users, please write to Maria Owings, NCHS, Room 956, 6525 Belcrest Road, Hyattsville, MD 20782. Your assistance is greatly appreciated.

APPENDIX A

DEFINITION OF TERMS

TERMS RELATING TO HOSPITALS AND HOSPITALIZATION

HOSPITALS: Short stay hospitals or hospitals whose specialty is general (medical or surgical), or children's general. Hospitals must have 6 beds or more staffed for patients use. Federal hospitals and hospital units of institutions are not included.

TYPE OF OWNERSHIP OF HOSPITAL: The type of organization that controls and operates the hospital. Hospitals are grouped as follows:

   NOT FOR PROFIT: Hospitals operated by a church or another not for profit organization.

   GOVERNMENT: Hospitals operated by State and local government.

   PROPRIETARY: Hospitals operated by individuals, partnerships, or corporations for profit.

PATIENT: A person who is formally admitted to the inpatient service of a short-stay hospital for observation, care, diagnosis, or treatment, or by birth.

DISCHARGE: The formal release of a patient by a hospital; that is, the termination of a period of hospitalization by death or by disposition to place of residence, nursing home, or another hospital. The terms "discharges" and "patients discharged" are used synonymously.

DISCHARGE RATE: The ratio of the number of hospital discharges during the year to the number of persons in the civilian population on July 1 of that year.

DAYS OF CARE: The total number of patient days accumulated at time of discharge by patients discharged from short: stay hospitals during a year. A stay of less than 1 day (patient admission and discharge on the same day) is counted as 1 day in the summation of total days of care. For patients admitted and discharged on different days, the number of days of care is computed by counting all days from (and including) the date of admission to (but not including) the date of discharge.

RATE OF DAYS OF CARE: The ratio of the number of patient days accumulated at time of discharge to the number of persons in the civilian population on July 1 of that year.

AVERAGE LENGTH OF STAY: The total number of days of care accumulated at time of discharge by patients discharged during the year, divided by the number of patients discharged.

TERMS RELATING TO DIAGNOSES AND PROCEDURES

DISCHARGE DIAGNOSIS: One or more diseases or injuries (or some factor that influences health status and contact with health services that is not itself a current illness or injury) listed by the attending physician on the medical record of a patient. In the NHDS, discharge (or final) diagnoses listed on the face sheet (summary sheet) of the medical record are transcribed in the order listed. Each sample discharge is assigned a maximum of seven five-digit codes according to ICD-9-CM (2).

PRINCIPAL DIAGNOSIS: The condition established after study to be chiefly responsible for occasioning the admission of the patient to the hospital for care.

FIRST-LISTED DIAGNOSIS: The coded diagnosis identified as the principal diagnosis or listed first on the face sheet of the medical record if the principal diagnosis cannot be identified. The number of first-listed diagnoses is equivalent to the number of discharges.

PROCEDURE: One or more surgical or nonsurgical operations, procedures, or special treatments listed by the physician on the medical record. In the NHDS, all terms listed on the face sheet (summary sheet) of the medical record under the caption "operation," "operative procedures," "operations and/or special treatment," and the like are transcribed in the order listed. A maximum of four procedures are coded.

RATE OF PROCEDURES: The ratio of the number of all-listed procedures during a year to the number of persons in the civilian population on July 1 of that year determines the rate of procedures.

DEMOGRAPHIC TERMS

AGE: Refers to the age of the patient on the birthday prior to admission to the hospital inpatient service.

POPULATION: Civilian population is the resident population excluding members of the Armed Forces.

GEOGRAPHIC REGIONS: Hospitals are classified by location in one of the four geographic regions of the United States corresponding to those used by the U.S. Bureau of the Census:

U.S. CENSUS REGIONS

NORTHEAST	MIDWEST	SOUTH	WEST
Maine	Michigan	Delaware	Montana
New Hampshire	Ohio	Maryland	Idaho
Vermont	Illinois	District of Columbia	Wyoming
Massachusetts	Indiana	Virginia	Colorado
Rhode Island	Wisconsin	West Virginia	New Mexico
Connecticut	Minnesota	North Carolina	Arizona
New York	Iowa	South Carolina	Utah
New Jersey	Missouri	Georgia	Nevada
Pennsylvania	North Dakota	Florida	Washington
	South Dakota	Kentucky	Oregon
	Nebraska	Tennessee	California
	Kansas	Alabama	Hawaii
		Mississippi	Alaska
		Arkansas	
		Louisiana	
		Oklahoma	
		Texas	

APPENDIX B

The International Classification of Diseases, 9th Revision, Clinical Modification, which has been used for coding NHDS data since 1979, undergoes annual updating. Assignment of new diagnostic and procedure codes, fourth and fifth digit expansion of codes, as well as code deletions, are contained in addenda developed by the ICD-9-CM Coordination and Maintenance Committee and approved by the Director of NCHS and the Administrator of the Health Care Financing Administration. Addenda to the ICD-9-CM become effective on October 1 of the calendar year and have been released for 1986 through 1997.

As described earlier in this document, the 1997 NHDS involved two data collection modes: manual and abstract service. All data collected manually were coded using the third edition of the ICD-9-CM, which includes the addenda for 1986 through 1996. Data collected via abstract service were coded using two different ICD-9-CM revisions. For the first 9 months of 1997, the ICD-9-CM including the addendum of October 1, 1986-96 was used; for the last 3 months the October 1997 addendum was used. Therefore, data provided by automated systems for the last three months of 1997 was converted back to the code assignment under the October 1996 addendum. This was done in order to prevent NHDS data users from mistaking partial year estimates for annual estimates.

