User Guide to the 2010 Natality Public Use File

2010 Natality Detail Data Set

Contents

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Introduction

United States birth data available in this file represent all births registered in the 50 States, the District of Columbia, and New York City. The Centers for Disease Control and Prevention's National Center for Health Statistics (NCHS) receives these data as electronic files, prepared from individual records processed by each registration area, through the Vital Statistics Cooperative Program.

Birth data for the U.S. are limited to births occurring within the United States to U.S. residents and nonresidents. Births to nonresidents of the United States are excluded from all tabulations by place of residence. Births occurring to U.S. citizens outside of the United States are not included in this file. For more detailed information on the 2010 Natality file see the "Detailed Technical Notes – Natality: United States, 2010" in this User Guide.

Availability of Geographic Detail

Beginning with the 2005 data year, the U.S. micro-data natality file no longer includes geographic detail (e.g., mother's state of residence). Tabulations of birth data by residence of mother for states and for counties with populations of 100,000 or more are available using the VitalStats online data access tool described below. Certain geographic level data may also be available upon request: See "NCHS Data Release and Access Policy for Microdata and Compressed Vital Statistics Files," available at: http://www.cdc.gov/nchs/nvss/dvs_data_release.htm.

The territories file, which includes data on births occurring in Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Marianas Islands, includes limited geographical detail. Information identifying individual territories and counties (or their equivalent) with populations of 100,000 or more by place of occurrence and residence are available in this file.

VitalStats

VitalStats is an online data access tool which provides access to a collection of interactive pre-built tables, and the ability to build tables from over 100 public use birth variables including limited geographic detail. Interactive charting and mapping tools are a key part of the system, and provide powerful options for visualizing and manipulating tabulated data. Tabulated data

can be exported to Excel for further analysis. VitalStats is available at: http://www.cdc.gov/nchs/VitalStats.htm.

The 1989 and 2003 Revisions of the U.S. Certificate of Live Birth

This data file includes data based on both the 1989 Revision of the U.S. Standard Certificate of Live Birth (unrevised) and the 2003 revision of the U.S. Standard Certificate of Live Birth (revised). The 2003 revision is described in detail elsewhere. (See the 2003 Revision website at: http://www.cdc.gov/nchs/nvss/vital_certificate_revisions.htm.) Thirty-three states, the District of Columbia, Puerto Rico, and the Northern Marianas had implemented the revised birth certificate as of January 1, 2010: California, Colorado, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Michigan, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York (including New York City), North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Washington, and Wyoming. Two additional reporting areas implemented the revised birth certificate in 2010, but after January 1: Louisiana (December) and North Carolina (rolling). The 33 revised states and the District of Columbia (excluding Puerto Rico and the Northern Marianas) represent 76 percent of births to U.S. residents. Where comparable, revised data are combined with data from the remaining 17 unrevised states. (Data from revised states are denoted by "R;" data from unrevised states are denoted by "U" in the "Rev" column of the file layout.) Where data for the 1989 and 2003 certificate revisions are not comparable (e.g., educational attainment of the mother), unrevised and revised data are shown in separate fields in the data file. Also see discussion of reporting flags. Selected items new to the 2003 Revision are included in this data file. Tables presenting these data are not shown in "Births: Final data for 2010" [1] but are included in this guide; see **Documentation Table 1** to **Documentation Table 8**. For 2009, this information can be found in **Documentation tables 2** through **8** of the 2009 User Guide [2]. The report "Expanded Data from the New Birth Certificate, 2008" presented 2008 data for these items [3]. For 2007, data are presented in Tables R-1 through R-6 of the 2007 User Guide [4]. For further information please contact us at births@cdc.gov or (301)458-4111.

Beginning with the 2007 data year, data items exclusive to the 1989 (i.e., maternal anemia, ultrasound, alcohol use) are no longer available in public use files.

Incomplete National Reporting: Selecting reporting areas for the 2010 natality file

The use of reporting flags

As a result of the delayed, phased transition to the 2003 Standard Certificate of Live Births, the 2010 natality file includes data for reporting areas that use the 2003 revision of the U.S. Standard Certificate of Live Birth (revised) and data for reporting areas that use the 1989 Standard Certificate of Live Birth (unrevised). Although many data items are comparable across certificate revisions and are available for the entire United States, many other items are not collected or not collected in a comparable form in all areas. Reporting flags were developed to help the user identify those records (i.e. births) to residents of all reporting areas collecting the specified item in a comparable form. The national reporting area is defined as the 50 States, the District of Columbia, and New York City; (NYC is an independent reporting area from New York State). Reporting flags are available for most items on the file. Positions for reporting flags are noted along with each data item in the file layout.

Translating "blanks"

In the 2010 natality file, for data items which are not common or comparable across certificate revisions, births to residents of a revised state occurring in an unrevised state, and births to residents of an unrevised state occurring in a revised state, are represented by "blanks." Blanks should be treated as "unknowns" for tabulation.

In sum, the correct use of reporting flags and translation of blanks will result in an accurate tally of births for items with incomplete national reporting. For an example of SAS code that may be used to incorporate the correct use of reporting flags and the translation of blanks see below.

Example of SAS code using reporting flags (and translational blanks)

The example below is for the revised timing of prenatal care item. Prenatal care data based on the revised certificate are not considered comparable with data based on the unrevised certificate, and are presented separately. Accordingly, use of the reporting flag for this item will produce 2010 data for the month prenatal care began for the 33 States and the District of Columbia which had implemented the revised Certificate as of January 1, 2010.

Sample SAS program (revised)

```
01 DATA work;
02 INFILE ‘c:nat10us.dat’ LRECL=775;
03 INPUT
04 restatus 138
05 precare 245-246
06 f_mpcb 668;
07
08 /*Exclude foreign residents*/
09 IF restatus NE 4;
10 /*Select reporting area*/
11 IF f_mpcb=1;
12 /*Convert blanks to unknown*/
13 IF precare=. THEN precare=99;
14
15 PROC FREQ;
16 TABLE precare;
17 RUN;
```

In this example, “restatus” is used to exclude births to foreign residents (this is standard practice for all NCHS tabulations). Also in this example, blanks are represented by numeric values SAS codes = (.). However, for some items in the file, e.g., obstetric procedures, blanks are represented by character values for which the SAS code is empty (‘ ’).

To produce 2010 data for the month prenatal care began for unrevised states, use the following lines as shown (changes are bolded):

Sample SAS program (unrevised)

```
01 DATA work;
02 INFILE ‘c:nat10us.dat’ LRECL=775;
03 INPUT
04 restatus 138
05 MPCB 256-257
06 f_mpcb_u 669;
07
08 /*Exclude foreign residents*/
09 IF restatus NE 4;
10 /*Select reporting area*/
11 IF f_mpcb_u=1;
12 /*Convert blanks to unknown*/
13 IF MCPB=. THEN MCPB=99;
14
15 PROC FREQ;
16 TABLE MPCB;
17 RUN;
```

References

1. Martin JA, Hamilton BE, Ventura SJ, Osterman MJK, Wilson EC, Mathews TJ. Births: Final Data for 2010. National vital statistics reports; vol 61 no 1. Hyattsville, MD: National Center for Health Statistics. 2012.

2. National Center for Health Statistics. User Guide to the 2009 Natality Public Use File. Hyattsville, Maryland: National Center for Health Statistics. Annual product 2011. Available for downloading at: http://www.cdc.gov/nchs/data_access/VitalStatsOnline.htm.

