

## ***The Matched Multiple Birth File***

***Developed by Joyce A. Martin, M.P.H.; Brady E. Hamilton, Ph.D.; Candace M. Cosgrove, M.P.H.; Sally A. Curtin, M.A.; Margaret L. Saulnier, M.A.; and Martha L. Munson, M.S.***

### *Population of multiple birth/fetal death records*

This data set, “The Matched Multiple Birth File,” was developed to allow for analysis of characteristics of sets of births and fetal deaths in multiple deliveries. Such analysis is not possible using the traditional NCHS Live Birth and Fetal Death Files because these files contain individual records of births and deaths in multiple deliveries, but do not identify set members. Thus, characteristics specific to the multiple set (e.g., gender combination of the set, outcome of the set, birthweight differences among set mates) are not available.

To match the members of multiple deliveries we first identified all records reported as twins, triplets, and other higher order multiple births in the restricted-use U.S. Live Birth and Fetal Death files for 1995-2000. All live birth and fetal death records with reported pluralities of 2 or greater, indicating that the event occurred in a multiple delivery, were selected for matching. (Records with a “not stated” plurality are imputed with a plurality of “1” in these files and were, therefore, not included.) For confidentiality reasons, only births and fetal deaths in twin, triplet, and quadruplet deliveries are included on the public-release file.

Note: Fetal deaths of less than 20 completed weeks of gestation are reported by only a small number of reporting areas in the National Vital Statistics System. For the purposes of this file, only fetal deaths of less than 20 weeks of gestation *which were matched with a set mate with a gestational age of 20 weeks or greater* (live birth or fetal death) are included.

### *Matching algorithm*

We developed an algorithm consisting of variables from live birth and fetal death records to match members of twin, triplet, and quadruplet sets. The most obvious variables on which to match, the name and address of the mother, are not collected by NCHS due to confidentiality considerations. The algorithm used in the first stage of matching was based on variables we considered the most uniquely identifying to the pregnancy and which were reported with a reasonable amount of completeness and accuracy: plurality, State and county of occurrence of delivery, mother's date of birth, and the date of delivery (within 2 sequential days). We then identified live birth/fetal death records which had identical values for these five variables. If the number of records with identical information equaled the reported plurality (e.g., three records reported as triplets) these records were considered members of the same twin, triplet, or quadruplet set and assigned a unique set identification number. We also identified instances where the number of records with identical data exceeded the reported plurality of the records. These records were later visually reviewed by the authors and matched where appropriate. Approximately 93 percent of all records were matched in the first stage. All other records were considered unmatched and included in the next stage of the process.

Stage two included all of the unmatched records from stage one except where the number of records with identical data exceeded the reported plurality of the records (see above). In this stage, we added the date of the reported last menstrual period (LMP) and allowed a one digit difference in the mother's date of birth, or the in the date of delivery to allow for obvious miscoding of these items (e.g. for mother's date of birth a one digit difference would be 04/19/64 for one record and 04/19/44 for the other). Records with not stated mother's date of birth were also matched at this stage if data for the other items were identical (1 digit miscodes were not allowed). Stage two resulted in approximately 5 percent of additional records matched, for a cumulative total of over 98 percent of all records matched.

In stage three of the matching process we developed several more complicated algorithms which included additional items from the birth/fetal death record (e.g.: total number of prenatal visits, weight gain during pregnancy, education of the mother). This cycle also allowed for slightly more leniency in the matching of records with obvious miscodes. Most of the stage three process was done by hand, that is, unmatched records

were visually reviewed to identify matches. (A detailed description of this final process is available upon request.) Following this, the final stage of the matching process, the cumulative total of twin and triplet records matched was 98.8 percent.

NOTE: Although the proportion of unmatched records is very low for this file, it is important to note that there are important differences in characteristics between matched and unmatched records. For example, unmatched records are more likely to include infant (12.7 percent) and fetal deaths (21.3 percent) than matched records (3.0 and 1.8 percent respectively).

#### *Verification of algorithm*

To verify our algorithm we surveyed State vital statistics offices and were able to identify only one, Missouri, which maintained a State database of matched sets of multiple records. We then compared our results for the State of Missouri to that of the Missouri office for data year 1995. Matches on the Missouri file were based primarily on the mother's name and address, which would tend to make them highly reliable and thus we considered the Missouri file the "gold standard." In comparing the two files, we found no "false positives"; that is, we did not inadvertently match any records which were not truly members of sets of multiples births. We found only 6 "false negatives;" that is, records that were unmatched on our file but were matched on the Missouri file. These records comprised only .05% of the more than 2,000 Missouri records on our file. The reason our algorithm failed to match these records was due to poor data quality of the items in our algorithm. For example, the date of delivery for some records was miscoded to such an extent that it did not meet our matching criteria and was not considered a match. Missouri was able to match the records because they had the more identifying information -- the mother's name and address. While not perfect, we felt that the comparison with the Missouri file validated our algorithm as a reliable method for identifying sets of multiples births.

#### *Inclusion of infant deaths*

In order to analyze multiple delivery sets for the full perinatal period, information on infant deaths are included on the Matched Multiple Birth File. The Linked Live Birth/Infant Death Cohort Data Sets for 1995-2000 were used to identify infant deaths of up to one year of age which correspond to the live twin, triplet and quadruplet birth records. Information pertaining to the death (e.g. date of death, cause of death) was appended to the end of the appropriate live birth record. Thus, the final file contains all live births and fetal deaths in twin, triplet, and quadruplet deliveries, plus infant deaths.

