



H·CUP
HEALTHCARE COST AND UTILIZATION PROJECT

**User Guide for the
1988-2002 NIS Trends Supplemental Files**

September 12, 2006

Table of Contents

| | |
|---|-----|
| Overview | 1 |
| NIS Supplemental Files for Trends Analyses | 2 |
| File Composition..... | 2 |
| File Format | 2 |
| Linkage..... | 2 |
| Obtaining the Data | 2 |
| Data Elements in the NIS Trends Supplemental Files..... | 2 |
| Renamed Data Elements | 2 |
| Recoded Data Elements | 3 |
| New Data Elements..... | 3 |
| Weights for National Trends..... | 3 |
| Handling of Diagnoses | 3 |
| Handling of Procedures | 4 |
| How to Use the NIS Trends Supplemental Files..... | 8 |
| Contents of the NIS-Trends CD-ROMs | 8 |
| Copying the NIS-Trends ASCII Files onto your Computer | 9 |
| Instructions for SAS Users | 9 |
| Step 1 – Organize PC directories | 9 |
| Step 2 – SAS load the NIS-Trends file | 9 |
| Step 3 – Modify SAS Merge program | 9 |
| Step 4 – Run the program | 10 |
| Step 5 – Check the SAS log | 10 |
| A Note on NIS Core Files for 1993 to 1997 | 10 |
| The Resulting SAS Output File..... | 10 |
| Instructions for non-SAS Users | 10 |
| Step 1 – Load the NIS-Trends file into the appropriate format | 10 |
| Step 2 – Rename variables that will be overwritten..... | 11 |
| Step 3 – Merge the NIS-Trends file with the NIS Core File | 11 |
| A Note on NIS Core Files for 1993 to 1997 | 11 |
| The Resulting File..... | 11 |
| Appendix A. Recodes of Trends Variables | A-1 |
| Appendix B. Resulting NIS Merged Files..... | B-1 |

Index of Tables

| | |
|--|---|
| Table 1. Data Elements in the NIS Trends Supplemental File 1988-2002 | 5 |
| Table 2. NIS Trends Supplemental File CD-ROM | 8 |
| Table 3. NIS Trends Supplemental ASCII Files..... | 8 |

OVERVIEW

The Nationwide Inpatient Sample (NIS) is one in a family of databases and software tools developed as part of the Healthcare Cost and Utilization Project (HCUP) and sponsored by the Agency for Healthcare Research and Quality (AHRQ). The NIS is an annual database of hospital inpatient stays. Researchers and policy makers use the NIS to identify, track, and analyze national trends in health care utilization, access, charges, quality, and outcomes. Presently, the NIS is available for each data year from 1988 through 2004.

The NIS contains all-payer data on hospital inpatient stays from states participating in HCUP. The NIS includes *all* discharges from an approximate 20 percent stratified sample of U.S. community hospitals. Several revisions have been made to the NIS sample design since its inception. First, the sampling frame changed over time as more states made their data available to HCUP. The 1988 NIS was drawn from a frame of eight states representing 31 percent of the U.S. population. In contrast, later years of the NIS were drawn from a frame of states representing 85 to 90 percent of the U.S. population. Second, in 1998 the sampling method changed to better reflect the cross-sectional population of hospitals. The hospital stratification variables were redefined, short-term rehabilitation facilities were dropped from the target universe, and sampling preference was no longer given to prior-year NIS hospitals. Third, the definitions and availability of data elements in the NIS changed over time. Analysts who want to use the NIS to estimate trends in patient and hospital outcomes need to adjust for these changes.

The purpose of the NIS Trends Supplemental files (NIS-Trends) is to ease the burden on researchers conducting analyses that span multiple years. A previous study, *Using the HCUP Nationwide Inpatient Sample to Estimate Trends*,¹ evaluated the changes in the NIS design and provided data users with an alternate set of NIS discharge and hospital weights for the 1988-1997 HCUP NIS. The NIS-Trends files build on this earlier work and provide the data user with both the trend weights and data elements that are consistently defined across data years.