3. Osterman MJK, Martin JA, Mathews TJ, Hamilton BE. Expanded data from the new birth certificate, 2008. National vital statistics reports; vol 59 no 7. Hyattsville, MD: National Center for Health Statistics. 2011.

4. National Center for Health Statistics. User Guide to the 2007 Natality Public Use File. Hyattsville, Maryland: National Center for Health Statistics. Annual product 2010. Available for downloading at: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/DVS/natality/UserGuide2007.pdf.

2010 Natality
Machine / File / Data Characteristics

All Files:

Record format: Fixed Format

Code scheme: Numeric/Alphabetic/Blank

Record length: 775

	United States	Territories
All births:		
Record count:	4,007,105	49,625
By occurrence:	4,007,105	49,625
By residence:	3,999,386	49,475
To foreign residents:	7,719	150

2010 LIST OF DATA ELEMENTS AND LOCATIONS

Data Items	Locations
1. General	
a) Data year	15-18
b) Resident status	138
2. Prenatal Care	
a) Month began	245-247, 256-259
b) Number of visits	270-273
3. Child	
a) Sex	436-437
b) Number at delivery	423, 425
c) Birthweight	463-466, 471-473
d) Apgar score	415-417
e) Gestation	451-457
f) Month/year of birth	15-20
g) Day of week of birth	29
4. Mother	
a) Age	89-93
b) Race	139-144
c) Marital status	153
d) Education	155-158
e) Hispanic origin	148-149
5. Pregnancy History	
a) Total birth order	217
b) Live birth order	212
6. Father	
a) Age	184-187
b) Race	188-191, 199-200
c) Hispanic origin	195-196
7. Other Items	
a) Residence reporting flags	569-773
b) Attendant at birth	410
c) Place of delivery	41-42
8. Medical and Health Data	

a)	Method of delivery	390-403
b)	Medical risk factors	313-344
c)	Other risk factors	
	i. Tobacco	284-294
	ii. Weight gain during pregnancy	276-278
d)	Obstetric procedures	351-361
e)	Complications/characteristics of labor and/or delivery	365-389
f)	Abnormal conditions of the newborn	476-482
g)	Congenital anomalies	492-525

2010
Public Use –Natality File Record Layout

Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
1-6	6	FILLER	**Filler**			Blank	
7	1	REVISION	**Revision**		U,R	A	Data based on the 2003 revision of the US Standard Birth Certificate (Revised)
						S	Data based on the 1989 revision of the US Standard Birth Certificate (Unrevised)
8-14	7	FILLER	**Filler**			Blank	
15-18	4	DOB_YY	**Birth Year**		U,R	2009	Year of birth
19-20	2	DOB_MM	**Birth Month**		U,R	01	January
						02	February
						03	March
						04	April
						05	May
						06	June
						07	July
						08	August
						09	September
						10	October
						11	November
						12	December
21-28	8	FILLER	**Filler**			Blank	
29	1	DOB_WK	**Weekday**		U,R	1	Sunday
						2	Monday
						3	Tuesday
						4	Wednesday
						5	Thursday
						6	Friday
						7	Saturday
30-31	2	OTERR	**Occurrence Territory** *(This item is available in the territory file only, geographic codes are not available in the U.S. file)*		U,R		
			Outlying Areas of the United States			AS	American Samoa
						GU	Guam
						MP	Northern Marianas

*U,R Includes data based on both the 1989 Revision of the U.S. Certificate of Live Birth (unrevised), and the 2003 Revision of the U.S. Certificate of Live Birth (revised).

U Includes data based on the 1989 Revision of the U.S. Certificate of Live Birth; excludes data based on the 2003 Revision.

R Includes data based on the 2003 Revision of the U.S. Certificate of Live Birth; excludes data based on the 1989 Revision.

Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
						PR	Puerto Rico
						VI	Virgin Islands
32-36	5	FILLER	**Filler**			Blank	
37-39	3	OCNTY	**Occurrence County** *(This item is available in the territory file only, geographic codes are not available in the U.S. file)*		U,R		
			Puerto Rico			021	Bayamo'n
						025	Caguas
						031	Carolina
						097	Mayaguez
						113	Ponce
						127	San Juan
						999	County of less than 100,000
			Other Outlying Areas of the United States			000	No county level geography
						999	County of less than 100,000
40	1	OCNTYPOP	**Occurrence County Pop** *(This item is available in the territory file only, geographic codes are not available in the U.S. file)*		U,R	0	County of 1,000,000 or more
						1	County of 500,000 to 1,000,000
						2	County of 250,000 to 500,000
						3	County of 100,000 to 250,000
						9	County less than 100,000
41	1	BFACIL	**Birth Place**	676	R	1	Hospital
						2	Freestanding Birthing Center
						3	Home (intended)
						4	Home (not intended)
						5	Home (unknown if intended)
						6	Clinic / Doctor's Office
						7	Other
						9	Unknown
						Blank	Not on certificate
42	1	UBFACIL	**Birth Place**		U,R	1	Hospital
						2	Freestanding Birthing Center
						3	Clinic / Doctor's Office
						4	Residence

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
						5	Other
						9	Unknown
43-58	16	FILLER	**Filler**			Blank	
59	1	BFACIL3	**Birth Place Recode**		U,R	1	In Hospital
						2	Not in Hospital
						3	Unknown or Not Stated
60-86	27	FILLER	**Filler**			Blank	
87	1	MAGE_IMPFLG	**Mother's Age Imputed**		U,R	Blank	Age not imputed
						1	Age imputed
88	1	MAGE_REPFLG	**Reported Age of Mother Flag**		U,R	Blank	Reported age not used
						1	Reported age used
89-90	2	MAGER	**Mother's Single Year of Age**		U,R	12	10-12 years
						13	13 years
						14	14 years
						15	15 years
						16	16 years
						17	17 years
						18	18 years
						19	19 years
						20	20 years
						21	21 years
						22	22 years
						23	23 years
						24	24 years
						25	25 years
						26	26 years
						27	27 years
						28	28 years
						29	29 years
						30	30 years
						31	31 years
						32	32 years
						33	33 years
						34	34 years

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
						35	35 years
						36	36 years
						37	37 years
						38	38 years
						39	39 years
						40	40 years
						41	41 years
						42	42 years
						43	43 years
						44	44 years
						45	45 years
						46	46 years
						47	47 years
						48	48 years
						49	49 years
						50	50-54 years**
			** Includes births to women aged 50 to 64 years.				
91-92	2	MAGER14	**Mother's Age Recode 14**		U,R	01	Under 15 years
						03	15 years
						04	16 years
						05	17 years
						06	18 years
						07	19 years
						08	20-24 years
						09	25-29 years
						10	30-34 years
						11	35-39 years
						12	40-44 years
						13	45-49 years
						14	50-54 years**
			** Includes births to women aged 50 to 64 years.				
93	1	MAGER9	**Mother's Age Recode 9**		U,R	1	Under 15 years
						2	15-19 years
						3	20-24 years
						4	25-29 years
						5	30-34 years
						6	35-39 years
						7	40-44 years