#### *Imputation of plurality*

Plurality (of records originally coded as “2” or higher) was imputed (changed) for a small number of records (87), or .01 percent of all records on the Matched Multiple Birth File. The imputation was performed to correct what appeared to be obvious miscoding of plurality. In general, plurality was imputed where information for records matched but 1 or more of the potential set member records indicated a different plurality. For example, if three live birth records matched and two of these records indicated a plurality of 3 but the remaining record had a plurality of 2, then the plurality for the later record was changed to a 3. Plurality was imputed for all members of a set only where information on all records matched and certificate numbers were perfectly consecutive (for example, if three live birth records with pluralities of “2” matched and certificate numbers were consecutive, the plurality for all three records was changed to “3.”) All of the records in which plurality was imputed are flagged on the data set.

#### *Additional data fields*

A “Birth ID” field was created to indicate whether a record was a live birth which survived the first year of life, a live birth which did not survive the first year, or a fetal death. Records that were not matched were retained on the file to allow comparison of their data with those of matched records. A “set completeness” flag was generated to distinguish between records that were members of complete sets (2 of 2 twins, or 3 of 3 triplets, or 4 of 4 quadruplets), records that were members of incomplete sets (2 of 3 triplets; or 2 or 3 of 4 quadruplets), or records that were unmatched (1 of 2 twins, or 1 of 3 triplets, or 1 of 4 quadruplets).

A “set birth order” field was developed to capture the order of births born within the twin, triplet, or quadruplet set, an item not included in the traditional live birth data set. The set birth order field is derived from the total birth order (live births and fetal deaths). Where the total birth order of all records is stated, the set birth order follows the chronology of the total birth order except that the set birth order for the first born of the set is coded as “1”, the second born as “2”, the third born (for triplets) as “3”, and the fourth born (for quadruplets) as “4.” For example, if the total birth order for one record of a twin set is “5” and for the other record, “6”, the set birth order for the first record is “1” and the second record is “2.”

The set birth order was imputed where possible for twins where one record had a total birth order of 1 and the total birth order of the second record was “not stated.” In this case we know that the first record was the firstborn of the set because the total birth order was “1”. Thus, the set order of the record with the “not stated” total birth order would be imputed to “2”; which occurred in 0.04 percent of twin records (272 twin records). For triplet and quadruplet sets, set order was imputed where 2 of 3 records (triplets) and 3 of 4 records (quadruplets) had valid, consecutive total set orders which included “1.” A limitation of the derived variable “set order” is the high percent not stated (10.7 percent for matched records). In general, there is confusion in reporting total birth order for plural sets which often results in inconsistent birth orders between set members (e.g. both set members have the same total birth order). In situations where the total birth order is inconsistent between set members, the set birth order was coded as “not stated”.

#### *Acknowledgments*

This file was developed in the Division of Vital Statistics under the general direction of Stephanie Ventura, Chief of the Reproductive Statistics Branch (RSB). Brady Hamilton and Martha Munson, also of RSB, provided technical review. Candace Cosgrove, of the Systems, Programming, and Statistical Resources Branch (SPSRB) updated and augmented the programming originally developed by Margaret Saulnier. Staff of the

Data Acquisition and Evaluation Branch carried out quality evaluation and acceptance procedures for the State data files on which this report is based. The Registration Methods staff of the Division of Vital Statistics consulted with State vital statistics offices regarding the collection of birth certificate data.

Questions on the file should be directed to the Joyce Martin (301) 458-4362, or Brady Hamilton (301) 458-4653 of the Reproductive Statistics Branch, Division of Vital Statistics, NCHS, 3311 Toledo Road, Room 7318, Hyattsville, Maryland 20782.

## **1995-2000 Detail Matched Multiple Birth File Record**

Item	Field
Location	Name
	Item and Code Outline

1 [BIRTHID] BIRTH ID

- 1 ... Live multiple birth/survived first year
- 2 ... Live multiple birth/did not survive first year
- 3 ... Fetal death

2-5 RESERVED POSITIONS

6 [TABFLAG] TABULATION INCLUSION FLAG

The majority of fetal death tables published by NCHS/DVS include only those fetal deaths with stated or presumed gestation of 20 weeks or more, see the Technical Appendix. This position is used to indicate which records to exclude in these tables.

- 1 ... Under 20 weeks (excluded)
- 2 ... 20 weeks or more (included)

7 [PLURALITY]

- 2 ... Twin
- 3 ... Triplet
- 4 ... Quadruplet

8-13 [SETID] SET IDENTIFICATION NUMBER

000001 ... Unique number assigned to each set of twins, triplets,  
to quadruplets, quintuplets, and other higher order multiple  
999999 births.

14 [SEQNO] SEQUENCE NUMBER

1 - 4 ... The sequence number of the birth within the set. Ordered by certificate number unless a fetal death.

15-20 RESERVED POSITIONS

21 [PLUIMP] PLURALITY IMPUTATION FLAG

0 ... Plurality is not imputed

1 ... Plurality is imputed

22 [FLGCOMP] SET COMPLETENESS FLAG

0 ... Record is member of a complete set

1 ... Record is member of an incomplete set

2 ... Record is unmatched

23 [FLGRECS] NUMBER OF RECORDS IN THE SET

This field allows the correct number of records in the set to be read for processing. This field must be used when programming incomplete sets or unmatched records.

2-4 ... Value equals plurality (for complete sets).

1-3 ... Value equals the number of records in the set (for incomplete sets)

1 ... Value equals 1 (for single unmatched records).

24 [SETORDER] SET BIRTH ORDER

0 ... Single unmatched births

1-4 ... Order of the fetuses delivered within the set

9 ... Not stated

25 [RECTYPE] RECORD TYPE

1 ... RESIDENT: State and county of occurrence and residence are the same.

2 ... NONRESIDENT: State and/or county

of occurrence and residence are different.