Perhaps the most significant changes to the NIS over time were additions of states to the sampling frame. In the first year of the NIS, 1988, data from only eight states, representing 31% of the U.S. population, were available. By 1993, the number of states had doubled to 17, representing 54% of the U.S. population. For the 2004 NIS, data from 37 states, representing 88% of the U.S. population, are included. Consequently, the NIS increasingly covered a greater percentage of the hospital discharge population and became increasingly more representative through the years. ***Based primarily on considerations of coverage, we recommend that trend analyses should exclude the 1988 – 1992 period and begin with 1993.*** Six states were added to the NIS in the 1993 data year tipping the sampling frame over the 50 percent mark in terms of population covered. Additional information on the changes in the NIS design is available in the report, *Using the HCUP Nationwide Inpatient Sample to Estimate Trends*.¹

¹This report is available on the HCUP User Support Website under the Methods Series (<http://www.hcup-us.ahrq.gov/reports/methods.jsp>).

NIS SUPPLEMENTAL FILES FOR TRENDS ANALYSES

There is one NIS-Trends data file for each year from 1988 to 2002. No supplemental file was created for the 2003 NIS because that year served as the base comparison file. The 1988-2002 NIS-Trends files are appropriate for use in conjunction with the complete NIS data files that are available for purchase through the HCUP Central Distributor. The NIS-Trends files do *not* replace the original files.

File Composition

Each NIS-Trends file contains the same number of records as the corresponding NIS Core file. The number of data elements in the yearly NIS-Trends files varies by year. A description of the data elements is provided in a later section of this report.

File Format

The NIS-Trends data are available in fixed-width ASCII formatted files.

Linkage

The NIS-Trends files are to be match-merged with the original NIS Core files using the appropriate record identifier (SEQ in the 1988-1997 files and KEY in the 1998-2002). Sample SAS programs are provided with the NIS-Trends data files.

Obtaining the Data

The NIS-Trends files are available at no charge through the HCUP Central Distributor to users who have already purchased the NIS. To reach the HCUP Central Distributor, please use one of the following contact channels:

- E-mail: HCUPDistributor@ahrq.gov
- Phone (toll free): (866) 556-4287
- FAX: (866) 792-5313.

DATA ELEMENTS IN THE NIS TRENDS SUPPLEMENTAL FILES

The data elements in the NIS-Trends files consist of one of four types: renamed, recoded, new, or weights for national trends.

Renamed Data Elements

In a few cases, a data element in earlier NIS data is identical to a variable in later NIS years, except that the variable name was changed. In these cases, the NIS-Trends file for the earlier years contains the renamed variable that corresponds to later years. For example, in the 1988-2000 NIS, the variable for the encrypted physician identifier for the attending physician was called MDID_S. Starting with the 2001 NIS, this exact information is stored in a variable called MDNUM1_S. The NIS-Trends file for 1988-2000 includes the information stored in MDID_S, but the variable is named MDNUM1_S.

Recoded Data Elements

Sometimes a data element in earlier NIS years is similar to a variable in later NIS years, but the coding scheme of the variable is different. In these cases, the NIS-Trends file for the earlier years contains the recoded variable that is consistent in name and coding to later years. For example, in the 1988-1997 NIS, the variable SEX includes information on the patient's gender. Starting in 1998, the variable FEMALE includes this same information but with a slightly different coding scheme. In the 1988-1997 NIS-Trends, the variable FEMALE is recoded from the variable SEX.

New Data Elements

The later years of the NIS contain data elements that were not included in earlier years. Because these data elements are of analytic use to researchers, the new variables are included in the NIS-Trends, when possible. For example, only the Clinical Classifications Software (CCS) for the principal diagnosis and procedure had been included in the original NIS files for 1988-1997. The CCS categories for secondary diagnoses and procedures are included in the 1988-1997 NIS-Trends files because they were included in later years of the NIS.

Weights for National Trends

Beginning in 1998, NIS weights calculations were changed in order to make national estimates of the number of discharges more accurate. In order to facilitate analysis of trends using multiple years of NIS data, an alternate set of NIS discharge and hospital weights for the 1988-1997 HCUP NIS were developed. These alternative weights were calculated in the same way as the weights for the 1998 and later years of the NIS. The 1988-1997 NIS-Trends files include the weights appropriate for calculating national trend estimates. Refer to Methods Series Report #2005-01 *Using the HCUP Nationwide Inpatient Sample to Estimate Trends*,² for details on the development of these weights.

Handling of Diagnoses

There are two major changes in how diagnoses are handled between the 1988 and the 2003 NIS. The data elements in the NIS-Trends files present users with a consistent set of diagnostic information, corresponding to how diagnoses are handled in the later years.