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
						8	45-49 years
						9	50-54 years**
			** Includes births to women aged 50 to 64 years.				
94-95	2	MBCNTRY	**Mother's Birth Country** *(This item is available in the territory file only, geographic codes are not available in the U.S. file)*		U,R	AA-ZZ	A complete list of countries is shown in the Geographic Code Outline, which follows the record layout.
						YY	Unspecified foreign country
						ZZ	Not classifiable
	** Also includes unrevised territories that use new geographic coding						
96-108	13	FILLER	**Filler**			Blank	
109-110	2	MRTERR	**Mother's Residence Territory** *(This item is available in the territory file only, geographic codes are not available in the U.S. file)*		U,R		
			Outlying Areas of the United States			AS	American Samoa
						GU	Guam
						MP	Northern Marianas
						PR	Puerto Rico
						VI	Virgin Islands
						US	United States (births to residents of the 50 states or DC)
						XX	Not Applicable
						ZZ	Not Classifiable
111-113	3	FILLER	**Filler**			Blank	
114-116	3	MRCNTY	**Mother's County of Residence** *(This item is available in the territory file only, geographic codes are not available in the U.S. file)*		U,R		
			Puerto Rico			021	Bayamo'n
						025	Caguas
						031	Carolina
						097	Mayaguez
						113	Ponce
						127	San Juan
						999	County of less than 100,000 population

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
							or foreign resident
			Other Outlying Areas of the United States			000	No county level geography
						999	County of less than 100,000 population or foreign resident
117-131	15	FILLER	**Filler**			Blank	
132	1	RCNTY_POP	**Population of Residence County** *(This item is available in the territory file only, geographic codes are not available in the U.S. file)*		U,R	0	County of 1,000,000 or more
						1	County of 500,000 to 1,000,000
						2	County of 250,000 to 500,000
						3	County of 100,000 to 250,000
						9	County less than 100,000
						Z	Foreign resident
133-136	4	FILLER	**Filler**			Blank	
137	1	RECTYPE	**Record Type** *(This item is available in the territory file only, geographic codes are not available in the U.S. file)*		U,R	1	RESIDENT: Territory and county of occurrence and residence are the same.
						2	NONRESIDENT: Territory and county of occurrence and residence are different.
138	1	RESTATUS	**Residence Status**		U,R		
			United States			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 one of the 50 US states or District of Columbia.
						4	FOREIGN RESIDENT: The state of residence is not one of the 50 US states or District of Columbia.
			Outlying Areas of the United States			1	RESIDENT: State and county of occurrence and residence are the same. (Unique to Guam, all US residents are considered residents of Guam and thus are assigned 1.)
						2	INTRATERRITORY NONRESIDENT: Territory of occurrence and residence are the same but county is different.
						3	INTERTERRITORY RESIDENT: Territory of occurrence and

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
							residence are different but both are US Territories.
						4	FOREIGN RESIDENT: The residence is not a US Territory.
139-140	2	MBRACE	**Mother's Bridged Race** Includes only states reporting multiple race. Codes 01-14 used for individuals reporting only one race. Codes 21-24 used for individuals reporting more than one race that have been bridged to a single race. Code 24 also used for individuals reporting more than one Asian/Pacific Islander group; see "Technical Appendix." ** Also includes unrevised states that report multiple race.		R**	01 02 03 04 05 06 07 08 09 10 11 12 13 14 21 22 23 24 Blank	White – single race Black – single race American Indian / Alaskan Native – single race Asian Indian – single race Chinese – single race Filipino – single race Japanese – single race Korean – single race Vietnamese – single race Other Asian – single race Hawaiian – single race Guamanian – single race Samoan – single race Other Pacific Islander – single race White – bridged multiple race Black – bridged multiple race American Indian / Alaskan Native – bridged multiple race Asian / Pacific Islander – bridged multiple race Not on certificate
141-142	2	MRACE	**Mother's Race** Includes only states exclusively reporting single race. Some areas report additional Asian or Pacific Islander (API) codes for race. Codes 18-68 replace old code 08 for these areas. Code 78 replaces old code 08 for all other areas. See reporting flag at pos.650 for expanded API reporting area.		U		
			United States			01 02 03 04 05 06 07	White Black American Indian / Alaskan Native Chinese Japanese Hawaiian (includes part Hawaiian) Filipino

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
						18	Asian Indian
						28	Korean
						38	Samoan
						48	Vietnamese
						58	Guamanian
						68	Other Asian / Pacific Islander in areas reporting codes 18-58.
						78	Combined other Asian / Pacific Islander, includes 18-68 for areas that do not report them separately.
						Blank	Not on certificate
			Puerto Rico			01	White
						02	Black
						00	Other races
						Blank	Not on certificate
			Guam			01	White
						02	Black
						03	American Indian / Alaskan Native
						04	Chinese
						05	Japanese
						06	Hawaiian (includes part Hawaiian)
						07	Filipino
						08	Other Asian or Pacific Islander
						58	Gumanian
						Blank	Not on certificate
			All other Outlying Areas of the United States			01	White
						02	Black
						03	American Indian / Alaskan Native
						04	Chinese
						05	Japanese
						06	Hawaiian (includes part Hawaiian)
						07	Filipino
						08	Other Asian or Pacific Islander
						Blank	Not on certificate
143		1	MRACEREC	**Mother's Race Recode** Includes individuals reporting only one race and	U,R		

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
			individuals reporting more than one race bridged to a single race.				
			United States and all Outlying Areas of the United States except Puerto Rico			1	White
						2	Black
						3	American Indian / Alaskan Native
						4	Asian / Pacific Islander
			Puerto Rico			1	White
						2	Black
						0	Other (not classified as White or Black)
144	1	MRACEIMP	**Mother's Race Imputed Flag**		U,R	Blank	Mother's race not imputed
						1	Unknown race imputed
						2	All other races, formerly coded 09, imputed.
145-147	3	FILLER	**Filler**			Blank	
148	1	UMHISP	**Mother's Hispanic Origin**				
				569	U,R	0	Non-Hispanic
						1	Mexican
						2	Puerto Rican
						3	Cuban
						4	Central or South American
						5	Other and Unknown Hispanic
						9	Origin unknown or not stated
149	1	MRACEHISP	**Mother's Race/Hispanic Origin**				
				569	U,R	1	Mexican
						2	Puerto Rican
						3	Cuban
						4	Central or South American
						5	Other and Unknown Hispanic
						6	Non-Hispanic White
						7	Non-Hispanic Black
						8	Non-Hispanic Other Races
						9	Origin unknown or not stated
150-152	3	FILLER	**Filler**			Blank	

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
153	1	MAR	**Mother's Marital Status**		U,R		
			United States and all Outlying Areas of the United States except Puerto Rico			1	Yes
						2	No
						9	Unknown or not Stated
			Puerto Rico			1	Yes
						2	Unmarried parents living together
						3	Unmarried parents not living together
						9	Unknown or not stated
154	1	MAR_IMP	**Mother's Marital Status Imputed Flag**		U,R	Blank	Marital Status not imputed
						1	Marital Status imputed
155	1	MEDUC	**Mother's Education**	571	R	1	8th grade or less
						2	9th through 12th grade with no diploma
						3	High school graduate or GED completed
						4	Some college credit, but not a degree
						5	Associate degree (AA, AS)
						6	Bachelor's degree (BA, AB, BS)
						7	Master's degree (MA, MS)
						8	Doctorate (PHD, EdD) or Professional Degree (MD, DDS, DVM, LLB, JD)
						9	Unknown
						Blank	Not on certificate
156-157	2	DMEDUC	**Mother's Education**	647	U	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
						Blank	Not on certificate
158	1	MEDUC_REC	**Mother's Education Recode**				