26 [RESTATUS] RESIDENT STATUS

- 1 ... RESIDENT:  
State and county of occurrence and residence are the same.
- 2 ... INTRASTATE NONRESIDENT:  
State of occurrence and residence are the same, but county is different.
- 3 ... INTERSTATE NONRESIDENT:  
State of occurrence and residence are different, but both are in the U.S.
- 4 ... FOREIGN RESIDENT:  
State of occurrence is one of the 50 States or the District of Columbia, but the residence of the mother is outside of the U.S.

27 [PLDEL] PLACE OR FACILITY OF BIRTH

- 1 ... Hospital
- 2 ... Freestanding Birthing Center
- 3 ... Clinic or Doctor's Office
- 4 ... A Residence
- 5 ... Other
- 9 ... Unknown or Not Stated

28 [BIRATTND] ATTENDANT AT BIRTH

- 1 ... Doctor of Medicine (M.D.)
- 2 ... Doctor of Osteopathy (D.O.)
- 3 ... Certified Nurse Midwife (C.N.M.)
- 4 ... Other Midwife
- 5 ... Other
- 9 ... Unknown or Not Stated

29-38 RESERVED POSITIONS

39 [MAGERFLG] REPORTED AGE OF MOTHER USED FLAG

This position is flagged whenever the mother's reported age in years is used. The reported age is used, if valid, when age derived from date of birth is not available or when it is outside of the 10-49 code range for 1995 and 1996, and outside the 10-54 code range for 1997 to 2000.

Blank ... Reported age is not used  
1 ... Reported age is used

40 [MAGEIMP] AGE OF MOTHER IMPUTATION FLAG

Blank ... Age is not imputed  
1 ... Age is imputed

41-42 [DMAGE] AGE OF MOTHER

This item is: a) computed using dates of birth of mother and of child when available and if valid; b) reported and valid; or c) imputed. This is the age item used in NCHS publications.

15 ...Under 15 years  
16-49 ... 16-49 years. Age in single years  
50 ...50 years and greater (births to women of this age group available for 1997 to 2000 only)

43-45 RESERVED POSITIONS

46 [ORRACEM] HISPANIC ORIGIN AND RACE OF MOTHER RECODE

Origin is not reported by all areas for fetal Deaths. See reporting flags.

1 ... Total Hispanic  
2 ... Non-Hispanic White  
3 ... Non-Hispanic Black  
4 ... Non-Hispanic other races  
9 ... Origin unknown or not stated

47 [MRACEIMP] RACE OF MOTHER IMPUTATION FLAG

Blank ... Race is not imputed  
1 ... Unknown race is imputed

2 ... All other races, formerly code 09,  
is imputed

48-49 [MRACE] RACE OF MOTHER

Beginning with 1992 data, some areas started Reporting additional Asian or Pacific Islander Codes for race. See reporting flags. Codes 18-68 replace old code 08 for these areas. Code 78 replaces old code 08 for all other areas. For consistency with Census races, code 09 (all other races) used prior to 1992 has been imputed.

01 ... White  
02 ... Black  
03 ... Other races

50-57 RESERVED POSITIONS

58-59 [DMEDUC] EDUCATION OF MOTHER DETAIL

00 ... No formal education  
  
01-08 ... Years of elementary school  
09 ... 1 year of high school  
10 ... 2 years of high school  
11 ... 3 years of high school  
12 ... 4 years of high school  
13 ... 1 year of college  
14 ... 2 years of college  
15 ... 3 years of college  
16 ... 4 years of college  
17 ... 5 or more years of college  
99 ... Not stated

60 [MEDUC6] EDUCATION OF MOTHER RECODE

1 ... 0 - 8 years  
2 ... 9 - 11 years  
3 ... 12 years  
4 ... 13 - 15 years  
5 ... 16 years and over  
6 ... Not stated

61 [DMARIMP] MARITAL STATUS OF MOTHER IMPUTATION FLAG  
Not applicable to fetal deaths.

Blank ... Marital Status is not imputed  
1 ... Marital Status is imputed

62 [DMAR] MARITAL STATUS OF MOTHER

1 ... Married  
2 ... Unmarried  
9 ... Unknown or not stated

63 [MPLBIRR] PLACE OF BIRTH OF MOTHER RECODE

1 ... Native born  
2 ... Foreign born  
3 ... Unknown or not stated

64-65 [DMAGERPT] REPORTED AGE OF MOTHER

15 ... Under 15 years  
16-49 ... 16-49 years. Age in single years  
50 ... 50 years and greater (births to women of this age group  
available for 1997 to 2000 only)  
99 ... Unknown or not stated

66-67 [DLIVORD] DETAIL LIVE BIRTH ORDER

Sum of live births now living and now dead plus  
one. If either item is unknown, this item is  
made unknown.

00-31 ... Number of children born alive to  
mother  
99 ... Unknown

68 [LIVORD9] LIVE BIRTH ORDER RECODE

1 ... First Child  
2 ... Second Child  
3 ... Third Child  
4 ... Fourth Child  
5 ... Fifth Child  
6 ... Sixth Child  
7 ... Seventh Child  
8 ... Eighth Child and over

9 ... Unknown or not stated

69-70 [DTOTORD] DETAIL TOTAL BIRTH ORDER

Sum of live birth order and other terminations.  
If either item is unknown, this item is made  
unknown.

01-40 ... Total number of live births and  
other terminations.