In order to assist users in data retrieval, a conversion table is provided that shows the date of introduction of each new code and the previously assigned code equivalent, which had been used for reporting the selected diagnosis or procedure prior to issuance of the new code.

DIAGNOSIS CODES

Current code(s) assignment	Effective October 1	Previous code(s) assignment
005.81	1995	005.8
005.89	1995	005.8
008.00-008.09	1992	008.0
008.43-008.47	1992	008.49
008.61-008.69	1992	008.6
041.00-041.09	1992	041.0
041.10-041.19	1992	041.1
041.81-041.89	1992	041.8
041.86	1995	041.84
041.89	1992	041.8
042	1994	042.0-042.2,042.9,043.0-043.3, 043.9,044.0,044.9 (Codes deleted)
042.0-042.9	1986	279.19
043.0-043.9	1986	279.19
044.0-044.9	1986	279.19
070.20-070.21	1991	070.2
070.22	1994	070.20
070.23	1994	070.21
070.30-070.31	1991	070.3
070.32	1994	070.30
070.33	1994	070.31
070.41-070.43	1991	070.4
070.44	1994	070.41
070.49	1991	070.4
070.51-070.53	1991	070.5
070.54	1994	070.51
070.59	1991	070.5

077.98-077.99	1993	077.9
078.10-078.11,078.19	1993	078.1
078.88	1993	078.89
079.4	1993	079.8
079.50-079.53,079.59	1993	079.8
079.6	1996	079.89
079.81	1995	079.89
079.88-079.89	1993	079.8
079.98-079.99	1993	079.9
088.81,088.89	1989	088.8
088.82	1993	088.89
099.40-099.49	1992	099.4
099.50-099.59	1992	078.89
112.84-112.85	1992	112.89
114.4-114.5	1993	114.3
176.0-176.9	1991	173.0-173.9
203.00	1991	203.0
203.01	1991	V10.79
203.10	1991	203.1
203.11	1991	V10.79
203.80	1991	203.8
203.81	1991	V10.79
204.00	1991	204.0
204.01	1991	V10.61
204.10	1991	204.1
204.11	1991	V10.61
204.20	1991	204.2
204.21	1991	V10.61
204.80	1991	204.8
204.81	1991	V10.61
204.90	1991	204.9

204.91	1991	V10.61
205.00	1991	205.0
205.01	1991	V10.62
205.10	1991	205.1
205.11	1991	V10.62
205.20	1991	205.2
205.21	1991	V10.62
205.30	1991	205.3
205.31	1991	V10.62
205.80	1991	205.8
205.81	1991	V10.62
205.90	1991	205.9
205.91	1991	V10.62
206.00	1991	206.0
206.01	1991	V10.63
206.10	1991	206.1
206.11	1991	V10.63
206.20	1991	206.2
206.21	1991	V10.63
206.80	1991	206.8
206.81	1991	V10.63
206.90	1991	206.9
206.91	1991	V10.63
207.00	1991	207.0
207.01	1991	V10.69
207.10	1991	207.1
207.11	1991	V10.69
207.20	1991	207.2
207.21	1991	V10.69
207.80	1991	207.8
207.81	1991	V10.69
208.00	1991	208.0
208.01	1991	V10.60
208.10	1991	208.1
208.11	1991	V10.60
208.20	1991	208.2
208.21	1991	V10.60
208.80	1991	208.8
208.81	1991	V10.60

208.90	1991	208.9
208.91	1991	V10.60
237.70-237.72	1990	237.7
250.02	1993	250.90
250.03	1993	250.91
250.12	1993	250.10
250.13	1993	250.11
250.22	1993	250.20
250.23	1993	250.21
250.32	1993	250.30
250.33	1993	250.31
250.42	1993	250.40
250.43	1993	250.41
250.52	1993	250.50
250.53	1993	250.51
250.62	1993	250.60
250.63	1993	250.61
250.72	1993	250.70
250.73	1993	250.71
250.82	1993	250.80
250.83	1993	250.81
250.92	1993	250.90
250.93	1993	250.91
278.00-278.01	1995	278.0
283.10-283.11,283.19	1993	283.1
291.81	1996	291.8
291.89	1996	291.8
293.84	1996	293.89
300.82	1996	300.81
305.1	1994	305.10,305.11,305.12, 305.13 (Codes deleted)
312.81-312.82,381.89	1994	312.8
315.32	1996	315.39

320.81-320.89	1992	320.8
333.92-333.93	1994	333.99
337.20-337.22,337.29	1993	337.9
342.00-342.02	1994	342.0
342.10-342.12	1994	342.1
342.80-342.82	1994	342.9
342.90-342.92	1994	342.9
344.00-344.04,344.09	1994	344.0
344.30-344.32	1994	344.3
344.40-344.42	1994	344.4
344.81,344.89	1993	344.8
345.00-345.01	1989	345.0
345.10-345.11	1989	345.1
345.40-345.41	1989	345.4
345.50-345.51	1989	345.5
345.60-345.61	1989	345.6
345.70-345.71	1989	345.7
345.80-345.81	1989	345.8
345.90-345.91	1989	345.9
346.00-346.01	1992	346.0
346.10-346.11	1992	346.1
346.20-346.21	1992	346.2
346.80-346.81	1992	346.8
346.90-346.91	1992	346.9
355.71	1993	354.4
355.79	1993	355.7
371.82	1992	371.89
374.87	1990	374.89
403.00-403.01	1989	403.0
403.10-403.11	1989	403.1
403.90-403.91	1989	403.9