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
				647	U	1	0 – 8 years
						2	9 – 11 years
						3	12 years
						4	13 – 15 years
						5	16 years and over
						6	Not stated
						Blank	Not on certificate
159-174	16	FILLER	**Filler**			Blank	
175	1	FAGERPT_FLG	**Father's Reported Age Used**		U,R	Blank	Father's reported age not used
						1	Father's reported age used
176-181	6	FILLER	**Filler**			Blank	
182-183	2	FAGECOMB	**Father's Combined Age (Revised)**		R	09-98	Father's combined age in years
				571		99	Unknown or not stated
						Blank	Not on certificate
184-185	2	UFAGECOMB	**Father's Combined Age**		U,R	10-98	Father's combined age in years
				647		99	Unknown or not stated
186-187	2	FAGEREC11	**Father's Age Recode 11**		U,R	01	Under 15 years
						02	15-19 years
						03	20-24 years
						04	25-29 years
						05	30-34 years
						06	35-39 years
						07	40-44 years
						08	45-49 years
						09	50-54 years
						10	55-98 years
						11	Not stated
188-189	2	FBRACE	**Father's Bridged Race**		R**	01	White – single race
			Includes only states reporting multiple race. Codes			02	Black – single race
			01-14 used for individuals reporting only one race.			03	American Indian / Alaskan Native – single race
			Codes 21-24 used for individuals reporting more than			04	Asian Indian – single race
			one race that have been bridged to a single race.			05	Chinese – single race
			Code 24 also used for individuals reporting			06	Filipino – single race

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
			more than one Asian/Pacific Islander group; see "Technical Appendix."			07	Japanese – single race
						08	Korean – single race
						09	Vietnamese – single race
			** Also includes unrevised states that report multiple race.			10	Other Asian – single race
						11	Hawaiian – single race
						12	Guamanian – single race
						13	Samoan – single race
						14	Other Pacific Islander – single race
						21	White – bridged multiple race
						22	Black – bridged multiple race
						23	American Indian / Alaskan Native – bridged multiple race
						24	Asian / Pacific Islander – bridged multiple race
						99	Unknown or not stated, also includes states not reporting multiple race.
						Blank	Not on certificate
190	1	FILLER	**Filler**			Blank	
191	1	FRACEREC	**Father's Race Recode** Includes individuals reporting only one race and individuals reporting more than one race bridged to a single race.		U,R		
			United States and all Outlying Areas of the United States except Puerto Rico			1	White
						2	Black
						3	American Indian / Alaskan Native
						4	Asian / Pacific Islander
						9	Unknown or not stated
			Puerto Rico			1	White
						2	Black
						9	Unknown or not stated
						0	Other (not classified as White or Black)
192-194	3	FILLER	**Filler**			Blank	
195	1	UFHISP	**Father's Hispanic Origin**	570	U,R	0	Non-Hispanic
						1	Mexican
						2	Puerto Rican

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
						3	Cuban
						4	Central American
						5	Other and Unknown Hispanic
						9	Origin unknown or not stated
196	1	FRACEHISP	**Father's Race/Hisp Origin**				
				570	U,R	1	Mexican
						2	Puerto Rican
						3	Cuban
						4	Central or South American
						5	Other and Unknown Hispanic
						6	Non-Hispanic White
						7	Non-Hispanic Black
						8	Non-Hispanic Other Races
						9	Origin unknown or not stated
197-198	2	FILLER	**Filler**			Blank	
199-200	2	FRACE	**Father's Race**		U		
			United States			01	White
						02	Black
						03	American Indian / Alaskan Native
						04	Chinese
						05	Japanese
						06	Hawaiian (includes part Hawaiian)
						07	Filipino
						18	Asian Indian
						28	Korean
						38	Samoan
						48	Vietnamese
						58	Guamanian
						68	Other Asian / Pacific Islander in areas reporting codes 18-58.
						78	Combined other Asian / Pacific Islander, includes 18-68 for areas that do not report them separately.
						99	Unknown or not stated
						Blank	Not on certificate
			Puerto Rico			01	White
						02	Black

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
						00	Other races
						99	Unknown or not stated
						Blank	Not on certificate
			Guam			01	White
						02	Black
						03	American Indian / Alaskan Native
						04	Chinese
						05	Japanese
						06	Hawaiian (includes part Hawaiian)
						07	Filipino
						08	Other Asian or Pacific Islander
						58	Gumanian
						99	Unknown or not stated
						Blank	Not on certificate
			All other Outlying Areas of the United States			01	White
						02	Black
						03	American Indian / Alaskan Native
						04	Chinese
						05	Japanese
						06	Hawaiian (includes part Hawaiian)
						07	Filipino
						08	Other Asian or Pacific Islander
						99	Unknown or not stated
						Blank	Not on certificate
201-211	11	FILLER	**Filler**			Blank	
212	1	LBO_REC	**Live Birth Order Recode**		U,R	1-7	Live birth order
						8	Live birth order of 8 or more
						9	Unknown or not stated
213-216	4	FILLER	**Filler**			Blank	
217	1	TBO_REC	**Total Birth Order Recode**		U,R	1-7	Total birth order
						8	Total birth order of 8 or more
						9	Unknown or not stated
218-244	27	FILLER	**Filler**			Blank	

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
245-246	2	PRECARE	**Month Prenatal Care Began**				
				668	R	00	No prenatal care
						01-10	Month prenatal care began
						99	Unknown or not stated
						Blank	Not on certificate
247	1	PRECARE_REC	**Moth Prenatal Care Began Recode**				
				668	R	1	1st to 3rd month
						2	4th to 6th month
						3	7th to final month
						4	No prenatal care
						5	Unknown or not stated
						Blank	Not on certificate
248-255	8	FILLER	**Filler**			Blank	
256-257	2	MPCB	**Month Prenatal Care Began**				
				669	U	00	No prenatal care
						01-10	Month prenatal care began
						99	Unknown or not stated
						Blank	Not on certificate
258	1	MPCB_REC6	**Month Prenatal Care Began Recode 6**				
				669	U	1	1st to 2nd month
						2	3rd month
						3	4th to 6th month
						4	7th to final month
						5	No prenatal care
						6	Unknown or not stated
						Blank	Not on certificate
259	1	MPCB_REC5	**Month Prenatal Care Began Recode 5**				
				669	U	1	1st trimester (1st to 3rd month)
						2	2nd trimester (4th to 6th month)
						3	3rd trimester (7th to final month)
						4	No prenatal care
						5	Unknown or not stated
						Blank	Not on certificate
260-269	10	FILLER	**Filler**			Blank	

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
270-271	2	UPREVIS	**Number of Prenatal Visits**	671	U,R	00-49 99	Number of prenatal visits Unknown or not stated
272-273	2	PREVIS_REC	**Number of Prenatal Visits Recode**	671	U,R	01 02 03 04 05 06 07 08 09 10 11 12	No visits 1 to 2 visits 3 to 4 visits 5 to 6 visits 7 to 8 visits 9 to 10 visits 11 to 12 visits 13 to 14 visits 15 to 16 visits 17 to 18 visits 19 or more visits Unknown or not stated
274-275	2	FILLER	**Filler**			Blank	
276-277	2	WTGAIN	**Weight Gain**	648	U,R	00-97 98 99	Weight gain in pounds 98 pounds and over Unknown or not stated
278	1	WTGAIN_REC	**Weight Gain Recode**	648	U,R	1 2 3 4 5 9	Less than 11 pounds 11 to 20 pounds 21 to 30 pounds 31 to 40 pounds 41 to 98 pounds Unknown or not stated
279	1	FILLER	**Filler**			Blank	
280	1	DFPC_IMP	**Day of Date First Prenatal Care Imputed**		R	Blank 1	Day of date first prenatal care not imputed Day of date first prenatal care imputed
281-283	3	FILLER	**Filler**			Blank	
284-285	2	CIG_1	**Cigarettes 1st Trimester**	575	R	00-97 98	Number of cigarettes daily 98 or more cigarettes daily