99 ... Unknown

71 [TOTORD9] TOTAL BIRTH ORDER RECODE

1 ... First Child  
2 ... Second Child  
3 ... Third Child  
4 ... Fourth Child  
5 ... Fifth Child  
6 ... Sixth Child  
7 ... Seventh Child  
8 ... Eighth Child and over  
9 ... Unknown or not stated

72-73 [MONPRE] DETAIL MONTH OF PREGNANCY PRENATAL CARE BEGAN

00 ... No prenatal care  
01 ... 1st month  
02 ... 2nd month  
03 ... 3rd month  
04 ... 4th month  
05 ... 5th month  
06 ... 6th month  
07 ... 7th month  
08 ... 8th month  
09 ... 9th month  
99 ... Unknown or not stated

74-75 [NPREVIST] TOTAL NUMBER OF PRENATAL VISITS

00 ... No prenatal visits  
01-48 ... Stated number of visits  
49 ... 49 or more visits  
99 ... Unknown or not stated

76-83        RESERVED POSITIONS

84        [FAGERFLG] REPORTED AGE OF FATHER USED FLAG

This position is flagged whenever the father's reported age in years is used. The reported age is used, if valid, when age derived from date of birth is not available or when it is less than 10.

85-86        [DFAGE]    AGE OF FATHER

This item is either computed from date of birth of father and of child or is the reported age.  
This is the age item used in NCHS publications.

19        ...Under 20  
20-59     ...20-59. Age in single years  
60        ...60 years and greater  
99        ....Unknown or not stated

87-88        [FRACE]    RACE OF FATHER

01        ... White  
02        ... Black  
03        ... Other races  
99        ... Unknown or not stated

89-90        [DFAGERPT] REPORTED AGE OF FATHER

10-98     ...Age in single years  
99        ...Unknown or not stated

91        [FRACEIMP] RACE OF FATHER IMPUTATION FLAG

(Unknown race of father is not imputed. However, the all other races code is changed to unknown.)

Blank     ... Race is not changed  
3        ... All other races, formerly code 09,  
            is changed to code 99

92-99        RESERVED POSITIONS

100 [GESTESTM] CLINICAL ESTIMATE OF GESTATION USED FLAG

This position is flagged whenever the clinical estimate of gestation is used. It is used when gestation could not be computed or when the computed gestation is outside the 17-47 code range.

Blank ... Clinical Estimate is not used  
1 ... Clinical Estimate is used

101 [GESTIMP] GESTATION IMPUTATION FLAG

Blank ... Gestation is not imputed  
1 ... Gestation is imputed

102-103 [GESTAT] GESTATION - DETAIL IN WEEKS

This item is: a) computed using dates of birth of child and last normal menses; b) imputed from LMP date; c) the clinical estimate; or d) unknown when there is insufficient data to impute or no valid clinical estimate. This is the gestation item used in NCHS publications.

17-47 ... 17th through 47th week of gestation  
99 ... Unknown

104 [CSEXIMP] SEX IMPUTATION FLAG

Blank ... Sex is not imputed  
1 ... Sex is imputed

105 [CSEX] SEX

1 ... Male  
2 ... Female  
9 ... Unknown (fetal deaths of < 20 weeks gestation only)

106-109 [DBIRWT] BIRTH WEIGHT - DETAIL IN GRAMS

0227-8165 ... Number of grams  
(Range edited for 227-8165 for live births and infant deaths.)  
9999 ... Not stated birth weight

110-111 [BIRWT12] BIRTH WEIGHT RECODE 12

- 01 ... 499 grams or less
- 02 ... 500 - 999 grams
- 03 ... 1000 - 1499 grams
- 04 ... 1500 - 1999 grams
- 05 ... 2000 - 2499 grams
- 06 ... 2500 - 2999 grams
- 07 ... 3000 - 3499 grams
- 08 ... 3500 - 3999 grams
- 09 ... 4000 - 4499 grams
- 10 ... 4500 - 4999 grams
- 11 ... 5000 - 8165 grams
- 12 ... Not stated

112-113 [FMAPS] FIVE MINUTE APGAR SCORE

Apgar Score is not reported by all areas. See reporting flags.

- 00-10 ... A score of 0-10
- 99 ... Unknown or not stated

114 [FMAPSR] FIVE MINUTE APGAR SCORE RECODE

Apgar score is not reported by all areas. See reporting flags

- 1 ... A score of 0-3
- 2 ... A score of 4-6
- 3 ... A score of 7-8
- 4 ... A score of 9-10
- 5 ... Not stated

115-116 [CLINGEST] CLINICAL ESTIMATE OF GESTATION

Clinical estimate is not reported by all areas. See reporting flags.

- 17-47 ... Estimated gestation in weeks
- 99 ... Unknown or not stated

117-123 [DELMETH] METHOD OF DELIVERY

Each method is assigned a separate position, and the code structure for each method (position) is:

- 1 ... The method was used

- 2 ... The method was not used
- 8 ... Method not on certificate
- 9 ... Method unknown or not stated

117 [VAGINAL] VAGINAL

118 [VBAC] VAGINAL BIRTH AFTER PREVIOUS C-SECTION

119 [PRIMAC] PRIMARY C -SECTION

120 [REPEAC] REPEAT C -SECTION

121 [FORCEP] FORCEPS

122 [VACUUM] VACUUM

123 [HYSTER] HYSTEROTOMY/HYSTERECTOMY  
(Applicable only to fetal deaths)

124 [DELMETH6] METHOD OF DELIVERY RECODE

- 1 ... Vaginal (excludes vaginal after previous C-section)
- 2 ... Vaginal birth after previous C-section
- 3 ... Primary C -section
- 4 ... Repeat C -section
- 5 ... Not stated
- 6 ... Hysterotomy/Hysterectomy (fetal deaths only)

125-141 [MEDRISK] MEDICAL RISK FACTORS

Each risk factor is assigned a separate position, and the code structure for each risk factor (position) is:

