THE MATCHED MULTIPLE BIRTH and FETAL DEATH FILE 2016-2020

The Matched Multiple Birth and Fetal Death data set 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 fetal deaths in multiple deliveries but historically 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. Whereas recommendations for the 2003 revision of the standard U.S. Certificate of Live Birth and Report of Fetal Death included instructions for states to report a unique value to identify sets of births and fetal deaths in multiples deliveries, not all report this information and, accordingly, linkage information is not available on a national level.

The 2016-2020 Matched Multiple Birth and Fetal Death data set includes records of all births and fetal deaths of 20 weeks and more to U.S. residents reported in a multiple delivery (i.e., twins, triplets and quadruplets) occurring in 2016, 2017, 2018, 2019 and 2020. Deaths up to one year of age occurring to infants born in these years are also included. A total of 641,934 records, (633,734 birth and 8,200 fetal death records) are included in the data set. Records for the 7,193 infant deaths of infants born in multiple deliveries in these years were linked to their corresponding birth record (Figure 1).

To match the members of multiple deliveries, all records reported as twins, triplets and quadruplets in the restricted use U.S. Live Birth and Fetal Death Files for 2016-2020 were identified. All live birth and fetal death records with pluralities of 2, 3 or 4, indicating that the event occurred in a twin, triplet or quadruplet delivery, were selected for matching. Only fetal deaths of 20 completed weeks of gestation or more, the minimum reporting requirement for fetal deaths for all states, are included in the file.

For confidentiality reasons, births in quintuplet and higher order multiple deliveries were not included in the file.

Matching process

Variables

Variables from the restricted and public use birth and fetal files were used to match sets of twins, triplets and quadruplets. Variables used in the matching process to uniquely identify the pregnancy were: plurality (PLURAL), state (XOSTATE) and county of occurrence (OCNTYFIPS), facility ID (FACIDS), and mother's date of birth (DOBM_YY, DOBM_MM, DOBM_DD) (Figure 2). The name and address of the mother are not collected by NCHS due to confidentiality considerations.

Process

First, the birth and fetal files for one year were combined and a temporary match variable was created from the variables listed above for each birth and fetal death record for which PLURAL=2. An algorithm was created to identify records with identical values for the temporary match variables and complementary values for the variable SETORDER (that is, the order delivered in the set, or records in a twin set would have SETORDER=1 for one record and SETORDER=2 for the corresponding record). Once matched, the records of each set were assigned identical values for the match variable, MULTID. Thus, each birth and fetal death record in a multiple delivery share the same MULTID value.

Records that were not matched using this process were reviewed for missing data or obvious data entry errors and matched "manually." Date of birth of infant or delivery was used to enhance the accuracy of manual matches to compensate for incorrect or missing data on the variables used in the algorithm. This matching process was repeated for records for which PLURAL=3 and PLURAL=4 for each year of data.

Verification of matching process

States report a variable (MATCH) to NCHS which is intended to identify sets of multiple births/fetal deaths. The MATCH variable was not used to match sets of multiple births because of high levels of missing or invalid match numbers in many states (Table A).

To assess the accuracy of the matching process, results from two large states which reported valid MATCH values were compared with the results of the matching process described above. This process verified that the MULTID variable accurately matches infants and fetal deaths in multiple birth sets; the match rates were above 99%.

Inclusion of infant deaths

To better analyze outcomes for multiple delivery sets, information on infant deaths, including age of death and cause of death, is included in the Matched Multiple File. Using the linked birth/infant death numerator files, records of infants born in each year included in the file were matched to the corresponding birth record. Information pertaining to the death (e.g., month, year and weekday of death, cause of death) was appended to the birth record. Thus, the matched multiple file contains all births and fetal deaths in twin, triplet and quadruplet deliveries, as well as linked infant deaths (Figure 2). For infants born in twin sets (complete and incomplete), the mortality rate was 10.82 deaths per 1,000 births, it was 29.17 for infants in triplet sets and 46.98 for infants born in quadruplet sets. Mortality rates were higher for unmatched multiple births; for compete sets of twins the infant mortality rate for twins in complete sets was 10.14 compared with 93.79 for unmatched twins.