404.00-404.03	1989	404.0
404.10-404.13	1989	404.1
404.90-404.93	1989	404.9
410.00-410.02	1989	410.0
410.10-410.12	1989	410.1
410.20-410.22	1989	410.2
410.30-410.32	1989	410.3
410.40-410.42	1989	410.4
410.50-410.52	1989	410.5
410.60-410.62	1989	410.6
410.70-410.72	1989	410.7
410.80-410.82	1989	410.8
410.90-410.92	1989	410.9
411.81	1989	410.9
411.89	1989	411.8
414.00-414.01	1994	414.0
414.02-414.03	1994	996.03
414.04-414.05	1996	414.00
415.11	1995	997.3 & 415.1
415.19	1995	415.1
429.71	1989	410.0-410.9
429.79	1989	410.0-410.9
433.00-433.01	1993	433.0
433.10-433.11	1993	433.1
433.20-433.21	1993	433.2
433.30-433.31	1993	433.3
433.80-433.81	1993	433.8
433.90-433.91	1993	433.9
434.00-434.01	1993	434.0
434.10-434.11	1993	434.1
434.90-434.91	1993	434.9
435.3	1995	435.0 & 435.1
437.7	1992	780.9

440.20-440.22	1992	440.2
440.23	1993	440.20 & 707.1 or 707.8 or 707.9
440.24	1993	440.20 & 785.4
440.29	1993	440.20
440.30-440.32	1994	996.1
441.00-441.03	1994	441.0
441.6	1993	441.1 & 441.3
441.7	1993	441.2 & 441.4
446.20-446.21,446.29	1990	446.2
451.82-451.84	1993	451.89
458.2	1995	997.9 & 458.9
466.11	1996	466.1
466.19	1996	466.1
482.30-482.39	1992	482.3
482.81-482.89	1992	482.8
483.0	1992	483
483.1	1996	078.88 & 484.8
483.8	1992	483
491.20-491.21	1991	491.2
493.20	1989	493.90
493.21	1989	493.91
512.1	1994	997.3
518.81	1987	799.1
518.82-518.89	1987	518.8
524.00-524.09	1992	524.0
524.10-524.19	1992	524.1
524.60-524.69	1991	524.6

524.70-524.79	1992	524.8
530.10-530.11, 530.19	1993	530.1
530.81	1993	530.1
530.82-530.84, 530.89	1993	530.8
535.00-535.01	1991	535.0
535.10-535.11	1991	535.1
535.20-535.21	1991	535.2
535.30-535.31	1991	535.3
535.40-535.41	1991	535.4
535.50-535.51	1991	535.5
535.60-535.61	1991	535.6
536.3	1994	536.8
537.82	1990	537.89
537.83	1991	537.82
556.0-556.6	1994	556
556.8-556.9	1994	556
562.02	1991	562.00
562.03	1991	562.01
562.12	1991	562.10
562.13	1991	562.11
569.60-569.61	1995	569.6
569.69	1995	569.6
569.84	1990	557.1
569.85	1991	569.84
574.60	1996	574.00 & 574.30
574.61	1996	574.01 & 574.31
574.70	1996	574.10 & 574.40
574.71	1996	574.11 & 574.41
574.80	1996	574.00 & 574.10 574.30 & 574.40
574.81	1996	574.01 & 574.11 574.31 & 574.41
574.90	1996	574.20 & 574.50
574.91	1996	574.21 & 574.51

575.10-575.11	1996	575.1
575.12	1996	575.0 & 575.1
593.70-593.73	1994	593.7
596.51-596.53	1992	596.5
596.54	1992	344.61
596.55-596.59	1992	596.5
599.81-599.89	1992	599.8
645.0	1991	645
651.30-651.31,651.33	1989	651.00-651.01,651.03
651.40-651.41,651.43	1989	651.10-651.11,651.13
651.50-651.51,651.53	1989	651.20-651.21,651.23
651.60-651.61,651.63	1989	651.80-651.81,651.83
654.20-654.21,654.23	1990	654.2,654.9
654.90-651.94	1990	654.2,654.9
657.0	1991	657
659.60,659.61,659.63	1992	659.80-659.81,659.83
665.10,665.11	1992	665.10,665.11,665.12,665.14

Note: This title for the subcategory, 665.1
has been changed, making the fifth-digit
subclassification, 665.12 and 665.14 invalid.

670.0	1991	670
672.0	1991	672
677	1994	There was no previous code assignment for this code.
690.10	1995	690
690.11	1995	691.8 & 704.8
690.12	1995	691.8
690.18	1995	690
690.8	1995	690

692.72-692.74	1992	692.79
692.82-692.83	1992	692.89
702.0-702.8	1991	702
702.11,702.19	1994	702.1
704.02	1993	704.09
709.00-709.01,709.09	1994	709.0
710.5	1992	288.3,729.1
728.86	1995	729.4
733.10-733.16, 733.19	1993	733.1
738.10-738.19	1992	738.1
747.60-747.64, 747.69	1993	747.6
747.82	1993	747.89
752.51-752.52	1996	752.5
752.61-752.63	1996	752.6
752.64-752.65	1996	752.8
752.69	1996	752.8
753.10-753.17,753.19	1990	753.1
753.20-753.23	1996	753.2
753.29	1996	753.2
758.81	1996	758.8
758.89	1996	758.9
759.81-759.82	1989	759.8
759.83	1994	759.89
759.89	1989	759.8
760.75	1991	760.79
760.76	1994	760.79
764.00-764.09	1988	764.0
764.10-764.19	1988	764.1