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
						99	Unknown or not stated
						Blank	Not on certificate
286-287	2	CIG_2	**Cigarettes 2nd Trimester**	575	R	00-97	Number of cigarettes daily
						98	98 or more cigarettes daily
						99	Unknown or not stated
						Blank	Not on certificate
288-289	2	CIG_3	**Cigarettes 3rd Trimester**	575	R	00-97	Number of cigarettes daily
						98	98 or more cigarettes daily
						99	Unknown or not stated
						Blank	Not on certificate
290	1	TOBUSE	**Tobacco Use**	667	U	1	Yes
						2	No
						9	Unknown or not stated
						Blank	Not on certificate
291-292	2	CIGS	**Cigarettes per Day**		U	00-97	Number of cigarettes daily
						98	98 or more cigarettes daily
						99	Unknown or not stated
						Blank	Not on certificate
293	1	CIG_REC6	**Cigarette Recode**		U	0	Non-smoker
						1	1 to 5 cigarettes daily
						2	6 to 10 cigarettes daily
						3	11 to 20 cigarettes daily
						4	21 to 40 cigarettes daily
						5	41 or more cigarettes daily
						6	Unknown or not stated
						Blank	Not on certificate
294	1	CIG_REC	**Cigarette Recode**	575	R	Y	Yes
						N	No
						U	Unknown or not stated
						Blank	Not on certificate
295-304	10	FILLER	**Filler**			Blank	

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
305-307	3	PWGT	**Prepregnancy Weight**	577	R	074	less than 75 pounds
						075-374	75 – 374 pounds
						375	375 or more pounds
						999	Unknown or not stated
308	1	FILLER	**Filler**			Blank	
309-311	3	DWGT	**Maternal Delivery Weight**	578	R	099	less than 100 pounds
						100-399	100 – 399 pounds
						400	400 or more pounds
						999	Unknown or not stated
312	1	FILLER	**Filler**			Blank	
313-319	9	**Risk Factors (Revised)**					
		The checkbox items below follow this code structure:				Y	Yes
						N	No
						U	Unknown or not stated
						Blank	Not on certificate
313	1	RF_DIAB	**Prepregnancy Diabetes**	582	R		
314	1	RF_GEST	**Gestational Diabetes**	583	R		
315	1	RF_PHYP	**Prepregnancy Hypertension**	584	R		
316	1	RF_GHYP	**Gestational Hypertension**	585	R		
317	1	RF_ECLAM	**Eclampsia**	586	R		
318	1	RF_PPTERM	**Previous Preterm Birth**	587	R		
319	1	RF_PPOUTC	**Poor Pregnancy Outcome**	588	R		
320-323	4	FILLER	**Filler**			Blank	
324	1	RF_CESAR	**Previous Cesarean Deliveries**	593	R	Y	Yes
						N	No
						U	Unknown or not stated
						Blank	Not on certificate
325-326	2	RF_CESARN	**Number of Previous Cesarean Deliveries**	594	R	00	None
						01-30	Number of previous cesareans

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
						99	Unknown or not stated
						Blank	Not on certificate
327	1	FILLER	**Filler**			Blank	
328-344	17	**Risk Factors**					
		The checkbox items below follow this structure:				1	Yes
		The version is all 1989 Standard unless otherwise noted.				2	No
						9	Unknown
						Blank	Not on certificate
328-330	3	FILLER	**Filler**				
331	1	URF_DIAB	**Diabetes**	684	U,R		
332-334	3	FILLER	**Filler**				
335	1	URF_CHYPER	**Chronic Hypertension**	688	U,R		
336	1	URF_PHYPER	**Pregnancy Associated Hypertension**	689	U,R		
337	1	URF_ECLAM	**Eclampsia**	690	U,R		
338-344	7	FILLER	**Filler**				
345-350	6	FILLER	**Filler**			Blank	
351-354	4	**Obstetric Procedures (Revised)**					
		The checkbox items below follow this structure:				Y	Yes
						N	No
						U	Unknown or not stated
						Blank	Not on certificate
351	1	OP_CERV	**Cervical Cerclage**	601	R		
352	1	OP_TOCOL	**Tocolysis**	602	R		
353	1	OP_ECVS	**Successful External Cephalic Version**	603	R		
354	1	OP_ECVF	**Failed External Cephalic Version**	604	R		
355-361	7	**Obstetric Procedures**					
		The checkbox items below follow this structure:				1	Yes
		The version is all 1989 Standard unless otherwise noted.				2	No
						9	Unknown or not stated

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
						Blank	Not on certificate
355-356	2	FILLER	**Filler**				
357	1	UOP_INDUC	**Induction of Labor**	703	U,R		
358	1	FILLER	**Filler**				
359	1	UOP_TOCOL	**Tocolysis**	705	U,R		
360-361	2	FILLER	**Filler**				
362-364	3	**Onset of Labor**				Y	Yes
		The checkbox items below follow this structure:				N	No
						U	Unknown or not stated
						Blank	Not on certificate
362	1	ON_RUPTR	**Premature Rupture of Membrane**				
				605	R		
363	1	ON_PRECIP	**Precipitous Labor**	606	R		
364	1	ON_PROL	**Prolonged Labor**	607	R		
365-373	9	**Characteristics of Labor and Delivery (Revised)**					
		The checkbox items below follow this structure:				Y	Yes
						N	No
						U	Unknown or not stated
						Blank	Not on certificate
365	1	LD_INDL	**Induction of Labor**	608	R		
366	1	LD_AUGM	**Augmentation of Labor**	609	R		
367	1	LD_NVPR	**Non-Vertex Presentation**	610	R		
368	1	LD_STER	**Steroids**	611	R		
369	1	LD_ANTI	**Antibiotics**	612	R		
370	1	LD_CHOR	**Chorioamnionitis**	613	R		
371	1	LD_MECS	**Meconium Staining**	614	R		
372	1	LD_FINT	**Fetal Intolerance**	615	R		
373	1	LD_ANES	**Anesthesia**	616	R		
374-389	16	**Complications of Labor and Delivery**					
		The checkbox items below follow this structure:				1	Yes
		The version is all 1989 Standard unless otherwise noted.				2	No
						9	Unknown or not stated
						Blank	Not on certificate
374	1	FILLER	**Filler**				
375	1	ULD_MECO	**Meconium**	712	U,R		