Additional variables created for the matched multiple file

The variable, MULTID, was created for each record where PLURAL = 2, 3 or 4. Matched records in a set share the same MULTID value. A set completeness variable, COUNT, was also created to indicate the number of records (birth and fetal death) matched within a set. Used together, COUNT and PLURAL provide information on the completeness of a match. A set completeness variable, COMPLETE, was created based on PLURAL and COUNT to indicate

whether the record belongs to a complete (1) or incomplete (2) set (Table B). The overall completeness for all pluralities for the four years is 98.96%; it is highest for twins (99.04%) followed by triplets (96.44%) and quadruplets (90.03%).

In addition to the variables COUNT and COMPLETE, the variable BIRTHID was created to indicate whether a record represents a 1) live birth and survived the first year, 2) live birth and died in the first year or 3) a fetal death. The variables BIRTH, DEATH and FETALD serve as flags. BIRTH = 1 for all birth records; it is missing for fetal deaths. FETALD = 1 for all fetal death records; it is missing for live births. DEATH = 1 for all records in which a death occurred to a live birth; it is missing for all other records. Records of a live birth that died in the first year of life have a value of 1 for both BIRTH and DEATH.

Table 1 presents numbers of births, infant deaths and fetal deaths by plurality and whether records were part of a matched, unmatched or incomplete set. Tables 2A-2C present the number of matched sets by perinatal outcome for twins (Table 2A), triplets (Table 2B) and quadruplets (Table 2C).

Position	FD/ID	Variable Name	Description	Values	Definition
1		PLURAL		2	Twin
				3	Triplet
				4	Quadruplet
2-7		MULTID	Matched ID in multiple delivery	100000-799999	
8		COUNT	No. of matched records in set	1	Unmatched record
				2	Two matched
				3	Three matched
				4	Four matched
9		COMPLETE	Member of complete set	1	Complete set
				2	Incomplete set
10		BIRTH	Live birth	1	Live birth
11		DEATH	Death of live birth	1	Infant death
12		FETAL	Fetal death	1	Fetal death
13		BIRTHID	Record category	1	Survivor
				2	Infant death
				3	Fetal death
14		BFACIL		1	Hospital
				2	Freestanding birth center
				3	Home (intended)
				4	Home (not intended)
				5	Home (unknown if intended)
				6	Clinic/Doctor office
				7	Other
				9	Unknown
15-16		MAGER	Maternal single year of age	12	10-12
				13-49	13-49
				50	50 and older
17		MAGER9	Maternal age recode	1	Younger than 15
				2	15-19
				3	20-24
				4	25-29
				5	30-34
				6	35-39
				7	40-44
				8	45-49
				9	50-54
18		MAGE_IMP	Maternal age imputed	Blank	Not imputed
				1	Imputed
19		NATIVITY	Maternal nativity	1	Born in US
				2	Born outside US (including possessions)
				3	Unknown
20		MRACEHISP	Maternal race/Hispanic origin	1	Non-Hispanic White (only)
				2	Non-Hispanic Black (only)
				3	Non-Hispanic AIAN (only)
				4	Non-Hispanic Asian (only)
				5	Non-Hispanic NHOPI (only)
				6	Non-Hispanic multiple race
				7	Hispanic
				8	Origin unknown
21		MARRIED	Marital status	1	Married
				2	Unmarried

Position	FD/ID	Variable Name	Description	Values	Definition
22		PATERNITY	Paternity acknowledged	Y	Yes
				N	No
				U	Unknown
				X	Not applicable
23		MARR_IMP	Marital status imputed	Blank	Not imputed
				1	Imputed
24		MEDUC	Maternal education	1	8th grade or less
				2	9th -12th grade, no diploma
				3	High school graduate or GED
				4	Some college, not a degree
				5	Associate's degree (AA, AS)
				6	Bachelor's degree (BA, BS)
				7	Master's degree (MA, MS)
				8	Doctorate (PhD)/Professional (MD, JD, DVM)
				9	Unknown
25-26		FAGER11	Paternal age recode	1	Younger than 15
				2	15-19
				3	20-24
				4	25-29
				5	30-34
				6	35-39
				7	40-44
				8	45-49
				9	50-54
				10	55-98
				11	Unknown
27		FRACEHISP	Paternal race/Hispanic origin	1	Non-Hispanic White (only)
				2	Non-Hispanic Black (only)
				3	Non-Hispanic AIAN (only)
				4	Non-Hispanic Asian (only)
				5	Non-Hispanic NHOPI (only)
				6	Non-Hispanic multiple race
				7	Hispanic
				8	Origin unknown
28		FEDUC	Paternal education	1	8th grade or less
				2	9th -12th grade, no diploma
				3	High school graduate or GED
				4	Some college, not a degree
				5	Associate's degree (AA, AS)
				6	Bachelor's degree (BA, BS)
				7	Master's degree (MA, MS)
				8	Doctorate (PhD)/Professional (MD, JD, DVM)
				9	Unknown
29		LBO_R	Live birth order recode	1-7	Number of live birth order
				8	8 or more live births
				9	Unknown
30		TBO_R	Total birth order recode	1-7	Number of total birth order
				8	8 or more total births
				9	Unknown

