HCUP QUALITY CONTROL PROCEDURES

Table of Contents

HCUP QUALITY CONTROL PROCEDURES

This section describes the procedures used to assess data quality for each data source participating in HCUP.

QUALITY CONTROL PHILOSOPHY

Edit procedures were applied to HCUP data. Editing followed explicit rules:

C   Make the data usable without extensive further editing.

C   Confirm that data values are valid, internally consistent, and consistent with established norms, when feasible.

C   Use some edit procedures to set questionable and inconsistent values to inconsistent (.C or negative 6-filled). Use other edit procedures only to tabulate edit failures. Use the latter to evaluate whether systematic problems exist.

C   Never "fix" or impute data. Set invalid or inconsistent values to special missing values. This preserves the analyst's ability to investigate data anomalies.

C   Some data elements are more important than others because:

-       they are coded more reliably because they relate to reimbursement; and

-       without these data elements, a discharge record is not useful for most analytic purposes.

Therefore, values of these data elements should be retained even in the presence of conflicting information. In order of importance, these data elements are:

1.   Discharge date (and within discharge date: year, month, and day)
2.   Admission date
3.   Principal diagnosis

(Note: dates are not released on the HCUP databases, but these variable are used to create and verify other data elements such as length of stay and age.)

C   Tabulate instances of edit failures and use these to assess data quality for each data source.

QUALITY REVIEW

The following statistics were reviewed by an independent contractor for each year and data source (or for each different layout if the source changed file layouts during the year):

C   For all numeric data elements — means, number of missing and nonmissing values, minimum, and maximum.

C   For all categorical and some continuous data elements — frequency distributions.

C   For closely related data elements (e.g., age in years compared to age in days) —

cross-frequencies.

AUTOMATED QUALITY CONTROL PROCEDURES

The following procedures were applied to each discharge record:

C   *To assess validity of values —*

For numeric data:
-    Verify numeric data as numeric.
-    Check the range against legal values documented by the data source.
-    Check the range against standard norms (e.g., length of stay is a non-negative value; age in years is between 0 and 124, the maximum allowed by the DRG grouper).
-    Check the values against the maximum allowed for the data element (e.g., birth weight less than 20 pounds).

For character data:
-    Verify against norms, when feasible (e.g., diagnosis codes and procedure codes).

C   *To assess internal consistency —*

Compare values of related data elements (e.g., a procedure of *hysterectomy* should appear with a sex of *female*; admission date should occur *before* discharge date).

If an inconsistency involves a critical data element (such as discharge date, admission date, or principal diagnosis), retain the critical data element according to the established hierarchy. For example:

-    If discharge date falls before admission date, retain discharge date and set admission date and length of stay to inconsistent (negative 6-filled or .C).

-    If discharge date is invalid (e.g., February 30), retain discharge quarter and discharge year.

C   *To assess consistency with established norms —*

Compare values to an established norm (e.g., maternal diagnoses should occur with an age between 10 and 55 years).

HCUP Edit Checks: Beginning in 1998 Data

Edit checks for the HCUP databases beginning in 1998 were updated after a review of the editing procedures performed by a number of the HCUP State Partners and Medicare. Summary counts and percentages of edit failures were calculated for every HCUP database. Edit check binary data elements were not retained on the HCUP files.

The following table lists all of the edit checks performed on the HCUP databases starting in 1998 data.   For each edit check there is a edit check number (e.g., EAGE01), a description of the edit check, and a description of the action that is taken if the record fails the edit check.   HCUP uses many diagnosis and procedure screens to define specific conditions employed in the editing procedures. These screens are defined in the section Diagnosis and Procedure Screens.