764.20-764.29	1988	764.2
764.90-764.99	1988	764.9
765.00-765.09	1988	765.0
765.10-765.19	1988	765.1
780.01-780.02	1992	780.0
780.03	1993	780.01
780.09	1992	780.0
780.57	1992	780.51,780.53
781.8	1994	781.9
787.01-787.03	1994	787.0
787.91	1995	558.9
787.99	1995	787.9
788.20-788.21, 788.29	1993	788.2
788.30-788.39	1992	788.3
788.41-788.43	1993	788.4
788.61-788.62, 788.69	1993	788.6
789.00-789.07, 789.09	1994	789.0
789.30-789.37, 789.39	1994	789.3
789.40-789.47, 789.49	1994	789.4
789.60-789.67, 789.69	1994	789.6
790.91	1993	790.9
790.92	1993	286.9
790.93, 790.99	1993	790.9
795.71	1994	795.8 (Code deleted)
795.79	1994	795.7
795.8	1986	795.7
864.05	1992	864.09
864.15	1992	864.19
909.5	1994	909.9
922.31-922.33	1996	922.3

925.1-925.2	1993	925
989.81-989.84	1995	989.8
989.89	1995	989.8
995.50-995.55	1996	995.5
995.59	1996	995.5
995.60-995.69	1993	995.0
996.04	1994	996.09
996.51-996.59	1987	996.5
996.60-996.69	1989	996.6
996.70-996.79	1989	996.7
996.80-996.89	1987	996.8
996.85	1990	996.8
996.86	1987	996.8
996.89	1987	996.8
997.00-997.01	1995	997.0
997.02	1995	997.9 & 430-434, 436
997.09	1995	997.0
997.91	1995	997.9
997.99	1995	997.9
998.11-998.12	1996	998.1
998.13	1996	998.89
998.51	1996	998.5
998.59	1996	998.5
998.81-998.82, 998.89	1994	998.8
998.83	1996	998.89
V03.81-V03.82, V03.89	1994	V03.8
V05.3-V05.4	1993	V05.8
V06.5-V06.6	1994	V06.8
V07.31,V07.39	1994	V07.3
V07.4	1992	V07.8

V08	1994	044.9, 795.8 (Codes deleted)
V09.0-V09.91	1993	There were no previous code assignments for these codes.
V12.00-V12.03, V12.09	1994	V12.0
V12.50-V12.52	1995	V12.5
V12.59	1995	V12.5
V12.70-V12.72, V12.79	1994	V12.7
V13.00-V13.01, V13.09	1994	V13.0
V15.41-V15.42	1996	V15.4
V15.49	1996	V15.4
V15.82	1994	305.13 (Codes deleted)
V15.84-V15.86	1995	V15.89
V23.7	1989	V23.8
V25.43	1992	V25.49
V25.5	1992	V25.8
V29.0-V29.1, V29.8	1992	V71.8
V29.2	1994	V29.8
(Note: Codes V29.3-V29.7 have not been assigned yet.)		
V29.9	1992	V71.9
V30.00-V30.01	1989	V30.0
V31.00-V31.01	1989	V31.0
V32.00-V32.01	1989	V32.0
V33.00-V33.01	1989	V33.0
V34.00-V34.01	1989	V34.0
V35.00-V35.01	1989	V35.0
V36.00-V36.01	1989	V36.0
V37.00-V37.01	1989	V37.0
V39.00-V39.0l	1989	V39.0
V43.60-V43.66, V43.69	1994	V43.6
V43.81-V43.82	1995	V43.8
V43.89	1995	V43.8

V45.00	1994	V45.89
V45.01	1994	V45.0
V45.02, V45.09	1994	V45.89
V45.51	1994	V45.5
V45.52, V45.59	1994	V45.89
V45.82	1994	V45.89
V45.83	1995	V45.89
V49.60-V49.67	1994	V49.5
V49.70-V49.77	1994	V49.5
V50.41-V50.42, V50.49	1994	V50.8
V53.31	1994	V53.3
V53.32, V53.39	1994	V53.9
V56.1	1995	V58.89
V57.21-V57.22	1994	V57.2
V58.41, V58.49	1994	V58.4
V58.61	1995	V67.51
V58.69	1995	V67.51
V58.81, V58.89	1994	V58.8
V58.82	1995	V58.89
V59.01-V59.02	1995	V59.0
V59.09	1995	V59.0
V59.6	1995	V59.8
V61.10-V61.12	1996	V61.1
V61.22	1996	V61.21
V62.83	1996	V65.49
V65.40-V65.45, V65.49	1994	V65.4
V66.7	1996	No previous code assignment.
V69.0-V69.3	1994	No previous code assignments.
V69.8-V69.9	1994	No previous code assignments.