Position	FD/ID	Variable Name	Description	Values	Definition
31-32		ILLB_R11	Interval since last live birth recode	0	0-3 months (plural delivery)
				1	4-11 months
				2	12-17 months
				3	18-23 months
				4	24-35 months
				5	36-47 months
				6	48-59 months
				7	60-71 months
				8	72 months or more
				88	NA (1st live birth)
33-34		ILOP_R11	Interval since last other pregnancy recode	0	0-3 months (plural delivery)
				1	4-11 months
				2	12-17 months
				3	18-23 months
				4	24-35 months
				5	36-47 months
				6	48-59 months
				7	60-71 months
				8	72 months or more
				88	NA (1st natality event)
				99	Unknown
35-36		ILP_R11	Interval since last pregnancy recode	0	0-3 months (plural delivery)
				1	4-11 months
				2	12-17 months
				3	18-23 months
				4	24-35 months
				5	36-47 months
				6	48-59 months
				7	60-71 months
				8	72 months or more
				88	NA (no previous pregnancy)
				99	Unknown
37-38		PRECARE	Month prenatal care began	0	No prenatal care
				1-10	Month prenatal care began
39		PRECARE5	Month prenatal care began recode	1	1st-3rd month
				2	4th-6th month
				3	7th to final month
				4	No prenatal care
				5	Unknown
40-41		PREVIS_R	Number of prenatal visits recode	1	No visits
				2	1-2 visits
				3	3-4 visits
				4	5-6 visits
				5	7-8 visits
				6	9-10 visits
				7	11-12 visits
				8	13-14 visits
				9	15-16 visits
				10	17-18 visits
				11	19 or more visits
				12	Unknown
42		WIC	WIC during pregnancy	Y	Yes
				N	No
				U	Unknown

Position	FD/ID	Variable Name	Description	Values	Definition
43-44		CIG_0	Cigarettes 3 months before pregnancy	00-97	Number of cigarettes daily
				98	98 or more cigarettes daily
				99	Unknown
45-46		CIG_1	Cigarettes smoked 1st trimester	00-97	Number of cigarettes daily
				98	98 or more cigarettes daily
				99	Unknown
47-48		CIG_2	Cigarettes smoked 2nd trimester	00-97	Number of cigarettes daily
				98	98 or more cigarettes daily
				99	Unknown
49-50		CIG_3	Cigarettes smoked 3rd trimester	00-97	Number of cigarettes daily
				98	98 or more cigarettes daily
				99	Unknown
51		CIG0_R	Cigarettes 3 month before pregnancy recode	0	Nonsmoker
				1	1-5
				2	6-10
				3	11-20
				4	21-40
				5	41 or more
				6	Unknown
52		CIG1_R	Cigarettes smoked 1st trimester recode	0	Nonsmoker
				1	1-5
				2	6-10
				3	11-20
				4	21-40
				5	41 or more
				6	Unknown
53		CIG2_R	Cigarettes smoked 2nd trimester recode	0	Nonsmoker
				1	1-5
				2	6-10
				3	11-20
				4	21-40
				5	41 or more
				6	Unknown
54		CIG3_R	Cigarettes smoked 3rd trimester recode	0	Nonsmoker
				1	1-5
				2	6-10
				3	11-20
				4	21-40
				5	41 or more
				6	Unknown
55		CIG_R	Cigarette smoking recode	Y	Yes
				N	No
				U	Unknown
56		BMI_R	Body mass index recode	1	Underweight: <18.5
				2	Normal: 18.5-24.9
				3	Overweight: 25.0-29.9
				4	Obesity I: 30.0-34.9
				5	Obesity II: 35.0-39.9
				6	Obesity III: 40 and over
				9	Unknown