	HCUP Edit Checks (Beginning in 1998)	
Edit Check	**Description**	**Action**
	Age and Date of Birth	
EAGE01	**DATE OF BIRTH MISSING OR INVALID** The date of birth (DOB) is missing (.) or invalid (.A)	For tabulation purposes only
EAGE02	**DATE OF BIRTH IS AFTER ADMISSION DATE** The date of birth (DOB) is greater than the admission date (ADATE) causing the age in years (AGE) to be negative.	Set DOB and AGE to inconsistent (.C). AGEDAY and AGEMONTH are set to missing (.).
EAGE03	**AGE IN YEARS IS GREATER THAN 124 YEARS** The age in years (AGE) is greater than 124.	Set AGE to inconsistent (.C). AGEDAY and AGEMONTH are set to missing (.).
EAGE04	**NEONATAL DIAGNOSIS INCONSISTENT WITH AGE** A diagnosis (DXn) on the record satisfies the NEONATE screen, and the age in years (AGE) is greater than zero. Retain age on a combined neonatal/maternal record.	Set offending DXn to "incn" and corresponding DXCCSn to inconsistent (.C). If NEOMAT ne 3, set - AGE to inconsistent (.C), - AGEDAY to inconsistent (.C), and - AGEMONTH to inconsistent (.C).
EAGE05	**MATERNAL DIAGNOSIS OR PROCEDURE INCONSISTENT WITH AGE** A diagnosis (DXn) or procedure (PRn) on the record satisfies the MATERNAL screen, and the nonmissing age in years (AGE) is less than 10 or greater than 55. Retain age on a combined maternal/neonatal record.	Set offending DXn/PRn to "incn" and corresponding DXCCSn/PRCCSn to inconsistent (.C). If NEOMAT ne 3, set - AGE to inconsistent (.C), - AGEDAY to inconsistent (.C), and - AGEMONTH to inconsistent (.C).
EAGE	**ANY AGE EDIT** Summary age edit check that indicates that an edit in the range EAGE01-EAGE05 has been triggered.	For tabulation purposes only.

	HCUP Edit Checks (Beginning in 1998)	
Edit Check	**Description**	**Action**
	Admission Date, Discharge Date, and Length of Stay	
ELOS01	**ADMISSION DATE MISSING OR INVALID** The date of admission (ADATE) is missing (.) or invalid (.A)	For tabulation purposes only.
ELOS02	**DISCHARGE DATE MISSING OR INVALID** The date of discharge (DDATE) is missing (.) or invalid (.A)	For tabulation purposes only.
ELOS03	**ADMISSION DATE IS AFTER DISCHARGE DATE** The date of admission (ADATE) is greater than the discharge date (DDATE) causing the length of stay (LOS) to be negative.	Set ADATE and LOS to inconsistent (.C). LOS_X retains uncleaned value.
ELOS04	**EXCESSIVELY LONG LENGTH OF STAY** The length of day (LOS) is excessively long. For inpatient data, the maximum allowed length of stay is 365 days. For outpatient data, the maximum allowed length of stay is 3 days. The three day limit for outpatient records allows for observation time that would be allowable for Medicare payment.	Set LOS to inconsistent (.C). LOS_X retains uncleaned value.
ELOS	**ANY LENGTH OF STAY EDIT** Summary length of stay edit check that indicates that an edit in the range ELOS01-ELOS04 has been triggered.	For tabulation purposes only.
	Procedure Day	
EPRDAY01	**DAY OF PROCEDURE NOT DURING STAY** A day of procedure on the record occurred more than 4 days before the stay began or occurred more than 3 days after the stay ended. The three day limit allows for observation time that would be allowable for Medicare payment. If the length of stay is excessively long (edit check ELOS04), then EPRDAY01 will also be triggered if the day of procedure is greater than the maximum allowed for length of stay (365 days for inpatient data and 3 days for outpatient data).	Set PRDAYn and PRDATEn to inconsistent (.C).

	HCUP Edit Checks (Beginning in 1998)	
Edit Check	**Description**	**Action**
	Total Charge	
ETCHG01	**EXCESSIVELY LOW TOTAL CHARGES** The total charges (TOTCHG) are less than $25.	Set TOTCHG to inconsistent (.C). TOTCHG_X retains uncleaned value.
ETCHG02	**EXCESSIVELY HIGH TOTAL CHARGES** The total charges (TOTCHG) are excessively high. For inpatient data, $1,000,000 is the maximum total charges allowed. For outpatient data, $50,000 is the maximum total charges allowed.	Set TOTCHG to inconsistent (.C). TOTCHG_X retains uncleaned value.
ETCHG	**ANY TOTAL CHARGE EDIT** Summary total charge edit check that indicates that an edit in the range ETCHG01-ETCHG02 has been triggered.	For tabulation purposes only.
	ICD-9-CM Diagnoses	
EDX01	**NO PRINCIPAL DIAGNOSIS CODED ON THE RECORD** There is no principal diagnosis (DX1) coded on the record.	For tabulation purposes only.
EDX02	**DIAGNOSIS CODE IS INVALID AS OF THE DISCHARGE DATE** The record contains at least one diagnosis code (DXn) that is invalid as of the discharge date, plus or minus six months (to allow for anticipation of or lags in response to official ICD-9-CM coding changes).	Set DXn to "invl" and DXCCSn to invalid (.A).
EDX03	**DIAGNOSIS INCONSISTENT WITH SEX** The reported sex of the patient (FEMALE) does not agree with the sex of at least one of the diagnoses (DXn) coded on the record.	Set DXn to "incn", FEMALE to inconsistent (.C), and DXCCSn to inconsistent (.C).