V72.81-V72.85	1993	V72.8
V73.88-V73.89	1993	V73.8
V73.98-V73.99	1993	V73.9
E854.8	1995	E858.8
E869.4	1994	E869.8
E880.1	1995	E884.9
E884.3-E884.4	1995	E884.2
E884.5-E884.6	1995	E884.9
E906.5	1995	E906.3
E908.0-E908.4	1995	E908
E908.8-E908.9	1995	E908
E909.0-E909.4	1995	E909
E909.8-E909.9	1995	E909
E920.5	1995	E920.4
E924.2	1995	E924.0
E967.2	1996	E967.0
E967.3	1996	No previous code assignment.
E967.4-E967.8	1996	E967.1
E968.5	1995	E968.8

Procedure codes

Current code(s) assignment	Effective October 1	Previous code(s) assignment
02.96	1992	89.19
03.90	1987	03.99 (Insertion of Catheter)
05.25	1995	39.7
11.75	1989	11.79
11.76	1989	11.62
20.96-20.98	1986	20.95
22.12	1988	22.11
26.12	1988	26.11
29.31	1991	83.02
29.32	1991	29.3
29.33	1991	29.3
29.39	1991	29.3
31.45	1988	31.43-31.44
31.95	1989	31.75
32.01	1989	32.0
32.09	1989	32.0
32.22	1995	32.29, 32.9
32.28	1989	32.29
33.27	1987	33.22 + 33.27
33.28	1987	33.27
33.29	1987	33.28-33.29
33.50	1995	33.5
33.51	1995	33.5
33.52	1995	33.5
33.6	1990	33.5 + 37.5
34.05	1994	34.99
35.84	1988	35.82

35.96	1986	35.03
36.00-36.03	1986	36.0
36.04	1986	39.97
36.05	1987	36.01
36.05	1986	36.01 (1), 36.02
36.06	1995	36.01, 36.02, 36.03, 36.05
36.09	1986	36.0
36.09	1991	36.00 (Code deleted)
36.17	1996	36.19
37.26-37.27	1988	37.29
37.34	1988	37.33
37.65	1995	37.62
37.66	1995	37.62
37.70 (Leads only)	1987	(Leads/Device) 37.70
37.71-37.72 (Leads only)	1987	(Leads/Device) 37.74
37.73 (Leads only)	1987	(Leads/Device) 37.73
37.74 (Leads only)	1987	(Leads/Device) 37.76
37.75 (Leads only)	1987	(Leads/Device) 37.89
37.76 (Leads only)	1987	(Leads/Device) 37.81
37.77 (Leads only)	1987	(Leads/Device) 37.83-37.84
37.78	1987	37.71-37.72
37.79	1987	86.09
37.80-37.87	1992	89.49 (2)
37.80 (Device only)	1987	(Leads/Device) 37.73-37.77
37.81 (Device only)	1987	(Leads/Device) 37.73-37.77
37.82 (Device only)	1987	(Leads/Device) 37.73-37.77
37.83 (Device only)	1987	(Leads/Device) 37.73-37.77
37.85-37.87	1987	37.85
37.89	1987	37.86+37.89
37.94-37.98	1986	37.99
38.22	1986	38.29
38.44 (Abdominal Aorta Only)	1986	38.44 (Entire Aorta)
38.45 (Thoracic Aorta Added)	1986	38.44-38.45
38.95	1989	38.93
39.28	1991	39.29

39.50	1995	39.59
39.65	1988	39.61
39.66	1990	39.65
39.90	1996	39.50
41.00-41.03	1988	41.0
41.04	1994	99.79
42.25	1988	42.24
42.33	1989	42.32, 42.39
42.33	1990	42.91
43.11	1989	43.1
43.19	1989	43.1, 43.2
43.41	1989	43.41,43.49
44.21	1986	44.2
44.22	1986	44.99
44.29	1986	44.2
44.43	1989	43.49,45.32
44.44	1989	38.86
44.49	1989	43.0
44.93-44.94	1986	44.99
45.16	1988	45.14 (45.15 before 1987)
45.30	1989	45.31,45.32
45.42	1988	45.41
45.43	1989	45.49
45.75 (Hartmann Resection Added)	1988	48.66 (Code deleted)
45.95	1987	45.93
46.13	1992	46.12 (Code deleted)
46.32	1989	46.39
46.85	1989	46.99
47.01	1996	47.0
47.09	1996	47.0
47.11	1996	47.1
47.19	1996	47.1
48.36	1995	45.42

49.31	1989	49.3
49.39	1989	49.3
51.10	1989	51.97
51.11	1989	51.11,51.97
51.14	1989	51.12
51.15	1989	51.97
51.21	1996	51.22, 51.23
51.22	1991	51.21 (Code deleted),51.22
51.23	1991	51.22
51.24	1994	51.22, 51.23
51.64	1989	51.69
51.84-51.88	1989	51.97
51.97	1986	52.91,51.99, or 51.82
51.98	1986	51.99
52.13	1989	51.97,52.91
52.14	1989	52.11
52.21	1989	52.2
52.22	1989	52.2
52.84	1996	99.29
52.85	1996	99.29
52.86	1996	99.29
52.93	1989	52.93 + 52.91
52.94	1989	52.09
52.97	1989	52.91
52.98	1989	52.91
52.99	1989	52.93,52.94,52.99
54.24	1987	54.23
54.25	1993	54.98
55.03-55.04	1986	55.02
56.33-56.34	1987	56.33
56.35	1987	45.12

57.17-57.18	1989	57.21
57.22	1989	57.22,57.82
58.31	1990	58.3
58.39	1990	58.3
58.93	1986	57.99
59.03	1996	59.02
59.12	1996	59.11
59.72	1995	59.79
59.96	1986	59.95
60.21	1995	60.2
60.29	1995	60.2
60.95	1991	60.99
64.97	1986	64.95
65.01	1996	65.0
65.09	1996	65.0
65.13	1996	65.12
65.14	1996	65.19
65.23	1996	65.21
65.24	1996	65.22
65.25	1996	65.29
65.31	1996	65.3
65.39	1996	65.3
65.41	1996	65.4
65.49	1996	65.4
65.53	1996	65.51
65.54	1996	65.52
65.63	1996	65.61
65.64	1996	65.62
65.74	1996	65.71
65.75	1996	65.72
65.76	1996	65.73
65.81	1996	65.8
65.89	1996	65.8
66.01	1992	66.0
66.02	1992	66.73