Position	FD/ID	Variable Name	Description	Values	Definition
57		WTGAIN_R	Weight gain recode	1	<11 pounds
				2	11-20 pounds
				3	21-30 pounds
				4	31-40 pounds
				5	41-98 pounds
				9	Unknown
58		RF_PDIAB	Prepregnancy diabetes	Y	Yes
				N	No
				U	Unknown
59		RF_GDIAB	Gestational diabetes	Y	Yes
				N	No
				U	Unknown
60		RF_PHYPE	Prepregnancy hypertension	Y	Yes
				N	No
				U	Unknown
61		RF_GHYPE	Gestational hypertension	Y	Yes
				N	No
				U	Unknown
62		RF_PPTERM	Previous preterm birth	Y	Yes
				N	No
				U	Unknown
63		RF_INFTR	Infertility treatment used	Y	Yes
				N	No
				U	Unknown
64		RF_CESAR	Previous cesarean	Y	Yes
				N	No
				U	Unknown
65-66		RF_CESARN	Number of previous cesareans	0	None
				1-30	Number of previous cesareans
				99	Unknown
67		NO_RISKS	No risk factors reported	1	TRUE
				0	FALSE
				9	Not reported
68		IP_GON	Gonorrhea	Y	Yes
				N	No
				U	Unknown
69		IP_SYPH	Syphilis	Y	Yes
				N	No
				U	Unknown
70		IP_CHLAM	Chlamydia	Y	Yes
				N	No
				U	Unknown
71		IP_HEPB	Hepatitis B	Y	Yes
				N	No
				U	Unknown
72		IP_HEPC	Hepatitis C	Y	Yes
				N	No
				U	Unknown
73		NO_INFEC	No infections reported	1	TRUE
				0	FALSE
				9	Not reported
74		OB_ECVS	Successful external cephalic version	Y	Yes
				N	No
				U	Unknown

Position	FD/ID	Variable Name	Description	Values	Definition
75		OB_ECVF	Failed extern cephalic version	Y	Yes
				N	No
				U	Unknown
76		LD_INDL	Induction of labor	Y	Yes
				N	No
				U	Unknown
77		LD_AUGM	Augmentation of labor	Y	Yes
				N	No
				U	Unknown
78		LD_STER	Steroids	Y	Yes
				N	No
				U	Unknown
79		LD_ANTB	Antibiotics	Y	Yes
				N	No
				U	Unknown
80		LD_CHOR	Chorioamnionitis	Y	Yes
				N	No
				U	Unknown
81		LD_ANES	Anesthesia	Y	Yes
				N	No
				U	Unknown
82		NO_LBRDLV	No characteristics of labor reported	1	TRUE
				0	FALSE
				9	Not reported
83		ME_PRES	Fetal presentation at delivery	1	Cephalic
				2	Breech
				3	Other
				9	Unknown
84		ME_ROUT	Final route & method of delivery	1	Spontaneous
				2	Forceps
				3	Vacuum
				4	Cesarean
				9	Unknown
85		ME_TRIAL	Trial of labor attempted (if cesarean)	Y	Yes
				N	No
				X	Not applicable
				U	Unknown
86		DMETHOD	Delivery method	1	Vaginal (except after C-section)
				2	Vaginal after previous C-section
				3	Primary C-section
				4	Repeat C-section
				5	Vaginal (previous C-section unknown)
				6	C-section (previous C-section unknown)
				9	Unknown
87		DMETHOD_R	Delivery method recode	1	Vaginal
				2	C-section
				9	Unknown
88		MM_MTR	Maternal transfusion	Y	Yes
				N	No
				U	Unknown
89		MM_PLAC	Perineal laceration	Y	Yes
				N	No
				U	Unknown