	HCUP Edit Checks (Beginning in 1998)	
Edit Check	**Description**	**Action**
EDX04	**PRINCIPAL DIAGNOSIS INVALID AS DISCHARGE DIAGNOSIS (Inpatient data only, beginning in 2000)** The principal diagnosis is invalid as a discharge diagnosis. The Diagnosis Related Group (DRG) has been assigned to 469 "Principal Diagnosis Invalid as Discharge Diagnosis."	For tabulation purposes only.
EDX	**ANY DIAGNOSIS EDIT** Summary diagnosis edit check that indicates that an edit in the range EDX01-EDX04 has been triggered.	For tabulation purposes only.
	ICD-9-CM Procedures	
EPR01	**AMBULATORY SURGERY PATIENT WITH NO SURGERY (Ambulatory surgery data only)** No procedures (ICD-9-CM, CPT, or HCPCS) are coded.	For tabulation purposes only.
EPR02	**PROCEDURE CODE IS INVALID AS OF THE DISCHARGE DATE** The record contains at least one procedure code (PRn) that is invalid as of the discharge date, plus or minus six months (to allow for anticipation of or lags in response to official ICD-9-CM coding changes).	Set PRn to "invl" and PRCCSn to invalid (.A).
EPR03	**PROCEDURE INCONSISTENT WITH SEX** The reported sex of the patient (FEMALE) does not agree with the sex of at least one of the procedures (PRn) coded on the record.	Set PRn to "incn", FEMALE to inconsistent (.C), and PRCCSn to inconsistent (.C).
EPR	**ANY PROCEDURE EDIT** Summary procedure edit check that indicates that an edit in the range EPR01-EPR03 has been triggered.	For tabulation purposes only.
	ICD-9-CM Diagnoses and Procedures	

	HCUP Edit Checks (Beginning in 1998)	
Edit Check	**Description**	**Action**
EDXPR01	**MIXED MATERNAL AND NEONATAL RECORD** Codes in the diagnosis vector or the procedure vector satisfy both the maternal and neonatal screens. The neonatal-maternal flag (NEOMAT) is set to 3.	For tabulation purposes only.
EDXPR02	**PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS (Inpatient data only)** The Diagnosis Related Group (DRG) has been assigned to 468 "Extensive O.R. Procedure Unrelated to Principal Diagnosis," or 476 "Prostatic O.R. Procedure Unrelated to Principal Diagnosis," or 477 "Non-extensive O.R. Procedure Unrelated to Principal Diagnosis."	For tabulation purposes only.
EDXPR03	**DISCHARGE RECORD IS UNGROUPABLE (Inpatient data only)** The Diagnosis Related Group (DRG) has been assigned to 470 "Ungroupable." This includes discharges with an E-code as the principal diagnosis.	For tabulation purposes only.
EDXPR	**ANY DIAGNOSIS AND PROCEDURE EDIT** Summary diagnosis and procedure edit check that indicates that an edit in the range EDXPR01-EDXPR03 has been triggered.	For tabulation purposes only.
	CPT/HCPCS Procedures	
ECPT01	**CPT/HCPCS PROCEDURE IS INVALID AS OF THE DISCHARGE DATE (Outpatient data only, beginning in 2000)** The record contains at least one CPT/HCPCS procedure code (CPTn) that is invalid as of the discharge date plus or minus 6 months (to allow for anticipation of or lags in response to official CPT/HCPCS coding changes). HCUP validates Level I (numeric) and Level II codes (A0000-V9999), but does not validate the Level III codes (W0000-Z9999).	Set CPTn to "invl" .

HCUP Edit Checks (Beginning in 1998)		
Edit Check	**Description**	**Action**
ECPT02	**CPT/HCPCS PROCEDURE INCONSISTENT WITH SEX (Outpatient data only, beginning in 2000)** The reported sex of the patient (FEMALE) does not agree with the sex of at least one of the CPT/HCPCS procedures (CPTn) coded on the record.	Set CPTn to "incn2".
ECPT03	**CPT/HCPCS PROCEDURE INCONSISTENT WITH AGE (Outpatient data only, beginning in 2000)** The age of the patient (AGE) does not agree with the age of at least one of the CPT/HCPCS procedures (CPTn) coded on the record.	Set CPTn to "incn3".
ECPT	**ANY CPT/HCPCS PROCEDURE EDIT (Outpatient data only, beginning in 2000)** Summary CPT/HCPCS procedure edit check that indicates that an edit in the range ECPT01-ECPT03 has been triggered.	For tabulation purposes only.