68.15	1987	68.14
68.16	1987	68.13
68.23	1996	68.29
68.51	1996	68.5
68.59	1996	68.5
68.9	1992	68.4
74.3	1992	69.11 (Code deleted)
77.56	1989	77.89,78.49,81.18
77.57	1989	77.89,80.48,81.18,83.85
77.58	1989	77.59,81.18
78.10	1991	78.40
78.11	1991	78.41
78.12	1991	78.42
78.13	1991	78.43
78.14	1991	78.44
78.15	1991	78.45
78.16	1991	78.46
78.17	1991	78.47
78.18	1991	78.48
78.19	1991	78.49
78.20	1991	78.10,78.20,78.30
78.21 (Invalid code)	1991	78.11,78.31
78.22	1991	78.12,78.22,78.32
78.23	1991	78.13,78.23,78.33
78.24	1991	78.14,78.34
78.25	1991	78.15,78.25,78.35
78.27	1991	78.17,78.27,78.37
78.28	1991	78.18,78.38
78.29	1991	78.11,78.16,78.19,78.29,78.39
78.39	1991	78.31
78.90 (3)	1987	78.40
78.91 (3)	1987	78.41
78.92 (3)	1987	78.42
78.93 (3)	1987	78.43
78.94 (3)	1987	78.44
78.95 (3)	1987	78.45
78.96 (3)	1987	78.46
78.97 (3)	1987	78.47

78.98 (3)	1987	78.48
78.99 (3)	1987	78.49
80.50-80.59	1986	80.5
81.03	1989	81.02
81.04-81.05	1989	81.03,81.04,81.05
81.06-81.07	1989	81.06,81.07
81.08	1989	81.06,81.07,81.08
81.09	1989	81.08
81.40	1989	81.69
81.51	1989	81.51,81.59
81.52	1989	81.61,81.62,81.63,81.64
81.53	1989	81.51,81.59,81.61,81.62, 81.63,81.64
81.54-81.55	1989	81.41
81.56	1989	81.48
81.57	1989	81.31,81.39
81.59	1989	81.39
81.72	1989	81.79
81.73-81.74	1989	81.86
81.75	1989	81.87
81.79	1989	81.79,81.87
81.80	1989	81.81
81.97	1992	81.59
85.95	1987	85.99
85.96	1987	85.99
86.06	1987	86.09
86.07	1990	86.09
86.27	1986	86.22-86.23
86.28	1988	86.22
86.93	1987	86.89
88.90	1986	88.39
88.91	1986	89.15
88.92	1986	89.39
88.93	1986	89.15
88.94	1986	89.39
88.95	1986	89.29
88.97	1989	88.99
88.98	1989	88.90

88.99	1986	89.39
89.10	1989	89.15
89.17-89.18	1988	89.15
89.19	1989	89.15
89.50	1991	89.54
92.3	1995	01.59, 04.07, 07.63, 07.68
93.90	1988	93.92
94.61-94.69	1989	94.25
96.6	1986	96.35
96.70	1991	93.92 (Code deleted)
96.71	1991	93.92 (Code deleted)
96.72	1991	93.92 (Code deleted)
97.05	1989	51.97
98.51-98.52	1989	59.96 (Code deleted)
98.59	1989	59.96 (Code deleted)
99.00	1995	99.02
99.15	1986	99.29
99.28	1994	99.25
99.71-99.79 (4)	1988	99.70
99.85	1987	93.35
99.86	1987	93.39
99.88	1988	99.83

(1) Before October 1986 contents of current code 36.05 would have
 been assigned to 36.0.

(2) Code 89.49 deleted; this procedure is included in the code for
 pacemaker insertion/replacement.

(3) Codes 78.90-78.99 were retitled as "Insertion of bone growth
 stimulator" in October 1987; the previous contents of codes
 78.90-78.99 were reassigned to codes 78.40-78.49.

(4) Codes 99.71-99.79 were deleted in October 1987; their contents
 were not transferred elsewhere. In the October 1988 revision,

codes 99.71-99.79 were reclassified as "Therapeutic apheresis."

APPENDIX C

National Hospital Discharge Survey statistics are used to produce rates of hospital utilization for the civilian population of the United States. In order to accomplish this, estimates of the U.S. civilian resident population for 1997 are provided on a separate diskette accompanying this documentation. These estimates were provided by the U. S. Bureau of the Census and are consistent with the population estimates published in PPL-91R (U. S. Population Estimates by Age, Sex, Race and Hispanic Origin: 1990-1997). They have been adjusted for net underenumeration using the 1990 National Population Adjustment Matrix. NOTE THAT PRIOR TO THE 1997 DATA YEAR, CENSUS ESTIMATES OF THE CIVILIAN POPULATION PROVIDED WITH THE NHDS PUBLIC USE DATA TAPE DOCUMENTATION WERE NOT ADJUSTED FOR THE UNDERCOUNT.