Position	FD/ID	Variable Name	Description	Values	Definition
90		MM_RUPT	Ruptured uterus	Y	Yes
				N	No
				U	Unknown
91		MM_UHYST	Unplanned hysterectomy	Y	Yes
				N	No
				U	Unknown
92		MM_AICU	Admit to intensive care	Y	Yes
				N	No
				U	Unknown
93		NO_MMORB	No maternal morbidity reported	1	TRUE
				0	FALSE
				9	Not reported
94		ATTEND	Attendant at birth	1	Doctor of Medicine (MD)
				2	Doctor of Osteopathy (DO)
				3	Certified Nurse Midwife/Certified Midwife (CNM/CM)
				4	Other midwife
				5	Other
				9	Unknown
95		MTAN	Mother transferred	Y	Yes
				N	No
				U	Unknown
96		PAY_R	Source of payment recode	1	Medicaid
				2	Private insurance
				3	Self pay
				4	Other
				9	Unknown
97-98		APGAR5	5 minute APGAR score	00-10	0-10
				99	Unknown
99		APGAR5R	5 minute APGAR score recode	1	0-3
				2	4-6
				3	7-8
				4	9-10
				5	Unknown
100-101		APGAR10	10 minute APGAR score	00-10	0-10
				88	Not applicable
				99	Unknown
102		APGAR10R	10 minute APGAR score recode	1	0-3
				2	4-6
				3	7-8
				4	9-10
				5	Unknown/Not applicable
103		SETORDER	Set order	1	1st
				2	2nd
				3	3rd
				4	4th
				9	Unknown
104		SEX	Sex of infant	M	Male
				F	Female
105		SEX_IMP	Imputed sex	Blank	Not imputed
				1	Imputed
106-107		OEGEST	Obstetric estimate edited (NCHS standard)	17-47	17-47 weeks
				99	Unknown

Position	FD/ID	Variable Name	Description	Values	Definition
108-109		OEGEST_R10		1	<20 weeks
				2	20-27 weeks
				3	29-31 weeks
				4	32-33 weeks
				5	34-36 weeks
				6	37-38 weeks
				7	39 weeks
				8	40 weeks
				9	41 weeks
				10	42 weeks or more
				99	Unknown
110-111	F	OEGEST_R12	Obstetric estimate edited (NCHS standard)	1	<16 weeks
				2	16-19 weeks
				3	20-23 weeks
				4	24-27 weeks
				5	28-31 weeks
				6	32-33 weeks
				7	34-36 weeks
				8	37-38 weeks
				9	39-40 weeks
				10	41 weeks
				11	42 weeks or more
				12	Unknown
112		OEGEST_R3	Obstetric estimate recode (NCHS standard)	1	<37 weeks
				2	37 weeks and over
				3	Unknown
113	FD	OEGEST_R5	Obstetric estimate recode (NCHS standard)	1	<20 weeks
				2	20-23 weeks
				3	24-27 weeks
				4	28 weeks and over
				5	Unknown
114-115		BWTR12	Birthweight recode	1	227-499 grams
				2	500-999 grams
				3	1000-1499 grams
				4	1500-1999 grams
				5	2000-2499 grams
				6	2500-2999 grams
				7	3000-3499 grams
				8	3500-3999 grmas
				9	4000-4499 grams
				10	4500-4999 grams
				11	5000-8165 grams
				12	Unknown