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Position		Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
	376-380	5	FILLER	**Filler**				
	381	1	ULD_PRECIP	**Precipitous Labor**	718	U,R		
	382-383	2	FILLER	**Filler**				
	384	1	ULD_BREECH	**Breech**	721	U,R		
	385-389	5	FILLER	**Filler**				
390-394		5	**Method of Delivery (Revised)**					
	390	1	ME_ATTF	**Attempted Forceps**	617	R	Y	Yes
							N	No
							U	Unknown
							Blank	Not on certificate
	391	1	ME_ATTV	**Attempted Vacuum**	618	R	Y	Yes
							N	No
							U	Unknown
							Blank	Not on certificate
	392	1	ME_PRES	**Fetal Presentation**	619	R	1	Cephalic
							2	Breech
							3	Other
							9	Unknown or not stated
							Blank	Not on certificate
	393	1	ME_ROUT	**Route & Method of Delivery**				
					620	R	1	Spontaneous
							2	Forceps
							3	Vacuum
							4	Cesarean
							9	Unknown or not stated
							Blank	Not on certificate
	394	1	ME_TRIAL	**Trial of Labor Attempted**	621	R	Y	Yes
							N	No
							X	Not applicable
							U	Unknown or not stated
							Blank	Not on certificate
395-400		6	**Method of Delivery (Unrevised)**					
				The checkbox items indented below follow this structure:			1	Yes

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
						2	No
						9	Unknown or not stated
395	1	UME_VAG	Vaginal	730	U		
396	1	UME_VBAC	Vaginal after cesarean	731	U		
397	1	UME_PRIMC	Primary cesarean	732	U		
398	1	UME_REPEC	Repeat cesarean	733	U		
399	1	UME_FORCP	Forceps	734	U,R		
400	1	UME_VAC	Vacuum	735	U,R		
401	1	RDMETH_REC	**Delivery Method Recode (Revised)**	679	R	1	Vaginal (excludes vaginal after previous cesarean)
						2	Vaginal after previous cesarean
						3	Primary cesarean
						4	Repeat cesarean
						5	Vaginal (unknown if previous cesarean) (2003 Standard only)
						6	Cesarean (unknown if previous cesarean) (2003 Standard only)
						9	Not stated
402	1	UDMETH_REC	**Delivery Method Recode (Unrevised)**	680	U	1	Vaginal (excludes vaginal after previous cesarean)
						2	Vaginal after previous cesarean
						3	Primary cesarean
						4	Repeat cesarean
						9	Not stated
403	1	DMETH_REC			U,R	1	Vaginal
						2	Cesarean
						9	Unknown
404-409	6	FILLER	**Filler**			Blank	
410	1	ATTEND	**Attendant**		U,R	1	Doctor of Medicine (MD)
						2	Doctor of Osteopathy (DO)
						3	Certified Nurse Midwife (CNM)
						4	Other Midwife
						5	Other
						9	Unknown or not stated
411-414	4	FILLER	**Filler**			Blank	

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
415-416	2	APGAR5	**Five Minute APGAR Score**	574	U,R	00-10 99	A score of 0-10 Unknown or not stated
417	1	APGAR5R	**Five Minute APGAR Recode**	574	U,R	1 2 3 4 5	A score of 0-3 A score of 4-6 A score of 7-8 A score of 9-10 Unknown or not stated
418-422	5	FILLER	**Filler**			Blank	
423	1	DPLURAL	**Plurality Recode**		U,R	1 2 3 4 5	Single Twin Triplet Quadruplet Quintuplet or higher
424	1	FILLER	**Filler**			Blank	
425	1	IMP_PLUR	**Plurality Imputed**		U,R	Blank 1	Plurality is not imputed Plurality is imputed
426-435	10	FILLER	**Filler**			Blank	
436	1	SEX	**Sex of Infant**		U,R	M F	Male Female
437	1	IMP_SEX	**Imputed Sex**		U,R	Blank 1	Infant Sex not Imputed Infant Sex is Imputed
438-439	2	DLMP_MM	**Last Normal Menses - Month**		U,R	01 02 03 04 05 06 07	January February March April May June July

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
						08	August
						09	September
						10	October
						11	November
						12	December
						99	Unknown or not stated
440-441	2	FILLER	Filler			Blank	
442-445	4	DLMP_YY	**Last Normal Menses - Year**		U,R	nnnn	Year of last normal menses
						9999	Unknown or not stated
446-447	2	ESTGEST	**Obstetric/Clinical Gestation Est.**				
				573	U,R	00-98	0 through 98th week of gestation
						99	Unknown or not stated
448-450	3	FILLER	**Filler**			Blank	
451-452	2	COMBGEST	**Gestation – Detail in Weeks**	670	U,R	17-47	17th through 47th week of Gestation
						99	Unknown
453-454	2	GESTREC10	**Gestation Recode 10**		U,R	01	Under 20 weeks
						02	20-27 weeks
						03	28-31 weeks
						04	32-33 weeks
						05	34-36 weeks
						06	37-38 weeks
						07	39 weeks
						08	40 weeks
						09	41 weeks
						10	42 weeks and over
						99	Unknown
455	1	GESTREC3	**Gestation Recode 3**		U,R	1	Under 37 weeks
						2	37 weeks and over
						3	Not stated
456	1	OBGEST_FLG	**Obstetric/Clinical Est. of Gestation Used Flag**		U,R	Blank	Clinical Estimate is not used
						1	Clinical Estimate is used

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
457	1	GEST_IMP	**Gestation Imputed Flag**		U,R	Blank 1	Gestation is not imputed Gestation is imputed
458-462	5	FILLER	**Filler**			Blank	
463-466	4	DBWT	**Birth Weight – Detail in Grams**		U,R	0227-8165	Number of grams
467-470	4	FILLER	**Filler**			Blank	
471-472	2	BWTR12	**Birth Weight Recode 12**		U,R	01 02 03 04 05 06 07 08 09 10 11 12	499 grams or less 500 – 999 grams 1000 - 1499 grams 1500 – 1999 grams 2000 – 2499 grams 2500 – 2999 grams 3000 – 3400 grams 3500 – 3999 grams 4000 – 4499 grams 4500 – 4999 grams 5000 – 8165 grams Not Stated
473	1	BWTR4	**Birth Weight Recode 4**		U,R	1 2 3 4	1499 grams or less 1500 – 2499 grams 2500 grams or more Unknown or not stated
474-475	2	FILLER	**Filler**			Blank	
476-482	7	**Abnormal Conditions of the Newborn (Revised)** The checkbox items below follow this structure:				Y N U Blank	Yes, Complication reported No Complication reported Unknown or not stated Not on certificate
476	1	AB_AVEN1	**Assisted Ventilation**	628	R		
477	1	AB_AVEN6	**Assisted Ventilation > 6 hrs**	629	R		
478	1	AB_NICU	**Admission to NICU**	630	R		
479	1	AB_SURF	**Surfactant**	631	R		
480	1	AB_ANTI	**Antibiotics**	632	R		
481	1	AB_SEIZ	**Seizures**	633	R		