- 1 ... Factor reported
- 2 ... Factor not reported
- 8 ... Factor not on certificate
- 9 ... Factor not classifiable

125 [ANEMIA] ANEMIA (HCT.<30/HGB.<10)

126 [CARDIAC] CARDIAC DISEASE

- 127 [LUNG] ACUTE OR CHRONIC LUNG DISEASE
- 128 [DIABETES] DIABETES
- 129 [HERPES] GENITAL HERPES
- 130 [HYDRA] HYDRAMNIOS/OLIGOHYDRAMNIOS
- 131 [HEMO] HEMOGLOBINOPATHY
- 132 [CHYPER] HYPERTENSION, CHRONIC
- 133 [PHYPER] HYPERTENSION, PREGNANCY-ASSOCIATED
- 134 [ECLAMP] ECLAMPSIA
- 135 [INCERVIX] INCOMPETENT CERVIX
- 136 [PRE4000] PREVIOUS INFANT 4000+ GRAMS
- 137 [PRETERM] PREVIOUS PRETERM OR SMALL-FOR-GESTATIONAL-AGE INFANT
- 138 [RENAL] RENAL DISEASE
- 139 [RH] RH SENSITIZATION
- 140 [UTERINE] UTERINE BLEEDING
- 141 [OTHERMR] OTHER MEDICAL RISK FACTORS
- 142-145 [TOBACRSK] TOBACCO RISKS
- 142 [TOBACCO] TOBACCO USE DURING PREGNANCY
- 1 ... Yes  
2 ... No  
9 ... Unknown or not stated
- 143-144 [CIGAR] AVERAGE NUMBER OF CIGARETTES PER DAY
- 00-97 ... As stated  
98 ... 98 or more cigarettes per day  
99 ... Unknown or not stated
- 145 [CIGAR6] AVERAGE NUMBER OF CIGARETTES PER DAY RECODE

0 ... Nonsmoker  
1 ... 1 - 5 cigarettes per day  
2 ... 6 - 10 cigarettes per day  
3 ... 11 - 20 cigarettes per day  
4 ... 21 - 40 cigarettes per day  
5 ... 41 or more cigarettes per day  
6 ... Unknown or not stated

146-149 [ALCOHRSK] ALCOHOL

146 [ALCOHOL] ALCOHOL USE DURING PREGNANCY

1 ... Yes  
2 ... No  
9 ... Unknown or not stated

147-148 [DRINK] AVERAGE NUMBER OF DRINKS PER WEEK

00-97 ... As stated  
98 ... 98 or more drinks per week  
99 ... Unknown or not stated

149 [DRINK5] AVERAGE NUMBER OF DRINKS PER WEEK RECODE

0 ... Non drinker  
1 ... 1 drink per week  
2 ... 2 drinks per week  
3 ... 3 - 4 drinks per week  
4 ... 5 or more drinks per week  
5 ... Unknown or not stated

150-152 [WTGANRSK] WEIGHT GAIN DURING PREGNANCY

150-151 [WTGAIN] WEIGHT GAIN

00-97 ... Stated number of pounds  
98 ... 98 pounds or more  
99 ... Unknown or not stated

152 [WTGAIN9] WEIGHT GAIN RECODE

1 ... Less than 16 pounds  
2 ... 16 - 20 pounds  
3 ... 21 - 25 pounds

- 4 ... 26 - 30 pounds
- 5 ... 31 - 35 pounds
- 6 ... 36 - 40 pounds
- 7 ... 41 - 45 pounds
- 8 ... 46 or more pounds
- 9 ... Unknown or not stated

153-159 [OBSTETRC] OBSTETRIC PROCEDURES

Each procedure is assigned a separate position,  
and the code structure for each procedure  
(position) is:

- 1 ... Procedure reported
- 2 ... Procedure not reported
- 8 ... Procedure not on certificate
- 9 ... Procedure not classifiable

153 [AMNIO] AMNIOCENTESIS

154 [MONITOR] ELECTRONIC FETAL MONITORING

155 [INDUCT] INDUCTION OF LABOR

156 [STIMULA] STIMULATION OF LABOR

157 [TOCOL] TOCOLYSIS

158 [ULTRAS] ULTRASOUND

159 [OTHEROB] OTHER OBSTETRIC PROCEDURES

160-175 [LABOR] COMPLICATIONS OF LABOR AND/OR DELIVERY

Each complication is assigned a separate position,  
and the code structure for each complication  
(position) is:

- 1 ... Complication reported
- 2 ... Complication not reported
- 8 ... Complication not on certificate
- 9 ... Complication not classifiable

160 [FEBRILE] FEBRILE (>100 DEGREES F. OR 38 DEGREES C.)

161	[MECONIUM]	MECONIUM, MODERATE/HEAVY
162	[RUPTURE]	PREMATURE RUPTURE OF MEMBRANE (>12 HOURS)
163	[ABRUPTIO]	ABRUPTIO PLACENTA
164	[PREPLACE]	PLACENTA PREVIA
165	[EXCEBLD]	OTHER EXCESSIVE BLEEDING
166	[SEIZURE]	SEIZURES DURING LABOR
167	[PRECIP]	PRECIPITOUS LABOR (<3 HOURS)
168	[PROLONG]	PROLONGED LABOR (>20 HOURS)
169	[DYSFUNC]	DYSFUNCTIONAL LABOR
170	[BREECH]	BREECH/MALPRESENTATION
171	[CEPHALO]	CEPHALOPELVIC DISPROPORTION
172	[CORD]	CORD PROLAPSE
173	[ANESTHE]	ANESTHETIC COMPLICATIONS
174	[DISTRESS]	FETAL DISTRESS
175	[OTHERLB]	OTHER COMPLICATION OF LABOR AND/OR DELIVERY
176-184	[NEWBORN]	ABNORMAL CONDITIONS OF THE NEWBORN