- *External cause of injury codes (E codes)*. Prior to 2003, E codes are included in the diagnosis array (DXn). Beginning in 2003, E codes are placed in a separate array (ECODEn). The 1988-2002 NIS-Trends files include a diagnosis array (DXn) that excludes E codes and the first four E codes reported on the original record are in a separate array (ECODEn).
- *Invalid and inconsistent diagnoses*. Prior to 1998, invalid and inconsistent diagnoses are retained as reported in the diagnosis array (DXn) and a corresponding array of validity flags (DXV) indicates invalid or inconsistent codes. Beginning in the 1998 data, invalid and inconsistent diagnoses are masked and no validity flags are included in the NIS. Invalid diagnoses are set to "invl" and diagnoses inconsistent with the age or gender of the discharge are set to "incn." The 1988-1997 NIS-Trends files include a diagnosis array in which invalid and inconsistent codes have been masked, just as they are in later years of the NIS.

²This report is available on the HCUP User Support Website under the Methods Series (<http://www.hcup-us.ahrq.gov/reports/methods.jsp>).

The sample merge programs provided with the NIS-Trends data files rename the original diagnosis array (DXn) to (OLDDXn) to eliminate confusion. Users are advised to use the new, consistently coded diagnosis array in the NIS-Trends files.

Handling of Procedures

The handling of invalid and inconsistent procedures changed in 1998. Prior to 1998, invalid and inconsistent procedures are retained as reported in the procedure array (PRn) and a corresponding array of validity flags (PRV) indicates invalid or inconsistent codes. Beginning in the 1998 data, invalid and inconsistent procedures are masked and no validity flags are included in the NIS. Invalid procedures are set to "invl" and procedures inconsistent with the age or gender of the discharge are set to "incn." The 1988-1997 NIS-Trends files include a procedure array in which invalid and inconsistent codes have been masked, just as they are in later years of the NIS.

The sample merge programs provided with the NIS-Trends data files rename the original diagnosis array (PRn) to (OLDPRn) to eliminate confusion. Users are advised to use the new, consistently coded procedure array in the NIS-Trends files.

Table 1 (on the following page) lists the data elements in the NIS-Trends files. Documentation for these data elements is included in the NIS documentation on the HCUP User Support Website (<http://www.hcup-us.ahrq.gov/db/nation/nis/nisdde.jsp>). Specific information on how variables were recoded for the NIS-Trends files is included in Appendix A.

Table 1. Data Elements in the NIS Trends Supplemental File 1988-2002

| | | Data Year (x indicates data element is included in that year's NIS Trends Supplemental file) | | | | | | | | | | | | | |
|--------------------|--|---|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
| Linkage | | | | | | | | | | | | | | | |
| SEQ | Used to link records in the NIS-Trends file to the original 1988-1997 NIS. | x | x | x | x | x | x | x | x | x | x | | | | |
| KEY | Used to link records in the NIS-Trends file to the original 1998-2002 NIS. | | | | | | | | | | | x | x | x | x |
| Demographic | | | | | | | | | | | | | | | |
| AWEEKEND | Recoded from ADAYWK (see Appendix A) | x | x | x | x | x | x | x | x | x | | | | | |
| DISPuniform | Recoded from DISP (see Appendix A) | x | x | x | x | x | x | x | x | x | | | | | |
| ELECTIVE | Recoded from ATYPE (see Appendix A) | x | x | x | x | x | x | x | x | x | x | x | x | x | |
| FEMALE | Recoded from SEX (see Appendix A) | x | x | x | x | x | x | x | x | x | | | | | |
| ZIPINC_Qrtl | Added for 1997-2002 only ³ | | | | | | | | | | x | x | x | x | x |
| Diagnoses | | | | | | | | | | | | | | | |
| DX1-DX15 | For 1988-1997: - Set to "invl" if DXV = 1 - Set to "incn" if DXV = .C For 1988-2002: - Extracted E codes into ECODE array - Packed DX array to eliminate gaps | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| NDX | Recalculated to correspond to updated DX array | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| DXCCS1 | For 1988-1997: - Renamed DCCHPR1 - Set to .A if DXV1 = 1 - Set to .C if DXV1 = .C For 1988-2002: - Removed E code CCS | x | x | x | x | x | x | x | x | x | x | x | x | x | x |

³ Because the data were not available, ZIPINC_Qrtl could not be added for earlier years of the NIS.