HCUP Edit Checks: 1988-1997 Data

Edit checks for the 1988-1997 HCUP databases were developed during the HCUP Feasibility Study (*AHCPR Hospital Cost Database Feasibility Study*, Contract No. 282-90-0029). Edit check binary data elements that identify inconsistencies between related data elements on the same record were retained on some HCUP databases. The edit check data elements (EDnnn) have the following values:

0   The problem was not found, or the edit check was not applicable.
1   The record failed the edit check.

To conserve space on the restricted access public release HCUP files, the edit check data elements were not included.

The following table lists all of the edit checks performed on the HCUP databases in the 1988-1997 data. For each edit check the edit check number (e.g., E010) corresponds to the edit check data element. Included in the table is a description of the edit check and the action that is taken if the record fails the edit check. HCUP uses many diagnosis and procedure screens to define specific conditions employed in the editing procedures. These screens are defined in the section Diagnosis and Procedure Screens.

	HCUP Edit Checks (1988-1997)	
Edit Check	**Description**	**Action**
ED010	**REPORTED LOS IS NOT EQUAL TO CALCULATED LOS (Inpatient data only)** The length of stay calculated from admission date and discharge date does not equal the reported length of stay.	For tabulation purposes only.
ED011	**ADMIT DATE IS AFTER DISCHARGE DATE** The length of stay is negative.	Set ADATE and LOS to inconsistent (.C).
ED020	**REPORTED AGE IN YEARS DOES NOT EQUAL CALCULATED AGE (Inpatient data only)** The age in years calculated from birthdate and admission date does not equal the reported age.	For tabulation purposes only.
ED021	**AGE IN YEARS INCONSISTENT WITH INFANT AGE (Inpatient data only)** Infant age is nonmissing, but the age in years is greater than zero.	Set AGEDAY and AGE to inconsistent (.C).
ED030	**AMBULATORY SURGERY STAY GREATER THAN 1 DAY (Outpatient data only)** The length of stay is greater than 0.	For tabulation purposes only.
ED100	**MATERNAL AND NEONATAL RECORD (Inpatient data only)** Codes in the diagnosis vector or the procedure vector satisfy both the maternal and neonatal screens.	For tabulation purposes only.
ED101-ED1nn	**DIAGNOSIS INCONSISTENT WITH SEX** The sex coded for the patient does not agree with the sex of the diagnosis.	Set DXVn and SEX to inconsistent (.C).
ED201-ED2nn	**PROCEDURE INCONSISTENT WITH SEX** The sex coded for the patient does not agree with the sex of the procedure.	Set PRVn and SEX to inconsistent (.C).
ED301-ED3nn	**NEONATAL DIAGNOSIS INCONSISTENT WITH AGE (Inpatient data only)** The diagnosis satisfies the NEONATE screen, and the age in years is greater than zero. Retain age on a combined neonatal/maternal record.	Set DXVn to inconsistent (.C). If NEOMAT ne 3, set AGE and AGEDAY to inconsistent (.C).
ED401-ED4nn	**MATERNAL DIAGNOSIS INCONSISTENT WITH AGE (Inpatient data only)** The diagnosis satisfies the MATERNAL screen, and the nonmissing age in years is less than 10 or greater than 55. Retain age on a combined maternal/neonatal record.	Set DXVn to inconsistent (.C). If NEOMAT ne 3, set AGE and AGEDAY to inconsistent (.C).

	HCUP Edit Checks (1988-1997)	
Edit Check	**Description**	**Action**
ED501-ED5nn	**MATERNAL PROCEDURE INCONSISTENT WITH AGE (Inpatient data only)** A procedure satisfies the MATERNAL screen, and the nonmissing age in years is less than 10 or greater than 55. Retain age on a combined maternal/neonatal record.	Set PRVn to inconsistent (.C). If NEOMAT ne 3, set AGE and AGEDAY to inconsistent (.C).
ED600	**LONG LOS, JUSTIFIED (Inpatient data only)** The length of stay is over 365 days, and is justified by a long-term-care diagnosis, a perinatal diagnosis, discharge to another facility, or the patient's death.	For tabulation purposes only.
ED601	**LONG LOS, UNJUSTIFIED (Inpatient data only)** The length of stay is over 365 days, and is not justified by a long-term-care diagnosis, a perinatal diagnosis, discharge to another facility, or the patient's death.	Set LOS to inconsistent (.C).
ED700	**AMBULATORY SURGERY PATIENT WITH NO SURGERY (Outpatient data only)** No procedures (ICD-9-CM, CPT-4, or HCPCS) are coded.	For tabulation purposes only.
ED701-ED7nn	**DAY OF PROCEDURE WITHOUT CORRESPONDING PROCEDURE (Inpatient data only)** There is a nonmissing day of procedure without a corresponding procedure code.	Set PRDAYn and PRDATEn to missing (.) and move up all subsequent procedure date pairs.
ED801-ED8nn	**DAY OF PROCEDURE NOT DURING STAY** The nonmissing day of procedure is less than (-4) or greater than the length of stay plus one.	Set PRDAYn and PRDATEn to inconsistent (.C).
ED910	**INPATIENT CHARGES PER DAY ARE EXCESSIVELY LOW, JUSTIFIED (Inpatient data only)** Total charges and length of stay are both nonmissing; charges per day are less than $100, and are justified by discharge to another facility or by the patient's death.	For tabulation purposes only.
ED911	**INPATIENT CHARGES PER DAY ARE EXCESSIVELY LOW, UNJUSTIFIED (Inpatient data only)** Total charges and length of stay are both nonmissing; charges per day are less than $100, and are not justified by discharge to another facility or by the patient's death.	Set TOTCHG and LOS to inconsistent (.C).