The file names and their contents are as follows:

TABLE_A.WK4   ---   Adjusted Civilian Population, by Sex, Age Group, Geographic Region and Race: United States, July 1, 1997

TABLE_B.WK4   ---   Adjusted Civilian Population of the United States, July 1, 1997: Estimates by Age Group, Sex, and Region

TABLE_C.WK4   ---   Adjusted Civilian Population of the United States, July 1, 1997: Estimates by Age, Sex, and Race

Since 1981, NCHS has used the civilian resident population to calculate rates of hospital utilization. The civilian resident population was determined to be more appropriate than the civilian noninstitutional population because persons in institutions, for example nursing home patients, are hospitalized when necessary.

BASIC DATA FOR NEWBORN INFANTS, Non-Medical Variables

	UNWEIGHTED N	WEIGHTED ESTIMATE
SURVEY YEAR		
97	33,612	3,789,839
UNITS FOR AGE		
1 = Years	0	0
2 = Months	0	0
3 = Days	33,612	3,789,839
AGE		
1 = Under 15	33,612	3,789,839
2 = 15-44	0	0
3 = 45-64	0	0
4 = 65 and Up	0	0
SEX		
1 = Male	17,193	1,931,256
2 = Female	16,419	1,858,583
RACE		
1 = White	17,278	2,161,166
2 = Black	4,154	461,685
3 = AmInd/Eskimo	134	17,943
4 = Asian/PacIsland	862	100,455
5 = Other	1,930	216,146
9 = Race Not Stated	9,254	832,444
MARITAL STATUS		
1 = Married	0	0
2 = Single	10,783	2,392,001
3 = Widowed	0	0
4 = Divorced	0	0
5 = Separated	0	0
9 = Not Stated	22,829	1,397,838
DISCHARGE STATUS		
1 = Routine/Home	32,409	3,624,857
2 = Left Ag Medical Advice	11	2,182
3 = Transferred to Shrt-Term Facility	385	50,088
4 = Transferred to Long-Term Care	44	5,735
5 = Alive, Not Stated	537	61,357
6 = Dead	117	12,835
9 = Status Not Stated	109	32,785
LENGTH OF STAY FLAG		

	UNWEIGHTED N	WEIGHTED ESTIMATE
0 = Less than 1 day	529	67,707
1 = 1 day or more	33,083	3,722,132

	UNWEIGHTED N	WEIGHTED ESTIMATE
REGION		
1 = NorthEast	5,778	604,959
2 = MidWest	10,423	850,556
3 = South	11,323	1,423,281
4 = West	6,088	911,043
BEDSIZE GROUP		
1 = 6-99	2,883	655,571
2 = 100-199	7,623	1,089,232
3 = 200-299	8,268	679,540
4 = 300-499	10,181	961,071
5 = 500 and Up	4,657	404,425
HOSPITAL OWNERSHIP GROUP		
1 = Proprietary	2,134	471,682
2 = Government	2,844	459,336
3 = Nonprofit	28,634	2,858,821
EXPECTED SOURCE OF PAYMENT, PRINCIPAL		
0 = No Charge	103	14,170
1 = Workers Comp	16	1,521
2 = Medicare	43	9,548
3 = Medicaid	9,593	1,223,610
4 = Other Govt Pymt	283	44,658
5 = Blue Cross	3,362	380,097
6 = Other Priv/Comm	14,610	1,656,054
7 = Self-Pay	1,968	233,284
8 = Other	3,398	171,212
9 = Pymt Not Stated	236	55,685
ADMISSION MONTH		
01 = January	2,312	275,521
02 = February	2,169	261,540
03 = March	2,376	282,192
04 = April	2,361	284,308
05 = May	2,417	292,699
06 = June	2,370	282,342
07 = July	2,571	300,305
08 = August	2,541	306,075
09 = September	2,493	283,344
10 = October	2,361	283,070

11 = November	2,200	278,983
12 = December	2,373	294,390
99 = Missing	5,068	365,070

BASIC DATA FOR NON-NEWBORNS, Non-Medical Variables

	UNWEIGHTED N	WEIGHTED ESTIMATE
SURVEY YEAR		
97	266,852	30,914,167
UNITS FOR AGE		
1 = Years	258,210	30,139,011
2 = Months	6,126	572,340
3 = Days	2,516	202,816
AGE		
Under 15	25,859	2,311,503
15-44	88,197	10,029,526
45-64	54,652	6,377,224
65 and Up	98,144	12,195,914
SEX		
1 = Male	105,713	12,267,559
2 = Female	161,139	18,646,608
RACE		
1 = White	151,694	19,971,406
2 = Black	35,778	3,689,251
3 = AmInd/Eskimo	812	120,584
4 = Asian/PacIsland	3,555	388,162
5 = Other	8,744	1,003,312
9 = Race Not Stated	66,269	5,741,452
MARITAL STATUS		
1 = Married	39,805	9,051,303
2 = Single	24,194	5,370,731
3 = Widowed	13,113	3,093,781
4 = Divorced	4,663	1,087,456
5 = Separated	926	168,746
9 = Not Stated	184,151	12,142,150
DISCHARGE STATUS		
1 = Routine/Home	212,232	24,436,142
2 = Left Ag Medical Advice	2,030	219,521
3 = Transferred to Shrt-Term Facility	7,703	1,206,021
4 = Transferred to Long-Term Care	21,547	2,544,501

	UNWEIGHTED N	WEIGHTED ESTIMATE
5 = Alive, Not Stated	15,481	1,482,359
6 = Dead	6,803	782,838
9 = Status Not Stated	1,056	242,785
LENGTH OF STAY FLAG		
0 = Less than 1 day	5,299	689,528
1 = 1 day or more	261,553	30,224,639