| | | | | | | | | | | | | | | | | | | | |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DXCCS2- DXCCS15 | For 1988-1997: - Assigned using CCS software For 1988-2002: - Removed E code CCS | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| ECODE1- ECODE4 | Extracted from DX array. Only the first four occurrences are retained. | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| E_CCS1- E_CCS4 | Assigned using CCS software | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| NECODE | Calculated for ECODE array | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| Procedures | | | | | | | | | | | | | | | | | | | |
| PR1-PR15 | Set to "invl" if PRV = 1. Set to "incn" if PRV = .C. | x | x | x | x | x | x | x | x | x | x | | | | | | | | |
| PRCCS1 | Renamed PCCHPR1 Set to .A if PRVn = 1 Set to .C if PRVn = .C | x | x | x | x | x | x | x | x | x | x | | | | | | | | |
| PRCCS2- PRCCS15 | Assigned using CCS software | x | x | x | x | x | x | x | x | x | x | | | | | | | | |
| Physician Identifiers | | | | | | | | | | | | | | | | | | | |
| MDNUM1_S | Renamed MDID_S | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | | | |
| MDNUM2_S | Renamed SURGID_S | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | | | |
| Hospital Stratifiers | | | | | | | | | | | | | | | | | | | |
| HOSP_ BEDSIZE | Added to be consistent with 1998 forward NIS definition that defines size within U.S. Census region. | x | x | x | x | x | x | x | x | x | x | | | | | | | | |
| HOSP_ CONTROL | Added to be consistent with 1998 forward NIS definition that includes collapsed categories. | x | x | x | x | x | x | x | x | x | x | | | | | | | | |
| HOSP_ LOCATION | Added to be consistent with 1998 forward NIS naming convention. | x | x | x | x | x | x | x | x | x | x | | | | | | | | |
| HOSP_ LOCTEACH | Added to be consistent with 1998 forward NIS definition. Definition of a teaching hospital is broader than H_LOCTCH. More facilities will be categorized as teaching. | x | x | x | x | x | x | x | x | x | x | | | | | | | | |
| HOSP_ REGION | Added to be consistent with 1998 forward NIS naming convention. | x | x | x | x | x | x | x | x | x | x | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | |
|--------------------------------|--|---|---|---|---|---|---|---|---|---|---|--|--|--|--|--|--|--|--|
| HOSP_TEACH | Added to be consistent with 1998 forward NIS definition. Definition of a teaching hospital is broader than H_TCH. More facilities will be categorized as teaching. | x | x | x | x | x | x | x | x | x | x | | | | | | | | |
| Variables for Weighting | | | | | | | | | | | | | | | | | | | |
| DISCWT | Added to be consistent with 1998 forward sampling scheme. Use DISCWT for any analysis of trends that include data years prior to 1998 and data years extending beyond 1998. See NIS Trends Report for details. ⁴ The discharge weight DISCWT_U provided on the 1988-1997 NIS should be used only for a single year analysis. | x | x | x | x | x | x | x | x | x | x | | | | | | | | |
| HOSPWT | Added to be consistent with 1998 forward sampling scheme. See NIS Trends Report for details. | x | x | x | x | x | x | x | x | x | x | | | | | | | | |
| NIS_STRATUM | Renamed STRATUM. Appropriate for use with trends discharge weight (DISCWT) | x | x | x | x | x | x | x | x | x | x | | | | | | | | |
| TOTAL_DISC | Renamed TOTDSCHG | x | x | x | x | x | x | x | x | x | x | | | | | | | | |

⁴ This report is available on the HCUP User Support Website under the Methods Series (<http://www.hcup-us.ahrq.gov/reports/methods.jsp>).

HOW TO USE THE NIS TRENDS SUPPLEMENTAL FILES

The NIS-Trends files were designed to be merged with the NIS Core files to produce a dataset containing the complete set of variables from both sources. The NIS-Trends CD-ROMs contain the NIS-Trends data files, documentation, load programs for SAS and SPSS, and SAS programs to merge the files. The NIS-Trends CD-ROMs do not include the NIS Core files, which must be obtained separately from the HCUP Central Distributor.

Contents of the NIS-Trends CD-ROMs

Each year of the NIS-Trends file is stored on a separate CD-ROM. Each CD-ROM includes the following directories.