HCUP Edit Checks (1988-1997)		
Edit Check	**Description**	**Action**
ED912	**AMBULATORY SURGERY CHARGES ARE EXCESSIVELY LOW (Outpatient data only)** Total charges are less than $10.	Set TOTCHG to inconsistent (.C).
ED920	**INPATIENT CHARGES PER DAY ARE EXCESSIVELY HIGH, JUSTIFIED (Inpatient data only)** Total charges and length of stay are both nonmissing; charges per day are more than $20,000, and are justified by discharge to another facility or by the patient's death.	For tabulation purposes only.
ED921	**INPATIENT CHARGES PER DAY ARE EXCESSIVELY HIGH, UNJUSTIFIED (Inpatient data only)** Total charges and length of stay are both nonmissing; charges per day are more than $20,000, and are not justified by discharge to another facility or by the patient's death.	Set TOTCHG and LOS to inconsistent (.C).
ED922	**AMBULATORY SURGERY CHARGES ARE EXCESSIVELY HIGH (Outpatient data only)** Total charges are $10,000 or more.	Set TOTCHG to inconsistent (.C).
ED951	**UNACCEPTABLE UNIFORM PAY SOURCE COMBINATION** The uniform primary pay source and secondary pay source are the same, and the sources are Medicare or Medicaid.	Set PAY2 and PAY2_N to inconsistent (.C).
ED952	**UNACCEPTABLE NON-UNIFORM PAY SOURCE COMBINATION** The non-uniform primary pay source and secondary pay source are the same, and the sources are CHAMPUS, Worker's Compensation, or Title V.	Set PAY2 and PAY2_N to inconsistent (.C).

Diagnosis and Procedure Screens

The diagnosis and procedure screens used in HCUP data processing are specified below. The screens have been updated for ICD-9-CM coding changes to diagnoses and procedures through fiscal year 2002 (ending date 9/30/02). Changes to the screens across years are underlined.

Maternal:

Screen used for 1988 to 1993 calendar year data:
Diagnoses 630 to 67694; V220 to V242; and V270 to V279
Procedures 720 to 7599

Screen used for 1994 to 1996 calendar year data:
Diagnoses 630 to 677; V220 to V242; and V270 to V279
Procedures 720 to 7599;

Screen used for 1997 calendar year data:
Diagnoses 630 to 677 (excluding 655.7, 655.71, 655.73); 7965; V220 to V242; and V270 to V279
Procedures 720 to 7599

Note: Codes 655.7 (valid until September 1997), 655.71, and 655.73 (valid as of October 1997) were erroneously excluded in the 1997 maternal screen. This would cause ED4nn "Maternal Diagnosis Inconsistent with Age" to not be set if a discharge with any of these diagnoses and an age less than 10 or greater than 55. This omission was corrected starting with 1998 data.

Screen used beginning with 1998 calendar year data:
Diagnoses 630 to 677; 7965; V220 to V242; V270 to V279; and V2381 to V2389
Procedures 720 to 7599

Neonate:

Screen used for 1988 to 1993 calendar year data:
Diagnoses 7600 to 7799; and V3000 to V392

Screen used for 1994-1995 calendar year data:
Diagnoses 75983; 7600 to 7799; and V3000 to V392

Note: Code 75983 was erroneously included in the neonate screen. Because this is a rare condition, only a negligible number of records should be affected.