Not applicable to fetal deaths.  
 Each condition is assigned a separate position,  
 and the code structure for each condition  
 (position) is:

- 1 ... Condition reported
- 2 ... Condition not reported
- 8 ... Condition not on certificate
- 9 ... Condition not classifiable

176	[NANEMIA]	ANEMIA (HCT.<39/HGB.<13)
-----	-----------	--------------------------

177 [INJURY] BIRTH INJURY  
178 [ALCOSYN] FETAL ALCOHOL SYNDROME  
179 [HYALINE] HYALINE MEMBRANE DISEASE  
180 [MECONSYN] MECONIUM ASPIRATION SYNDROME  
181 [VENL30] ASSISTED VENTILATION, LESS THAN 30 MINUTES  
182 [VEN30M] ASSISTED VENTILATION, 30 MINUTES OR MORE  
183 [NSEIZ] SEIZURES  
184 [OTHERAB] OTHER ABNORMAL CONDITIONS OF THE NEWBORN  
185-206 [CONGENIT] CONGENITAL ANOMALIES

Each anomaly is assigned a separate position,  
and the code structure for each anomaly  
(position) is:

- 1 ... Anomaly reported
- 2 ... Anomaly not reported
- 8 ... Anomaly not on certificate
- 9 ... Anomaly not classifiable

185 [ANEN] ANENCEPHALUS  
186 [SPINA] SPINA BIFIDA/MENINGOCELE  
187 [HYDRO] HYDROCEPHALUS  
188 [MICROCE] MICROCEPHALUS  
189 [NERVOUS] OTHER CENTRAL NERVOUS SYSTEM ANOMALIES  
190 [HEART] HEART MALFORMATIONS  
191 [CIRCUL] OTHER CIRCULATORY/RESPIRATORY ANOMALIES  
192 [RECTAL] RECTAL ATRESIA/STENOSIS  
193 [TRACHEO] TRACHEO - ESOPHAGEAL FISTULA/ESOPHAGEAL ATRESIA

- 194 [OMPHALO] OMPHALOCELE/GASTROSCHISIS
- 195 [GASTRO] OTHER GASTROINTESTINAL ANOMALIES
- 196 [GENITAL] MALFORMED GENITALIA
- 197 [RENALAGE] RENAL AGENESIS
- 198 [UROGEN] OTHER UROGENITAL ANOMALIES
- 199 [CLEFTLP] CLEFT LIP/PALATE
- 200 [ADACTYLY] POLYDACTYLY/SYNDACTYLY/ADACTYLY
- 201 [CLUBFOOT] CLUB FOOT
- 202 [HERNIA] DIAPHRAGMATIC HERNIA
- 203 [MUSCULO] OTHER MUSCULOSKELETAL/INTEGUMENTAL ANOMALIES
- 204 [DOWNS] DOWN'S SYNDROME
- 205 [CHROMO] OTHER CHROMOSOMAL ANOMALIES
- 206 [OTHERCON] OTHER CONGENITAL ANOMALIES
- 207-227 [FLRES] REPORTING FLAGS FOR PLACE OF RESIDENCE

These positions contain flags to indicate whether or not the specified item is included in the report of fetal death or live birth certificate of the State of residence.

The code structure for each flag (position) is:

- 0 ... The item is not reported.
- 1 ... The item is reported or partially reported.

- 207 [FLGESTALL] ALL GESTATIONS REPORTED  
(Applicable only to fetal deaths)
- 208 [FLGORIGM] ORIGIN OF MOTHER
- 209 [FLGORIGF] ORIGIN OF FATHER

210 [FLGDMARF] MARITAL STATUS  
(Applicable only to fetal deaths)

211 [FLGLMP] DATE OF LAST NORMAL MENSES  
(Applicable only to fetal deaths)

212 [FLGPNVF] NUMBER OF PRENATAL VISITS  
(Applicable only to fetal deaths)

213 [FLGGESTE] CLINICAL ESTIMATE OF GESTATION

214 [FLGFMAPS] 5 - MINUTE APGAR SCORE

215 [FLGDELMT] METHOD OF DELIVERY

216 [FLGMEDRS] MEDICAL RISK FACTORS

217 [FLGTOBUSE] TOBACCO USE

218 [FLGCIGARS] NUMBER OF CIGARETTES  
(Applicable only to fetal deaths)

219 [FLGALCUSE] ALCOHOL USE

220 [FLGDRINKS] NUMBER OF DRINKS  
(Applicable only to fetal deaths)

221 [FLGWTGN] WEIGHT GAIN

222 [FLGOBSTRC] OBSTETRIC PROCEDURES

223 [FLGLABOR] COMPLICATIONS OF LABOR AND/OR DELIVERY

224 [FLGABNML] ABNORMAL CONDITIONS OF NEWBORN

225 [FLGCONG] CONGENITAL ANOMALIES

226 [FLGEDUC] EDUCATION OF MOTHER (BASED ON MSA)

227 RESERVED POSITION

Locations 1 - 227 contain data from the fetal death records, the infant death records, and multiple live births from the natality file. The remaining fields on the record are from the infant death record only.

228-230 [AGED] AGE AT DEATH IN DAYS

The generated age at death in days is calculated from the date of death on the death certificate minus the date of birth on the birth certificate unless the reported age of death is less than 2 days, then the reported age is used. If the exact date of birth and/or death is unknown, the age is imputed.