	UNWEIGHTED N	WEIGHTED ESTIMATE
REGION		
1 = NorthEast	58,519	6,679,107
2 = MidWest	82,671	7,234,030
3 = South	91,519	11,445,029
4 = West	34,143	5,556,001
BEDSIZE GROUP		
1 = 6-99	30,490	6,403,367
2 = 100-199	62,770	8,135,109
3 = 200-299	58,230	5,849,513
4 = 300-499	80,141	7,022,870
5 = 500 and Up	35,221	3,503,308
HOSPITAL OWNERSHIP GROUP		
1 = Proprietary	17,408	3,395,267
2 = Government	24,678	3,662,500
3 = Nonprofit	224,766	23,856,400
EXPECTED SOURCE OF PAYMENT, PRINCIPAL		
0 = No Charge	728	98,497
1 = Workers Comp	1,793	230,175
2 = Medicare	98,775	12,253,599
3 = Medicaid	37,389	4,379,531
4 = Other Govt Pymt	2,554	367,744
5 = Blue Cross	19,490	2,216,013
6 = Other Priv/Comm	72,801	8,618,340
7 = Self-Pay	12,919	1,487,100
8 = Other	18,701	958,139
9 = Pymt Not Stated	1,702	305,029
ADMISSION MONTH		
01 = January	19,446	2,508,228
02 = February	17,874	2,260,850
03 = March	19,398	2,479,300
04 = April	18,754	2,361,873
05 = May	18,549	2,383,849

06 = June	18,030	2,289,355
07 = July	18,537	2,327,633
08 = August	18,142	2,222,167
09 = September	18,754	2,283,817
10 = October	18,676	2,314,296
11 = November	17,234	2,128,485
12 = December	18,907	2,358,700
99 = Missing	44,551	2,995,614

FIRST-LISTED DIAGNOSES FOR NEWBORN INFANTS, by ICD9-CM Chapter

	UNWEIGHTED N	WEIGHTED ESTIMATE
VCODES	33,612	3,789,839
CHAPTER 1	0	0
CHAPTER 2	0	0
CHAPTER 3	0	0
CHAPTER 4	0	0
CHAPTER 5	0	0
CHAPTER 6	0	0
CHAPTER 7	0	0
CHAPTER 8	0	0
CHAPTER 9	0	0
CHAPTER 10	0	0
CHAPTER 11	0	0
CHAPTER 12	0	0
CHAPTER 13	0	0
CHAPTER 14	0	0
CHAPTER 15	0	0
CHAPTER 16	0	0
CHAPTER 17	0	0

FIRST-LISTED DIAGNOSES FOR NON-NEWBORNS, by ICD9-CM Chapter

	UNWEIGHTED N	WEIGHTED ESTIMATE
VCODES	40,114	4,317,536
CHAPTER 1	7,874	853,472
CHAPTER 2	15,356	1,748,574
CHAPTER 3	11,052	1,298,546
CHAPTER 4	3,473	372,732
CHAPTER 5	16,922	1,963,955
CHAPTER 6	4,755	553,984
CHAPTER 7	51,429	6,097,056
CHAPTER 8	28,590	3,474,793
CHAPTER 9	24,802	2,997,914
CHAPTER 10	14,044	1,694,207
CHAPTER 11	4,796	500,197
CHAPTER 12	3,879	453,568
CHAPTER 13	12,691	1,499,946
CHAPTER 14	2,009	155,301
CHAPTER 15	1,670	137,580

CHAPTER 16	2,158	274,389
CHAPTER 17	21,238	2,520,417

WEIGHTED FREQUENCIES - ALL-LISTED DIAGNOSES, by ICD9-CM Chapter

	NEWBORN INFANTS	NON-NEWBORNS
ALL	7,245,315	129,657,636
ECODES	5,768	3,584,938
VCODES	4,521,359	9,900,945
CHAPTER 1	37,956	3,460,434
CHAPTER 2	12,911	4,333,299
CHAPTER 3	12,694	12,777,158
CHAPTER 4	6,019	4,053,246
CHAPTER 5	451	7,958,801
CHAPTER 6	13,661	3,542,537
CHAPTER 7	17,135	27,462,634
CHAPTER 8	13,030	9,961,729
CHAPTER 9	21,580	8,176,753
CHAPTER 10	31,473	6,935,224
CHAPTER 11	0	8,246,897
CHAPTER 12	22,596	1,579,259
CHAPTER 13	10,988	4,568,309
CHAPTER 14	235,665	560,539
CHAPTER 15	2,221,071	368,115
CHAPTER 16	53,596	6,295,830
CHAPTER 17	7,362	5,890,989

WEIGHTED FREQUENCIES - ALL-LISTED PROCEDURES, by ICD9-CM Chapter

	NEWBORN INFANTS	NON-NEWBORNS
ALL	2,498,324	40,509,419
CHAPTER 1	48,694	1,042,944
CHAPTER 2	0	104,207
CHAPTER 3	760	134,911
CHAPTER 4	346	47,200
CHAPTER 5	2,966	311,224
CHAPTER 6	12,486	1,015,624
CHAPTER 7	92,858	5,382,095
CHAPTER 8	255	342,317
CHAPTER 9	12,152	5,052,040
CHAPTER 10	4,251	989,743
CHAPTER 11	1,213,323	316,863

CHAPTER 12	253	2,067,680
CHAPTER 13	0	6,682,247
CHAPTER 14	1,861	3,172,485
CHAPTER 15	9,893	1,219,594
CHAPTER 16	1,098,226	12,628,245