Screen used for 1996-1999 calendar year data:
Diagnoses 7600 to 7799; and V3000 to V392

Screen used beginning with 2000 calendar year data:
Diagnoses 7620 to 7785; 7787 to 7799; and V3000 to V392

Note: maternal conditions affecting the fetus (760-761) and congenital hydrocele (7786) were removed from the neonate screen because these conditions are sometimes coded for children more than one year old.

Screen used beginning with 2001 calendar year data:
Diagnoses <u>27701</u>, 7620 to 7706; 7708 to 7785; 7787 to 7799; <u>V290-V299</u>; and V3000 to V392

Note: chronic respiratory disease arising in the perinatal period (code 7707) was removed from the neonate screen because this diagnosis code is often used even after the first year to indicate a condition originating in the perinatal period.

Perinate:
Note: Beginning with 1998 calendar year data, the HCUP edit checks were revised and the perinate screen was no longer used or updated.

Screen used from 1988-1997 calendar year data:
Diagnoses 7400 to 7799

Long-term-care indication:
Note: Beginning with 1998 calendar year data, the HCUP edit checks were revised and the long-term-care indication screen was no longer used or updated.

Screen used for 1988 to 1992 calendar year data:
Diagnoses 2900 to 30503; 30520 to 3124; 3219 to 319; 3440; 430 to 438; and 797 to 7999

Screen used for 1993 calendar year data:
Diagnoses 2900 to 30503; 30520 to 3124; 3219 to 319; 3440; <u>34481</u>; 430 to 438; <u>44024</u>, <u>4416</u>, <u>78003</u>, and 797 to 7999

Note: Codes 78001, 78002, and 78009 were erroneously excluded from the long-term care screen. This would cause some discharges with long length of stays (over 365 days) to have ED601 "Long Length of Stay, Unjustified" set instead of ED600 "Long Length of Stay, Justified."

Screen used for 1994 calendar year data:
Diagnoses 2900 to 30503, 30520 to 3124, 3129 to 319, <u>34400 to 34409</u>, 34481, 430 to 438, 44024, 4416, 78003, 797 to 7999

Note: Codes 78001, 78002, 78009, 31281, 31282, and 31289 were erroneously excluded from the long-term care screen. This would cause some discharges with long length of stays (over 365 days) to have ED601 "Long Length of Stay, Unjustified" set instead of ED600 "Long Length of Stay, Justified."

Screen used for 1995 calendar year data:
Diagnoses 2900 to 30503, 30520 to 3124, 3129 to 319, 34400 to 34409, 34481, 430 <u>to 4352</u>, <u>4358</u> to 438, 44024, 4416, 78003, 797 to 7999

Note: Codes 78001, 78002, 78009, 31281, 31282, 31289, and 4353 were erroneously excluded from the long-term care screen. This would cause some discharges with long length of stays (over 365 days) to have ED601 "Long Length of Stay, Unjustified" set instead of ED600 "Long Length of Stay, Justified."

Screen used for 1996 calendar year data:
Diagnoses 2900 <u>to 319</u>, 34400 to 34409, 34481, 430 <u>to 438</u>, 44024, 4416, <u>78001 to 78009</u>, 797 to 7999

Screen used for 1997 calendar year data:
Diagnoses 2900 to 319, 34400 to 34409, 34481, 430 to <u>4389</u>, 44024, 4416, 78001 to 78009, 797 to 7999

Male diagnoses:

Screen used for 1988 to 1992 calendar year data:
Diagnoses 01640 to 01656, 05413, 0720, 09812 to 09814, 09832 to 09834, 13103, 1750 to 1759, 185 to 1879, 2144, 2220 to 2229, 2334 to 2336, 2364 to 2366, 2570 to 2579, 30274 to 30275, 4564, 600 to 6089, 7525 to 7526, 7587, 78832, 7922, 8780 to 8783, 9393, V1045 to V1049, V502

Screen used for 1993 to 1995 calendar year data:
Diagnoses 01640 to 01656, 05413, 0720, 09812 to 09814, 09832 to 09834, 13103, 1750 to 1759, 185 to 1879, 2144, 2220 to 2229, 2334 to 2336, 2364 to 2366, 2570 to 2579, 30274 to 30275, 4564, 600 to 6089, 7525 to 7526, 7587, 78832, <u>79093</u>, 7922, 8780 to 8783, 9393, V1045 to V1049, V502

Screen used for 1996 calendar year data:
Diagnoses 01640 to 01656, 05413, 0720, 09812 to 09814, 09832 to 09834, 13103, 1750 to 1759, 185 to 1879, 2144, 2220 to 2229, 2334 to 2336, 2364 to 2366, 2570 to 2579, 30274 to 30275, 4564, 600 to 6089, <u>75251 to 75269</u>, 7587, 78832, 79093, 7922, 8780 to 8783, 9393, V1045 to V1049, V502