000-364 ... Number of days

231 [AGER5] INFANT AGE RECODE 5

1	... Under 1 hour
2	... 1-23 hours
3	... 1-6 days
4	... 7-27 days (late neonatal)
5	... 28 days and over (post-neonatal)

232-735 CAUSE OF DEATH DATA

Locations 323-735 contain data on cause of death. Cause of death data located in positions 232-483 were coded according to the 9<sup>th</sup> Revision of the ICD. Cause of death data located in positions 484-735 were coded according to the 10<sup>th</sup> Revision of the ICD.

232-483 ICD-9 DATA

232 [ACCIDPL9] PLACE OF ACCIDENT FOR CAUSES E850-E869 AND E880-E928

Blank ... Causes other than E850-E869 and E880-E928

0	... Home
1	... Farm
2	... Mine and quarry
3	... Industrial place and premises
4	... Place for recreation and sport
5	... Street and highway
6	... Public building
7	... Resident institution
8	... Other specified places
9	... Place of accident not specified

233-236 [UCOD9] ICD CODE (9th REVISION)

See the International Classification of Diseases, 1975 Revision, Volume 1. For injuries and poisoning, the external cause is coded (E800-E999) rather than the Nature of Injury (800-999). These positions do not include the letter E for the external cause of injury. For those causes that do not have a 4th digit, location 236 is blank.

237-239 [UCODR61] 61 INFANT CAUSE RECODE

A recode of the ICD cause code into 61 groups for NCHS publications. Further back in this document is a complete list of recodes and the causes included.

010-680 ... Code range(not inclusive)

240 - 381 [MULTCOND9] MULTIPLE CONDITIONS

See the "International Classification of Diseases", 1975 Revision, Volume 1. Both the entity-axis and record-axis conditions are coded according to this revision (9th).

240-241 [EANUM9] NUMBER OF ENTITY-AXIS CONDITIONS

00-20 ... Code range

242-381 [ENTITY9] ENTITY - AXIS CONDITIONS

Space has been provided for maximum of 20 conditions. Each condition takes 7 positions in the record. Records that do not have 20 conditions are blank in the unused area.

Position 1: Part/line number on certificate

- 1 ... Part I, line 1 (a)
- 2 ... Part I, line 2 (b)
- 3 ... Part I, line 3 (c)

- 4      ... Part I, line 4 (d)
- 5      ... Part I, line 5 (e)
- 6      ... Part II,

Position 2: Sequence of condition within part/line

1-7    ... Code range

Position 3 - 6:Condition code (ICD 9th Revision)

The codes are available online.

Position 7: Nature of Injury Flag

- 1      ... Indicates that the code in positions 3-6 is a Nature of Injury code
- 0      ... All other codes

242-248	1st Condition (9 <sup>th</sup> )
249-255	2nd Condition (9 <sup>th</sup> )
256-262	3rd Condition (9 <sup>th</sup> )
263-269	4th Condition (9 <sup>th</sup> )
270-276	5th Condition (9 <sup>th</sup> )
277-283	6th Condition (9 <sup>th</sup> )
284-290	7th Condition (9 <sup>th</sup> )
291-297	8th Condition (9 <sup>th</sup> )
298-304	9th Condition (9 <sup>th</sup> )
305-311	10th Condition (9 <sup>th</sup> )
312-318	11th Condition (9 <sup>th</sup> )
319-325	12th Condition (9 <sup>th</sup> )
326-332	13th Condition (9 <sup>th</sup> )
333-339	14th Condition (9 <sup>th</sup> )

340-346        15th Condition (9<sup>th</sup>)  
347-353        16th Condition (9<sup>th</sup>)  
354-360        17th Condition (9<sup>th</sup>)  
361-367        18th Condition (9<sup>th</sup>)  
368-374        19th Condition (9<sup>th</sup>)  
375-381        20th Condition (9<sup>th</sup>)

382-383    [RANUM9]    NUMBER OF RECORD-AXIS CONDITIONS

00-20    ... Code range

384-483    [RECORD9]    RECORD - AXIS CONDITIONS

Space has been provided for a maximum of 20 conditions. Each condition takes 5 positions in the record. Records that do not have 20 conditions are blank in the unused area.

Positions 1-4: Condition code (ICD 9th Revision)

Position 5: Nature of Injury Flag

1        ... Indicates that the code in  
            positions 2-5 is a Nature of Injury code  
0        ... All other codes

384-388        1st Condition (9<sup>th</sup>)  
389-393        2nd Condition (9<sup>th</sup>)  
394-398        3rd Condition (9<sup>th</sup>)  
399-403        4th Condition (9<sup>th</sup>)  
404-408        5th Condition (9<sup>th</sup>)  
409-413        6th Condition (9<sup>th</sup>)  
414-418        7th Condition (9<sup>th</sup>)

- 419-423        8th Condition (9<sup>th</sup>)
- 424-428        9th Condition (9<sup>th</sup>)
- 429-433        10th Condition (9<sup>th</sup>)
- 434-438        11th Condition (9<sup>th</sup>)
- 439-443        12th Condition (9<sup>th</sup>)
- 444-448        13th Condition (9<sup>th</sup>)
- 449-453        14th Condition (9<sup>th</sup>)
- 454-458        15th Condition (9<sup>th</sup>)
- 459-463        16th Condition (9<sup>th</sup>)
- 464-468        17th Condition (9<sup>th</sup>)
- 469-473        18th Condition (9<sup>th</sup>)
- 474-478        19th Condition (9<sup>th</sup>)
- 479-483        20th Condition (9<sup>th</sup>)
- 484-736        ICD-10 DATA
- 484            [ACCIDPL10] PLACE OF INJURY FOR CAUSES W00-Y34, except Y06.- and Y07.-
- |       |  |
|-------|--|
| 0     | ... Home   |
| 1     | ... Residential institution                                  |
| 2     | ... School, other institution and public administrative area |
| 3     | ... Sports and athletic area                                 |
| 4     | ... Street and highway                                       |
| 5     | ... Trade and service area                                   |
| 6     | ... Industrial and construction area                         |
| 7     | ... Farm   |
| 8     | ... Other specified places                                   |
| 9     | ... Unspecified place  |
| Blank | ... Causes other than W00-Y34, except Y06.- and Y07.-        |
- 485-488        [UCOD10]    ICD Code (10<sup>th</sup> Revision)

See the International Classification of Diseases, 1992 Revision, Volume 1.