Position	FD/ID	Variable Name	Description	Values	Definition
116-117	**FD**	BWTR14	Birthweight recode	1	249 grams or less
				2	250-349 grams
				3	350-499 grams
				4	500-999 grams
				5	1000-1499 grmas
				6	1500-1999 grms
				7	2000-2499 grams
				8	2500-2999 grams
				9	3000-3499 grams
				10	3500-3999 grmas
				11	4000-4499 grams
				12	4500-4999 grams
				13	5000-8165 grams
				14	Unknown
118		BWTR4	Birthweight recode	1	227-1499 grams
				2	1500-2499 grams
				3	2500-8165 grams
				4	Unknown
119		AB_AVEN1	Assisted ventilation (immediately)	Y	Yes
				N	No
				U	Unknown
120		AB_AVEN6	Assisted ventilation (>6 hours)	Y	Yes
				N	No
				U	Unknown
121		AB_NICU	Admission to NICU	Y	Yes
				N	No
				U	Unknown
122		AB_SURF	Surfactant	Y	Yes
				N	No
				U	Unknown
123		AB_ANTI	Antibiotics for newborn	Y	Yes
				N	No
				U	Unknown
124		AB_SEIZ	Seizures	Y	Yes
				N	No
				U	Unknown
125		NO_ABNORM	No abnormal conditions checked	1	TRUE
				0	FALSE
				9	Not reported
126		CA_ANEN	Anencephaly	Y	Yes
				N	No
				U	Unknown
127		CA_MNSB	meningomyelocele/spina bifida	Y	Yes
				N	No
				U	Unknown
128		CA_CCHD	Cyanotic congential heart disease	Y	Yes
				N	No
				U	Unknown
129		CA_CDH	Congenital diaphragmatic hernia	Y	Yes
				N	No
				U	Unknown
130		CA_OMPH	Omphalocele	Y	Yes
				N	No
				U	Unknown

Position	FD/ID	Variable Name	Description	Values	Definition
131		CA_GAST	Gastroschisis	Y	Yes
				N	No
				U	Unknown
132		CA_LIMB	Limb reduction defect	Y	Yes
				N	No
				U	Unknown
133		CA_CLEFT	Cleft lip w/or w/o cleft palate	Y	Yes
				N	No
				U	Unknown
134		CA_CLPAL	Cleft palate alone	Y	Yes
				N	No
				U	Unknown
135		CA_DOWN	Down syndrome	Y	Yes
				N	No
				U	Unknown
136		CA_DISOR	Suspected chromosomal disorder	Y	Yes
				N	No
				U	Unknown
137		CA_HYPO	Hypospadias	Y	Yes
				N	No
				U	Unknown
138		NO_CONGEN	No congenital anomalies checked	1	TRUE
				0	FALSE
				9	Not reported
139		ITRAN	Infant transferred	Y	Yes
				N	No
				U	Unknown
140		ILIVE	Infant living at time of report	Y	Yes
				N	No
				U	Unknown
141-143	ID	AGED	Age at death in days	0	0 days, includes unknown
				01-364	number of days
144	ID	AGER5	Infant age at death recode	1	<1 hour (includes unknown)
				2	1-23 hours
				3	1-6 days
				4	7-27 days (late neonatal)
				5	28 days and over (postneonatal)

Position	FD/ID	Variable Name	Description	Values	Definition
145-146	ID	AGER22	Infant age at death recode	Blank	Unknown
				1	<1 hour (includes unknown)
				2	1-23 hours
				3	1 day
				4	2 days
				5	3 days
				6	4 days
				7	5 days
				8	6 days
				9	7-13 days
				10	14-20 days
				11	21-27 days
				12	1 month
				13	2 months
				14	3 months
				15	4 months
				16	5 months
				17	6 months
				18	7 months
				19	8 months
				20	9 months
				21	10 months
				22	11 months
147	ID	MANNER	Manner of death	1	Accident
				2	Suicide
				3	Homicide
				4	Pending investigation
				5	Could not determine
				6	Self-inflicted
				7	Natural
				Blank	Not specified
148	ID	DISPO	Method of disposition	B	Burial
				C	Cremation
				O	other
				U	Unknown
149	ID	AUTOPSY	Autopsy	Y	Yes
				N	No
				U	Unknown
150	ID	PLACE	Place of insure for causes W00-Y34	0	Home
				1	Residential institution
				2	School, other institution, publc admin area
				3	Sports and athletics area
				4	Street and highway
				5	Trade and service area
				6	Industrial and construction area
				7	Farm
				8	Other specified place
				9	Unspecified
				Blank	Cause other than W00-Y34
151-154	ID	UCOD	ICD Code (10th revision)		
155-157	ID	UCODR130	130 infant cause recode		

FD	Field applies to fetal deaths only
ID	Field applies to infant deaths only

Table 1. Number of matched, unmatched and incomplete records of twins, triplets and quadruplets by perinatal outcome: United States, 2016-2020