Table 2. NIS Trends Supplemental File CD-ROM

| Directory | Contents |
|-----------------------|--|
| Root | User Guide for NIS Trends Files – <i>this document</i> |
| /NIS Trends Data | Fixed-width ASCII file for <u>one year</u> of the NIS-Trends file compressed into ZIP format |
| /SAS Load Programs | SAS load programs for all years of the NIS-Trends file. There is one program per year. |
| /SPSS Load Programs | SPSS load programs for all years of the NIS-Trends file.. There is one program per year. |
| /Sample Merge Program | Sample merge program written in SAS. |

The NIS-Trends data files are described in the table below.

Table 3. NIS Trends Supplemental ASCII Files

| Year | File Name | ASCII File Size | Number of Variables | Number of Records |
|------|----------------------------------|-----------------|---------------------|-------------------|
| 1988 | NIS_Trends_Supplemental_1988.ASC | 1.86 GB | 87 | 5,265,756 |
| 1989 | NIS_Trends_Supplemental_1989.ASC | 2.16 GB | 87 | 6,110,064 |
| 1990 | NIS_Trends_Supplemental_1990.ASC | 2.21 GB | 87 | 6,268,515 |
| 1991 | NIS_Trends_Supplemental_1991.ASC | 2.17 GB | 87 | 6,156,188 |
| 1992 | NIS_Trends_Supplemental_1992.ASC | 2.19 GB | 87 | 6,195,744 |
| 1993 | NIS_Trends_Supplemental_1993.ASC | 2.31 GB | 87 | 6,538,976 |
| 1994 | NIS_Trends_Supplemental_1994.ASC | 2.25 GB | 87 | 6,385,011 |
| 1995 | NIS_Trends_Supplemental_1995.ASC | 2.37 GB | 87 | 6,714,935 |
| 1996 | NIS_Trends_Supplemental_1996.ASC | 2.31 GB | 87 | 6,542,069 |
| 1997 | NIS_Trends_Supplemental_1997.ASC | 2.54 GB | 88 | 7,148,420 |
| 1998 | NIS_Trends_Supplemental_1998.ASC | 1.44 GB | 45 | 6,827,350 |
| 1999 | NIS_Trends_Supplemental_1999.ASC | 1.52 GB | 45 | 7,198,929 |
| 2000 | NIS_Trends_Supplemental_2000.ASC | 1.58 GB | 45 | 7,450,992 |
| 2001 | NIS_Trends_Supplemental_2001.ASC | 1.36 GB | 43 | 7,452,727 |
| 2002 | NIS_Trends_Supplemental_2002.ASC | 1.41 GB | 42 | 7,853,982 |

Copying the NIS-Trends ASCII Files onto your Computer

Because of the size of the NIS-Trends files, the data are distributed as self-extracting PKZIP compressed files. To decompress the data, you should follow these steps:

- Create a directory for the NIS-Trends file on your hard drive.
- Copy the self-extracting data files from the NIS-Trends CD-ROM into the new directory.
- Unzip the data file by running the corresponding *.exe file.
 - Type the file name within DOS or click on the name within Windows Explorer.
 - Edit the name of the "Unzip To Folder" in the WinZip Self-Extractor dialog to select the desired destination directory for the extracted file.
 - Click on the "Unzip" button.

The ASCII data files will then be uncompressed into this directory. After the files are uncompressed, the *.exe files can be deleted.

Instructions for SAS Users

Merging a NIS-Trends file with a NIS Core file requires five steps:

- **Step 1 – Organize PC directories.** If using the supplied SAS programs to combine the NIS-Trends data with the NIS Core files, the NIS-Trends SAS file and the Core file for a given year must be placed in the same directory. Place the provided SAS programs in a convenient directory.
- **Step 2 – SAS load the NIS-Trends file.** Use the provided SAS load programs to load the ASCII files into SAS format.
- **Step 3 – Modify SAS Merge program.** Two SAS programs are provided:
 - NIS_Trends_Supplemental_Merge_Driver.sas is modified by the user, as described below, to indicate the appropriate year and the location of the input files.
 - NIS_Trends_Supplemental_Merge_Macro.sas is called by the driver program and should not be modified by the user.