489-491 [UCODR130] 130 Infant Cause Recode

A recode of the ICD cause code into 130 groups for NCHS publications. Further back in this document is a complete list of recodes and the causes included.

001-158 ... Code range (not inclusive)

492-735 [MULTCOND10] Multiple Conditions

See the International Classification of Diseases, 1992 Revision, Volume 1. Both the entity-axis and record-axis conditions are coded according to this revision (10th).

492-493 [EANUM10] Number of Entity-Axis Conditions

00-20 ... Code range

494-633 [ENTITY10] ENTITY - AXIS CONDITIONS

Space has been provided for a maximum of 20 conditions. Each condition takes 7 positions in the record. **The 7<sup>th</sup> position will be blank.** Records that do not have 20 conditions are blank in the unused area.

Position 1: Part/line number on certificate

- 1 ... Part I, line 1 (a)
- 2 ... Part I, line 2 (b)
- 3 ... Part I, line 3 (c)
- 4 ... Part I, line 4 (d)
- 5 ... Part I, line 5 (e)
- 6 ... Part II,

Position 2: Sequence of condition within part/line

1-7 ... Code range

Position 3 - 6: Condition code (ICD 10th Revision)

494-500 1st Condition (10<sup>th</sup>)

501-507 2nd Condition (10<sup>th</sup>)

508-514	3rd Condition (10 <sup>th</sup> )
515-521	4th Condition (10 <sup>th</sup> )
522-528	5th Condition (10 <sup>th</sup> )
529-535	6th Condition (10 <sup>th</sup> )
536-542	7th Condition (10 <sup>th</sup> )
543-549	8th Condition (10 <sup>th</sup> )
550-556	9th Condition (10 <sup>th</sup> )
557-563	10th Condition (10 <sup>th</sup> )
564-570	11th Condition (10 <sup>th</sup> )
571-577	12th Condition (10 <sup>th</sup> )
578-584	13th Condition (10 <sup>th</sup> )
585-591	14th Condition (10 <sup>th</sup> )
592-598	15th Condition (10 <sup>th</sup> )
599-605	16th Condition (10 <sup>th</sup> )
606-612	17th Condition (10 <sup>th</sup> )
613-619	18th Condition (10 <sup>th</sup> )
620-626	19th Condition (10 <sup>th</sup> )
627-633	20th Condition (10 <sup>th</sup> )
634-635	[RANUM10] Number of Record-Axis Conditions

00-20        ...        Code range

636-735 [RECORD] RECORD - AXIS CONDITIONS

Space has been provided for a maximum of 20 conditions. Each condition takes 5 positions in the record. **The 5<sup>th</sup> position will be blank.** Records that

do not have 20 conditions are blank in the unused area.

Positions 1-4: Condition code (ICD10th Revision)

636-640        1st Condition (10<sup>th</sup>)

641-645        2nd Condition (10<sup>th</sup>)

646-650        3rd Condition (10<sup>th</sup>)

651-655        4th Condition (10<sup>th</sup>)

656-660        5th Condition (10<sup>th</sup>)

661-665        6th Condition (10<sup>th</sup>)

666-670        7th Condition (10<sup>th</sup>)

671-675        8th Condition (10<sup>th</sup>)

676-680        9th Condition (10<sup>th</sup>)

681-685        10th Condition (10<sup>th</sup>)

686-690        11th Condition (10<sup>th</sup>)

691-695        12th Condition (10<sup>th</sup>)

696-700        13th Condition (10<sup>th</sup>)

701-705        14th Condition (10<sup>th</sup>)

706-710        15th Condition (10<sup>th</sup>)

711-715        16th Condition (10<sup>th</sup>)

716-720        17th Condition (10<sup>th</sup>)

721-725        18th Condition (10<sup>th</sup>)

726-730        19th Condition (10<sup>th</sup>)

731-735        20th Condition (10<sup>th</sup>)

736        [RESSTATD] RESIDENT STATUS - DEATH

- 1     ... RESIDENTS:  
          State and county of occurrence  
          and residence are the same.
- 2     ... INTRASTATE NONRESIDENTS:  
          State of occurrence and residence  
          are the same, but county is  
          different.
- 3     ... INTERSTATE NONRESIDENTS:  
          State of occurrence and residence  
          are different, but both are in the  
          50 States and D.C.
- 4     ... FOREIGN RESIDENTS:  
          State of occurrence is one of the  
          50 States or the District of  
          Columbia, but place of residence  
          of mother is outside of the 50  
          States and D.C.

737-753    RESERVED POSITIONS

754       [HOSPD]    HOSPITAL AND PATIENT STATUS

- 1     ... Hospital, Clinic or Medical  
          Center - Inpatient
- 2     ... Hospital, Clinic or Medical  
          Center - Outpatient or admitted to  
          Emergency Room
- 3     ... Hospital, clinic or medical  
          center - Dead on arrival
- 4     ... Hospital, Clinic or Medical  
          Center - patient status unknown
- 5     ... Nursing home
- 6     ... Residence
- 7     ... Other
- 9     ... Place of death unknown