Outcome	Twins, Triplets, Quadruplets			Twins		Triplets			Quadruplets			Total
	Matched	Unmatched	Incomplete	Matched	Unmatched	Matched	Unmatched	Incomplete	Matched	Unmatched	Incomplete	
Total	635,253	6,268	413	617,962	5,991	16,587	248	364	704	29	49	641,934
Birth	628,136	5,237	361	611,251	5,011	16,211	199	317	674	27	44	633,734
Survivor	621,481	4,744	316	605,051	4,541	15,784	181	274	646	22	42	626,541
Infant death	6,655	493	45	6,200	470	427	18	43	28	5	2	7,193
Fetal death	7,117	1,031	52	6,711	980	376	49	47	30	2	5	8,200

NOTE: survivor is live birth which does not result in an infant death

Table 2A. Number of matched sets of twins by perinatal outcome: United States, 20016-2020

Outcome	Number
Total sets of twins	308,981
2 survivors	298,225
1 survivor+1 infant death	5,611
1 survior+1 fetal death	2,990
2 infant deaths	118
1 infant death+1 fetal death	353
2 fetal deaths	1,684

NOTE: survivor is live birth which does not result in an infant death

Table 2B. Number of matched sets of triplets by perinatal outcome: United States, 20016-2020

Outcome	Number
Total sets of triplets	5,529
3 survivors	4,970
2 survivors+1 infant death	251
2 survivors+1 fetal death	110
1 survivor+2 infant deaths	65
1 survivor+2 fetal deaths	53
1 survivor+1 infant death + 1 fetal death	34
3 infant deaths	1
2 infant deaths+1 fetal death	0
1 infant death+2 fetal deaths	9
3 fetal deaths	36

NOTE: survivor is live birth which does not result in an infant death

Table 2C. Number of matched sets of quadruplets by perinatal outcome: United States, 20016-2020

Outcome	Number
Total sets of quadruplets	176
4 survivors	143
3 survivors+1 infant death	10
3 survivors+1 fetal death	5
2 survivors+2 infant deaths	7
2 survivors+2 fetal deaths	4
2 survivors+1 infant death+1 fetal death	2
1 survivor+3 fetal deaths	2
1 survivor+2 infant deaths+1 fetal death	1
4 fetal deaths	2

NOTE: survivor is live birth which does not result in an infant death

Table A. Jurisdictions which report valid value for MATCH variable

Jurisdiction	Valid value for MATCH
Alaska	X
Alabama	X
Arkansas	X
Arizona	
California	
Colorado	
Connecticut	X
Delaware	
District of Columbia	
Florida	X
Georgia	X
Hawaii	X
Idaho	X
Illinois	
Indiana	
Iowa	X
Kansas	
Kentucky	
Louisiana	X
Maine	X
Maryland	X
Massachusetts	
Michigan	
Minnesota	X
Mississippi	X
Missouri	
Montana	
Nebraska	X
Nevada	X
New Hampshire	X
New Jersey	
New Mexico	X
New York State	X
New York City	
North Carolina	X
North Dakota	
Ohio	
Oklahoma	X
Oregon	X
Pennsylvania	
Rhode Island	
South Carolina	
South Dakota	X

Jurisdiction	Valid value for MATCH
Tennessee	
Texas	
Utah	
Vermont	X
Virginia	X
Washington	
West Virginia	X
Wisconsin	X
Wyoming	

Table B. Description of variables in the matched multiple file and distribution categories

PLURAL	COUNT	COMPLETE	Description	N	complete sets
2	2	1	2 matched twins (2B, 2F, 1B+1F)	617,962	99.04
2	1	2	1 unmatched twin (1B, 1F)	5,991	
3	3	1	3 matched triplets (3B, 2B+1F, 1B+2F, 3F)	16,587	96.44
3	2	2	2 matched triplets (2B, 2F, 1B+1F)	366	
3	1	2	1 unmatched triplet (1B, 1F)	246	
4	4	1	4 matched quadruplets (4B, 3B+1F, 2B+2F, 1B+3F, 4F)	704	90.03
4	3	2	3 matched quadruplets (3B, 2B+1F, 1B+2F, 3F)	36	
4	2	2	2 matched quadruplets (2B, 2F, 1B+1F)	16	
4	1	2	1 unmatched quadruplet (1B, 1F)	26	
Total				641,934	

NOTE: B = birth; F = fetal death