Screen used for 1997 calendar year data:
Diagnoses 01640 to 01656, 05413, 0720, 09812 to 09814, 09832 to 09834, 13103, 1750 to 1759, 185 to 1879, 2144, 2220 to 2229, 2334 to 2336, 2364 to 2366, 2570 to 2579, 30274 to 30275, 4564, 600 to 6089, 75251 to 75269, 7587, 78832, 79093, 7922, 8780 to 8783, 9393, V1045 to V1049, <u>V1642-V1643</u>, V502

Screen used beginning with 1998 calendar year data:
Diagnoses 01640 to 01656, 05413, 0720, 09812 to 09814, 09832 to 09834, 13103, 1750 to 1759, 185 to 1879, 2144, 2220 to 2229, 2334 to 2336, 2364 to 2366, 2570 to 2579, 30274 to 30275, 4564, 600 to 6089, 75251 to 75269, 7587, 78832, 79093, 7922, 8780 to 8783, 9393, V1045 to V1049, <u>V1361</u>, V1642-V1643, <u>V2652</u>, V502, <u>V7644-V7645</u>

Screen used beginning with 2001 calendar year data:
Diagnoses 01640 to 01656, 05413, 0720, 09812 to 09814, 09832 to 09834, 13103, 1750 to 1759, 185 to 1879, 2144, 2220 to 2229, 2334 to 2336, 2364 to 2366, 2570 to 2579, 30274 to 30275, 4564, 600 to 6089, 75251 to 75252; 75263 to 75269, 7587, 78832, 79093, 7922, 8780 to 8783, 9393, V1045 to V1049, V1361, V2652, V502, V7644-V7645

Note: Diagnosis codes indicating a family history of male-specific

malignant neoplasms (V1642-V1643) were removed from the male diagnosis screen. Diagnosis codes 75261 (Hypospadias) and 75262 (Epispadias) were removed from the male diagnosis screen because female versions of these conditions are possible, although very rare.

Male procedures:

Screen used beginning with 1988 calendar year data:
Procedures 600 to 6499, 8791 to 8799, 9824, 9994 to 9996.

Female diagnoses:

Screen used from 1988 to 1995 calendar year data:
Diagnoses 01660 to 01676, 05411 to 05412, 09815 to 09817, 09835 to 09837, 1121, 13101, 1740 to 1749, 179 to 1849, 1986, 2180 to 2219, 2331 to 2333, 2360 to 2363, 2560 to 2569, 30273, 30276, 30651 to 30652, 4566, 6115 to 6116, 6140 to 66942, 66944 to 67694, 71630 to 71639, 7520 to 75249, 7923, 7950, 8674 to 8675, 8784 to 8787, 90255 to 90256, 90281 to 90282, 9391 to 9392, 9474, 99632, V074, V1040 to V1044, V131, V220 to V235, V238 to V2501, V251, V253, V2541 to V2543, V255, V261, V270 to V289, V447, V524, V557, V723 to V724, V762

Note: Starting in 1994 calendar year data, Codes 66943, 677, V237, V4551, V4552, and V5042 were erroneously excluded from the female screen. This would cause ED1nn "Diagnosis Inconsistent with Sex" to not be set when a male discharge had one of these female diagnoses.

Screen used for 1996 calendar year data:
Diagnoses 01660 to 01676, 05411 to 05412, 09815 to 09817, 09835 to 09837, 1121, 13101, 1740 to 1749, 179 to1849, 1986, 2180 to 2219, 2331 to 2333, 2360 to 2363, 2560 to 2569, 30273, 30276, 30651 to 30652, 4566, 6115 to 6116, 6140 to 677, 71630 to 71639, 7520 to 75249, 7923, 7950, 8674 to 8675, 8784 to 8787, 90255 to 90256, 90281 to 90282, 9391 to 9392, 9474, 99632, V074, V1040 to V1044, V131, V220 to V2501, V251, V253, V2541 to V2543, V255, V261, V270 to V289, V447, V4551-V4552, V5042, V524, V557, V723 to V724, V762

Note: Code E9672 was erroneously included in the female screen when processing 1996 calendar year data for all states and 1997 calendar year data for a few states. This would cause male discharges with the diagnosis E9672 "Child and adult battering and other maltreatment -- by mother or step mother" to have edit check ED1nn set to 1 and the diagnosis validity flag DXVn and SEX set to inconsistent (.C). Because this is a rarely used code, only a negligible number of records should be affected.