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
482	1	AB_BINJ	**Birth Injury**	634	R		
483-491	9	FILLER	**Filler**			Blank	
492-503	12	**Congenital Anomalies of the Newborn (Revised)**					
		The checkbox items below follow this structure:				Y	Yes, anomaly reported
						N	No, anomaly not reported
						U	Unknown
						Blank	Not on certificate
492	1	CA_ANEN	**Anencephaly**	635	R		
493	1	CA_MNSB	**Meningomyelocele / Spina Bifida**	636	R		
494	1	CA_CCHD	**Cyanotic Congenital Heart Disease**	637	R		
495	1	CA_CDH	**Congenital Diaphragmatic Hernia**	638	R		
496	1	CA_OMPH	**Omphalocele**	639	R		
497	1	CA_GAST	**Gastroschisis**	640	R		
498	1	CA_LIMB	**Limb Reduction Defect**	641	R		
499	1	CA_CLEFT	**Cleft Lip w/ or w/o Cleft Palate**	642	R		
500	1	CA_CLPAL	**Cleft Palate alone**	643	R		
501	1	CA_DOWNS	**Down Syndrome**	644	R	C	Confirmed
						P	Pending
						N	No
						U	Unknown
						Blank	Not on certificate
502	1	CA_DISOR	**Suspected Chromosomal Disorder**	645	R	C	Confirmed
						P	Pending
						N	No
						U	Unknown
						Blank	Not on certificate
503	1	CA_HYPO	**Hypospadias**	646	R	Y	Yes, anomaly reported
						N	No, anomaly not reported
						U	Unknown
						Blank	Not on certificate

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
504-525	22	**Congenital Anomalies of the Newborn**					
		The checkbox items below follow this structure:				1	Anomaly reported
		The version is all 1989 Standard unless otherwise noted.				2	Anomaly not reported
						9	Anomaly not classifiable
						Blank	Not on certificate
504	1	UCA_ANEN	**Anencephalus**	752	U,R		
505	1	UCA_SPINA	**Spina Bifida / Meningocele**	753	U,R		
506-512	7	FILLER	**Filler**				
513	1	UCA_OMPHA	**Omphalocele / Gastroschisis**	761	U,R		
514-517	4	FILLER	**Filler**				
518	1	UCA_CELFTLP	**Cleft Lip / Palate**	766	U,R		
519-520	2	FILLER	**Filler**				
521	1	UCA_HERNIA	**Diaphragmatic Hernia**	769	U,R		
522	1	FILLER	**Filler**				
523	1	UCA_DOWNS	**Down Syndrome**	771	U,R		
524-525	2	FILLER	**Filler**				
526-568	43	FILLER	**Filler**			Blank	
569-773	101	**Flag File for Reporting Flags**					
		The reporting flags below follow this coding structure:				0	Not reporting
						1	Reporting
569	1	F_MORIGIN	**Origin of Mother**		U,R		
570	1	F_FORIGIN	**Origin of Father**		U,R		
571	1	F_MEDUC	**Education of Mother**		R		
572	1	FILLER	**Filler**			Blank	
573	1	F_CLINEST	**Clinical Estimate of Gestation**		U,R		
574	1	F_APGAR5	**Five minute APGAR**		U,R		
575	1	F_TOBACO	**Tobacco use**		R		
576	1	FILLER	**Filler**			Blank	
577	1	F_PWGT	**Prepregnancy Weight**		R		
578	1	F_DWGT	**Delivery Weight**		R		
579-581	3	FILLER	**Filler**			Blank	
582	1	F_RF_PDIAB	**Prepregnancy Diabetes**		R		
583	1	F_RF_GDIAB	**Gestational Diabetes**		R		
584	1	F_RF_PHYPER	**Prepregnancy Hypertension**		R		
585	1	F_RF_GHYPER	**Gestational Hypertension**		R		
586	1	F_RF_ECLAMP	**Eclampsia**		R		

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
587	1	F_RF_PPB	**Previous Preterm Birth**		R		
588	1	F_RF_PPO	**Poor Pregnancy outcomes**		R		
589-592	4	FILLER	**Filler**			Blank	
593	1	F_RF_CESAR	**Previous Cesarean**		R		
594	1	F_RF_NCESAR	**Number of Previous Cesareans**		R		
595-600	6	FILLER	**Filler**			Blank	
601	1	F_OB_CERVIC	**Cervical Cerclage**		R		
602	1	F_OB_TOCO	**Tocolysis**		R		
603	1	F_OB_SUCC	**Successful External Cephalic Version**		R		
604	1	F_OB_FAIL	**Failed External Cephalic Version**		R		
605	1	F_OL_RUPTURE	**Premature Rupture of the Membranes**		R		
606	1	F_OL_PRECIP	**Precipitous Labor**		R		
607	1	F_OL_PROLONG	**Prolonged Labor**		R		
608	1	F_LD_INDUCT	**Induction of Labor**		R		
609	1	F_LD_AUGMENT	**Augmentation of Labor**		R		
610	1	FILLER	**Filler**			Blank	
611	1	F_LD_STERIODS	**Steroids**		R		
612	1	F_LD_ANTIBIO	**Antibiotics**		R		
613	1	F_LD_CHORIO	**Chorioamnionitis**		R		
614	1	F_LD_MECON	**Meconium Staining**		R		
615	1	F_LD_FINTOL	**Fetal Intolerance**		R		
616	1	F_LD_ANESTH	**Anesthesia**		R		
617-618	2	FILLER	**Filler**			Blank	
619	1	F_MD_PRESENT	**Fetal Presentation**		R		
620	1	F_MD_ROUTE	**Final Route and Method of Delivery**		R		
621	1	F_MD_TRIAL	**Trial of Labor Attempted**		R		
622-627	6	FILLER	**Filler**			Blank	
628	1	F_AB_VENT	**Assisted Ventilation**		R		
629	1	F_AB_VENT6	**Assisted Ventilation >6 hrs**		R		
630	1	F_AB_NIUC	**Admission to NICU**		R		
631	1	F_AB_SURFAC	**Surfactant**		R		
632	1	F_AB_ANTIBIO	**Antibiotics**		R		
633	1	F_AB_SEIZ	**Seizures**		R		
634	1	F_AB_INJ	**Birth Injury**		R		
635	1	F_CA_ANEN	**Anencephaly**		R		
636	1	F_CA_MENIN	**Meningomyelocele/Spina Bifida**		R		
637	1	F_CA_HEART	**Cyanotic Congenital Heart Disease**		R		
638	1	F_CA_HERNIA	**Congenital Diaphragmatic Hernia**		R		
639	1	F_CA_OMPHA	**Omphalocele**		R		
640	1	F_CA_GASTRO	**Gastroschisis**		R		