The SAS program NIS_Trends_Supplemental_Merge_Driver.sas must be modified to reflect the appropriate year, directories, and file names. There are six macro variables that must be updated in order for the program to run without error:

| Macro Variable Statement | Description | Allowable Values |
|--------------------------|---|--|
| %LET year_ = | Year to be processed | 1988 to 2002 |
| %LET corepath_ = | Directory on user's PC where the core file <i>and</i> the NIS-Trends transport file are stored. | A valid PC directory path name such as c:\Trends\1988\Input. |

| Macro Variable Statement | Description | Allowable Values |
|---|--|--|
| %LET corename_ = | Name of the NIS Core file to be used. | The valid name of a SAS data file containing the NIS Core data. Do not specify the file extension or directory path. |
| %LET mrgpath_ = | Directory on user's PC where the merged output file will be stored. | A valid PC directory path name such as c:\Trends\1988\Output. |
| %LET mrgname_ = | Name of the output file created by the program | Any valid file name, without directory path or file extension |
| %INCLUDE "path/ NIS_Trends_Supplemental_Macro.sas" | Change <i>path</i> to the directory path of the supplied program, (usually the same location as the Driver program, but may be different, if desired). | |

- **Step 4 – Run the program.** Depending on CPU and disk subsystem speed, it may take from 20 to 90 minutes to process each year of data.
- **Step 5 – Check the SAS log.** The programs should run without errors. Some warnings are acceptable under certain circumstances (see below). It is important to insure that the NIS-Trends transport file and the NIS Core file have the same number of observations and that the number of observations is identical to the “Number of Records” listed in the table above.

A Note on NIS Core Files for 1993 to 1997

For most years, NIS Core files are a single file containing all required variables. However the 1993 to 1997 NIS are stored in multiple files (e.g. Core A, Core B, Dx, Pr, etc.) The provided SAS programs will accept only a single input Core file. Therefore, the user may wish to combine the separate files of the NIS Core before adding the NIS-trends data. Alternately, it is possible to use the main Core file (“Core A”) alone with the supplied programs. Reformatted diagnosis and procedure arrays will be added to the Core A file. If this approach is chosen, the user may notice warnings on the SAS log reading: “Not all variable names in the RENAME list ...were used”. These warnings are not critical.

The Resulting SAS Output File

The file output by the SAS programs will contain all variables from the NIS Core and all variables from the NIS Trends Supplemental file. No variables are deleted, but the original diagnosis and procedure arrays will be renamed. The data elements in the resulting SAS output file should agree with Appendix B, Resulting NIS Merged Files.

Instructions for non-SAS Users

Merging a NIS-Trends file with a NIS Core file requires two main steps:

- **Step 1 – Load the NIS-Trends file into the appropriate format.** SPSS users may utilize the provided SPSS load programs to convert the ASCII files into SPSS format.

- **Step 2 – Rename variables that will be overwritten.** The diagnoses array (DX1-DX15) for 1988-2002 and the procedure array (PR1-PR15) for 1988-1997 will be replaced by the updated versions. If you want to retain the old versions, please rename DX1-DX15 to oldDX1-oldDX15 and NDX to oldNDX. Prior to 1998, also rename PR1-PR15 to oldPR1-oldPR15.
- **Step 3 – Merge the NIS-Trends file with the NIS Core File.** The NIS-Trends files are to be match-merged with the original NIS Core files using the appropriate record identifier. The merge key varies by data year:
 - The data element SEQ should be used to match-merge the 1988-1997 files
 - The data element KEY should be used to match-merge the 1998-2002 files.

A Note on NIS Core Files for 1993 to 1997

For most years, NIS Core files are a single file containing all required variables. However the 1993 to 1997 NIS are stored in multiple files (e.g. Core A, Core B, Dx, Pr, etc.) Users may wish to combine the separate files of the NIS Core before adding the NIS-trends data. Alternately, it is possible to merge the main Core file (“Core A”) with the NIS-Trends file. Reformatted diagnosis and procedure arrays will be added to the Core A file.

The Resulting File

The file resulting from the match-merge will contain all of the data elements from the NIS Core and all of the data elements from the NIS Trends Supplemental file. No variables are deleted. The data elements in the resulting file should agree with Appendix B, Resulting NIS Merged Files.