Screen used for 1997 calendar year data:
Diagnoses 01660 to 01676, 05411 to 05412, 09815 to 09817, 09835 to 09837, 1121, 13101, 1740 to 1749, 179 to1849, 1986, 2180 to 2219, 2331 to 2333, 2360 to 2363, 2560 to 2569, 30273, 30276, 30651 to 30652, 4566, 6115 to 6116, 6140 to 677, 71630 to 71639, 7520 to

75249, 7923, 7950, <u>7965</u>, 8674 to 8675, 8784 to 8787, 90255 to 90256, 90281 to 90282, 9391 to 9392, 9474, 99632, V074, V1040 to V1044, V131, <u>V1641</u>, V220 to V2501, V251, V253, V2541 to V2543, V255, V261, V270 to V289, V447, V4551-V4552, V5042, V524, V557, V723 to V724, V762

Note: Code E9672 was erroneously included in the female screen when processing 1996 calendar year data for all states and 1997 calendar year data for a few states. This would cause male discharges with the diagnosis E9672 "Child and adult battering and other maltreatment -- by mother or step mother" to have edit check ED1nn set to 1 and the diagnosis validity flag DXVn and SEX set to inconsistent (.C). Because this is a rarely used code, only a negligible number of records should be affected.

Screen used for 1998 calendar year data:
Diagnoses 01660 to 01676, 05411 to 05412, 09815 to 09817, 09835 to 09837, 1121, 13101, 1740 to 1749, 179 to1849, 1986, 2180 to 2219, 2331 to 2333, 2360 to 2363, 2560 to 2569, 30273, 30276, 30651 to 30652, 4566, 6115 to 6116, 6140 to 677, 71630 to 71639, 7520 to 75249, 7923, 7950, 7965, 8674 to 8675, 8784 to 8787, 90255 to 90256, 90281 to 90282, 9391 to 9392, 9474, 99632, V074, V1040 to V1044, V131, V1641, V220 to V2501, V251, V253, V2541 to V2543, V255, V261, <u>V2651</u>, V270 to V289, V4551-V4552, V5042, V524, V723 to V724, V762

Note: Beginning with the 1998 calendar year data processing, the decision was made to exclude V447 and V557 from the female screen because these patients would mostly be transsexuals.

Screen used beginning with 2000 calendar year data:
Diagnoses 01660 to 01676, 05411 to 05412, 09815 to 09817, 09835 to 09837, 1121, 13101, 1740 to 1749, 179 to1849, 1986, 2180 to 2219, 2331 to 2333, 2360 to 2363, 2560 to 2569, 30273, 30276, 30651 to 30652, 4566, 6115 to 6116, 6140 to 677, 71630 to 71639, 7520 to 75249, 7923, 7950, 7965, 8674 to 8675, 8784 to 8787, 90255 to 90256, 90281 to 90282, 9391 to 9392, 9474, 99632, V074, V1040 to V1044, V131, V1641, V220 to V2501, V251, V253, V2541 to V2543, V255, V261, V2651, V270 to V289, V4551-V4552, <u>V4981</u>, V5042, V524, <u>V6701</u>, V723 to V724, V762, and <u>V7646-V7647</u>

Screen used beginning with 2001 calendar year data:
Diagnoses 01660 to 01676, 05411 to 05412, 09815 to 09817, 09835 to 09837, 1121, 13101, 1740 to 1749, 179 to1849, 1986, 2180 to 2219, 2331 to 2333, 2360 to 2363, 2560 to 2569, 30273, 30276, 30651 to 30652, 4566, 6115 to 6116, 6140 to 677, 71630 to 71639, 7520 to 75249, 7923, 7950, 7965, 8674 to 8675, 8784 to 8787, 90255 to 90256, 90281 to 90282, 9391 to 9392, 9474, 99632, V074, V1040 to V1044, V131, V220 to V2501, V251, V253, V2541 to V2543, V255, V261, V2651, V270 to V289, V4551-V4552, V4981, V5042, V524, V6701, V723 to V724, V762, and V7646-V7647

Note: A diagnosis code indicating a family history of female-specific malignant neoplasms (V1641) was removed from the female diagnosis

screen.

Female procedures:

Screen used for 1988 to 1995 calendar year data:
Procedures 650 to 7599, 8781 to 8789, 8846, 8878, 8926, 9141 to 9149, 9217, 9614 to 9618, 9644, 9724 to 9726, 9771 to 9775, 9816 to 9817, 9823, 9998

Screen used beginning with 1996 calendar year data:
Procedures 6501 to 7599, 8781 to 8789, 8846, 8878, 8926, 9141 to 9149, 9217, 9614 to 9618, 9644, 9724, 9726, 9771 to 9775, 9816 to 9817, 9823, 9998