Appendix A.
Recodes of Trends Variables

APPENDIX A. RECODES OF TRENDS VARIABLES

| ADAYWK | | AWEKEND | |
|--------|-------------------------|---------|------------------------------|
| Value | Description | Value | Description |
| 1 | Sunday | 1 | Admission on Saturday-Sunday |
| 7 | Saturday | | |
| 2 | Monday | 0 | Admission on Monday-Friday |
| 3 | Tuesday | | |
| 4 | Wednesday | | |
| 5 | Thursday | | |
| 6 | Friday | | |
| . | Missing | | |
| .B | Unavailable from source | | |
| .A | Invalid | .A | Invalid |

| DISP | | DISPUNIFORM | |
|-------|---|-------------|---|
| Value | Description | Value | Description |
| 1 | Routine | 1 | Routine |
| 2 | Short-term hospital | 2 | Transfer to short term hospital |
| 3 | Skilled Nursing Facility (SNF) | 5 | Transfer Other: Includes Skilled Nursing Facility (SNF), Intermediate Care Facility (ICF), Another Type of Facility |
| 4 | Intermediate Care Facility (ICF) | | |
| 5 | Another type of facility | | |
| 6 | Home Health Care (HHC) | 6 | Home Health Care (HHC) |
| 7 | Against medical advice (AMA) | 7 | Against medical advice (AMA) |
| 20 | Died | 20 | Died in hospital |
| . | Missing | . | Missing |
| .B | Unavailable from source (coded 1988-1997 data only) | | |
| .A | Invalid | .A | Invalid |

| SEX | | FEMALE | |
|------------|--|---------------|--------------|
| Value | Description | Value | Description |
| 1 | Male | 0 | Male |
| 2 | Female | 1 | Female |
| . | Missing | . | Missing |
| .B | Unavailable from source (coded in 1988-1997 data only) | | |
| .A | Invalid | .A | Invalid |
| .C | Inconsistent | .C | Inconsistent |

| ATYPE | | ELECTIVE | |
|--------------|--------------|-----------------|--------------|
| Value | Description | Value | Description |
| 1-2, 4-6 | Non-elective | 0 | Non-elective |
| 3 | Elective | 1 | Elective |
| . | Missing | . | Missing |
| .A | Invalid | .A | Invalid |

Appendix B.
Resulting NIS Merged Files

APPENDIX B. RESULTING NIS MERGED FILES

The following table lists the data elements expected in the updated NIS Core file after the NIS Trends Supplemental File is merged with the original NIS Core file.

| Data Element | Data Elements in the <u>updated</u> NIS Core File by Data Year (x indicates data element is included in that year's NIS Trends Supplemental file) | | | | | | | | | | | | | | |
|------------------|--|------|------|------|------|------|------|------|------|------|--------------------------|------|---------------|------|------|
| | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
| ADAYWK | X | X | X | X | X | X | X | X | X | X | Not Available | | | | |
| AGE | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| AGEDAY | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| AMONTH | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| ASOURCE | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| ASOURCE_X | Not Available | | | | | | | | | | X | X | X | X | X |
| ATYPE | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| AWEEKEND | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| DCCHPR1 | X | X | X | X | X | X | X | X | X | X | Not Available | | | | |
| DIED | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| DISCWT | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| DISCWT_U | On Hospital Weights Files | | | | | X | X | X | X | X | Replaced by DISCWT | | | | |
| DISCWTcharge | Not Available | | | | | | | | | | | X | Not Available | | |
| DISP | X | X | X | X | X | X | X | X | X | X | Not Available | | | | |
| DISPUB92 | Not Available | | | | | | | | | | X | X | X | X | X |
| DISPUNIFORM | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| DQTR | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| DRG | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| DRG10 | X | X | X | X | X | X | X | X | X | X | X | X | Not Available | | |
| DRG18 | Not Available | | | | | | | | | | X | X | X | X | X |
| DRGVER | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| DSHOSPID | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| DSNDX | X | X | X | X | X | X | X | X | X | X | Not Available | | | | |
| DSNPR | X | X | X | X | X | X | X | X | X | X | Not Available | | | | |
| DSNUM | X | X | X | X | X | X | X | X | X | X | Not Available | | | | |
| DSTYPE | X | X | X | X | X | X | X | X | X | X | Not Available | | | | |
| DX1 - DX15 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| DXCCS1 - DXCCS15 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| DXSYS | X | X | X | X | X | X | X | X | X | X | Not Available | | | | |
| DXV1 - DXV15 | X | X | X | X | X | X | X | X | X | X | Not Available | | | | |
| ECODE1 - ECODE4 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| ELECTIVE | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| E_CCS1 - E_CCS4 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| FEMALE | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| HOSPID | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| HOSPST | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| HOSPSTCO | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| HOSPWT | X | X | X | X | X | X | X | X | X | X | On Hospital Weights File | | | | |

| Data Element | Data Elements in the <u>updated</u> NIS Core File by Data Year (x indicates data element is included in that year's NIS Trends Supplemental file) | | | | | | | | | | | | | | |
|------------------------|--|------|------|------|------|------|------|------|------|------|--------------------------|------|---------------|---------------|------|
| | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
| HOSP_BEDSIZE | X | X | X | X | X | X | X | X | X | X | On Hospital Weights File | | | | |
| HOSP_CONTROL | X | X | X | X | X | X | X | X | X | X | On Hospital Weights File | | | | |
| HOSP_LOCATION | X | X | X | X | X | X | X | X | X | X | On Hospital Weights File | | | | |
| HOSP_LOCTEACH | X | X | X | X | X | X | X | X | X | X | On Hospital Weights File | | | | |
| HOSP_REGION | X | X | X | X | X | X | X | X | X | X | On Hospital Weights File | | | | |
| HOSP_TEACH | X | X | X | X | X | X | X | X | X | X | On Hospital Weights File | | | | |
| KEY | Not Available | | | | | | | | | | X | X | X | X | X |
| LOS | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| LOS_X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| MDC | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| MDC10 | X | X | X | X | X | X | X | X | X | X | X | X | Not Available | | |
| MDC18 | Not Available | | | | | | | | | | X | X | X | X | X |
| MDID_S | X | X | X | X | X | X | X | X | X | X | X | X | X | Not Available | |
| MDNUM1_S | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| MDNUM2_S | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| NDX | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| NECODE | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| NEOMAT | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| NIS_STRATUM | X | X | X | X | X | X | X | X | X | X | On Weights File | | X | X | X |
| NPR | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| OLD_DX1 - OLD_DX15 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| OLD_DXCCS1-OLD_DXCCS15 | Not Available | | | | | | | | | | X | X | X | X | X |
| OLD_NDX | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| OLD_PR1 - OLD_PR15 | X | X | X | X | X | X | X | X | X | X | Not Available | | | | |
| PAY1 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| PAY1_N | X | X | X | X | X | X | X | X | X | X | Not Available | | | | |
| PAY1_X | Not Available | | | | | | | | | | X | X | X | X | X |
| PAY2 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| PAY2_N | X | X | X | X | X | X | X | X | X | X | Not Available | | | | |
| PAY2_X | Not Available | | | | | | | | | | X | X | X | X | X |
| PCCHPR1 | X | X | X | X | X | X | X | X | X | X | Not Available | | | | |
| PR1 - PR15 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| PRCCS1 - PRCCS15 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| PRDAY1 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| PRDAY2 - PRDAY15 | Not Available | | | | | | | | | | X | X | X | X | X |
| PROCESS | X | X | X | X | X | X | X | X | X | X | Not Available | | | | |
| PRSYS | X | X | X | X | X | X | X | X | X | X | Not Available | | | | |
| PRV1 - PRV15 | X | X | X | X | X | X | X | X | X | X | Not Available | | | | |
| RACE | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| SEQ | X | X | X | X | X | X | X | X | X | X | Not Available | | | | |
| SEQ_SID | Not Available | | | | | X | X | X | X | X | Not Available | | | | |
| SEX | X | X | X | X | X | X | X | X | X | X | Not Available | | | | |
| SURGID_S | X | X | X | X | X | X | X | X | X | X | X | X | X | Not Available | |
| TOTAL_DISC | X | X | X | X | X | X | X | X | X | X | On Hospital Weights File | | | | |

| Data Element | Data Elements in the <u>updated</u> NIS Core File by Data Year (x indicates data element is included in that year's NIS Trends Supplemental file) | | | | | | | | | | | | | | |
|--------------|--|------|------|------|------|-----------------------------|------|------|------|------|---------------|------|------|------|------|
| | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
| TOTCHG | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| TOTCHG_X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| YEAR | X | X | X | X | X | On Hospital Weights File | | | X | X | X | X | X | X | X |
| ZIPINC | Not Available | | | | | | | | | | X | X | X | X | X |
| ZIPINC4 | X | X | X | X | X | X | X | X | X | X | Not Available | | | | |
| ZIPINC8 | X | X | X | X | X | X | X | X | X | X | Not Available | | | | |
| ZipInc_Qrtl | Not Available | | | | | | | | | X | X | X | X | X | X |