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Position	Len	Field	Description	Reporting Flag Position	Rev*	Values	Definition
641	1	F_CA_LIMB	**Limb Reduction Defect**		R		
642	1	F_CA_CLEFTLP	**Cleft Lip with or without Cleft Palate**		R		
643	1	F_CA_CLEFT	**Cleft Plate Alone**		R		
644	1	F_CA_DOWNS	**Down Syndrome**		R		
645	1	F_CA_CHROM	**Suspected Chromosomal Disorder**		R		
646	1	F_CA_HYPOS	**Hypospadias**		R		
647	1	F_MED	**Mother's Education**		U		
648	1	F_WTGAIN	**Weight Gain**		U,R		
649-666	18	FILLER	**Filler**			Blank	
667	1	F_TOBAC	**Tobacco Use**		U		
668	1	F_MPCB	**Month Prenatal Care Began**		R		
669	1	F_MPCB_U	**Month Prenatal Care Began**		U		
670-683	14	FILLER	**Filler**			Blank	
684	1	F_URF_DIABETES	**Diabetes**		U,R		
685-687	3	FILLER	**Filler**			Blank	
688	1	F_URF_CHYPER	**Chronic Hypertension**		U,R		
689	1	F_URF_PHYPER	**Pregnancy Associated Hypertension**		U,R		
690	1	F_URF_ECLAMP	**Eclampsia**		U,R		
691-702	12	FILLER	**Filler**			Blank	
703	1	F_UOB_INDUCT	**Induction of Labor**		U,R		
704	1	FILLER	**Filler**			Blank	
705	1	F_UOB_TOCOL	**Tocolysis**		U,R		
706-711	6	FILLER	**Filler**			Blank	
712	1	F_ULD_MECONIUM	**Meconium**		U,R		
713-717	5	FILLER	**Filler**			Blank	
718	1	F_ULD_PRECIP	**Precipitous Labor**		U,R		
719-720	2	FILLER	**Filler**			Blank	
721	1	F_ULD_BREECH	**Breech**		U,R		
722-729	8	FILLER	**Filler**			Blank	
730	1	F_U_VAGINAL	**Vaginal**		U		
731	1	F_U_VBAC	**Vaginal after Cesarean**		U		
732	1	F_U_PRIMAC	**Primary Cesarean**		U		
733	1	F_U_REPEAC	**Repeat Cesarean**		U		
734	1	F_U_FORCEP	**Forceps**		U,R		
735	1	F_U_VACUUM	**Vacuum**		U,R		
736-751	16	FILLER	**Filler**			Blank	
752	1	F_UCA_ANEN	**Anencephalus**		U,R		
753	1	F_UCA_SPINA	**Spina Bifida / Meningocele**		U,R		
754-760	7	FILLER	**Filler**			Blank	
761	1	F_UCA_OMPHALO	**Omphalocele / Gastroschisis**		U,R		

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762-765	4	FILLER	**Filler**			Blank	
766	1	F_UCA_CLEFTLP	**Cleft Lip / Palate**		U,R		
767-768	2	FILLER	**Filler**			Blank	
769	1	F_UCA_HERNIA	**Hernia**		U,R		
770	1	FILLER	**Filler**			Blank	
771	1	F_UCA_DOWNS	**Down Syndrome**		U,R		
772-775	4	FILLER	**Filler**			Blank	

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Country Codes
(Alphabetical by Code)

Code	Geopolitical Entity
AA	ARUBA
AC	ANTIGUA AND BARBUDA
AE	UNITED ARAB EMIRATES
AF	AFGHANISTAN
AG	ALGERIA
AJ	AZERBAIJAN
AL	ALBANIA
AM	ARMENIA
AN	ANDORRA
AO	ANGOLA
AQ	AMERICAN SAMOA
AR	ARGENTINA
AS	AUSTRALIA
AT	ASHMORE AND CARTIER ISLANDS
AU	AUSTRIA
AV	ANGUILLA
AY	ANTARCTICA
BA	BAHRAIN
BB	BARBADOS
BC	BOTSWANA
BD	BERMUDA
BE	BELGIUM
BF	BAHAMAS, THE
BG	BANGLADESH
BH	BELIZE
BK	BOSNIA AND HERZEGOVINA
BL	BOLIVIA
BM	BURMA
BN	BENIN
BO	BELARUS
BP	SOLOMON ISLANDS
BR	BRAZIL
BS	BASSAS DA INDIA
BT	BHUTAN
BU	BULGARIA
BV	BOUVET ISLAND
BX	BRUNEI
BY	BURUNDI
CA	CANADA
CB	CAMBODIA
CD	CHAD
CE	SRI LANKA
CF	CONGO
CG	CONGO
CH	CHINA
CI	CHILE
CJ	CAYMAN ISLANDS
CK	COCOS (KEELING) ISLANDS
CL	CENTRAL AND SOUTHERN LINE ISLANDS
CM	CAMEROON
CN	COMOROS
CO	COLOMBIA
CQ	NORTHERN MARIANAS ISLANDS
CR	CORAL SEA ISLANDS

Country Codes
(Alphabetical by Code)

Code	Geopolitical Entity
CS	COSTA RICA
CT	CENTRAL AFRICAN REPUBLIC
CU	CUBA
CV	CAPE VERDE
CW	COOK ISLANDS
CY	CYPRUS
CZ	CZECHOSLOVAKIA
DA	DENMARK
DJ	DJIBOUTI
DM	DAHOMEY [BENIN]
DO	DOMINICA
DQ	JARVIS ISLAND
DR	DOMINICAN REPUBLIC
EB	EAST BERLIN
EC	ECUADOR
EG	EGYPT
EI	IRELAND
EK	EQUATORIAL GUINEA
EN	ESTONIA
EQ	CANTON AND ENDERBERRY ISLANDS
ER	ERITREA
ES	EL SALVADOR
ET	ETHIOPIA
EU	EUROPA ISLAND
EZ	CZECH REPUBLIC
FG	FRENCH GUIANA
FI	FINLAND
FJ	FIJI
FK	FALKLAND ISLANDS
FM	MICRONESIA, FEDERATED STATES OF
FO	FAROE ISLANDS
FP	FRENCH POLYNESIA
FR	FRANCE
FS	FRENCH SOUTHERN AND ANTARCTIC LANDS
FT	FRENCH TERRITORY OF THE AFFARS AND ISSAS
GA	GAMBIA, THE
GB	GABON
GC	EAST GERMANY (GERMAN DEMOCRATIC REPUBLIC)
GE	WEST GERMANY (FEDERAL REPUBLIC OF GERMANY)
GG	GEORGIA
GH	GHANA
GI	GIBRALTAR
GJ	GRENADA
GK	GUERNSEY
GL	GREENLAND
GM	GERMANY
GN	GILBERT AND ELLICE ISLANDS
GO	GLORIOSO ISLANDS
GP	GUADELOUPE
GQ	GUAM
GR	GREECE
GS	GILBERT ISLANDS
GT	GUATEMALA
GV	GUINEA

Country Codes
(Alphabetical by Code)

Code	Geopolitical Entity
GY	GUYANA
GZ	GAZA STRIP
HA	HAITI
HK	HONG KONG
HM	HEARD ISLAND AND MCDONALD ISLANDS
HO	HONDURAS
HQ	HOWLAND ISLAND
HR	CROATIA
HU	HUNGARY
IC	ICELAND
ID	INDONESIA
IM	ISLE OF MAN
IN	INDIA
IO	BRITISH INDIAN OCEAN TERRITORY
IP	CLIPPERTON ISLAND
IQ	US MISCELLANEOUS PACIFIC ISLANDS
IR	IRAN
IS	ISRAEL
IT	ITALY
IU	ISRAEL-SYRIA DEMILITARIZED ZONE
IV	COTE D' IVOIRE
IW	ISRAEL-JORDAN DEMILITARIZED ZONE
IY	IRAQ-SAUDI ARABIA NEUTRAL ZONE
IZ	IRAQ
JA	JAPAN
JE	JERSEY
JM	JAMAICA
JN	JAN MAYEN
JO	JORDAN
JQ	JOHNSTON ISLAND
JS	SVALBARD AND JAN MAYEN
JU	JUAN DE NOVA ISLAND
KE	KENYA
KG	KYRGYZSTAN
KN	NORTH KOREA
KR	KIRIBATI
KS	SOUTH KOREA
KT	CHRISTMAS ISLAND
KU	KUWAIT
KZ	KAZAKHSTAN
LA	LAOS
LE	LEBANON
LG	LATVIA
LH	LITHUANIA
LI	LIBERIA
LO	SLOVAKIA
LQ	PALMYRA ATOLL
LS	LIECHTENSTEIN
LT	LESOTHO
LU	LUXEMBOURG
LY	LIBYA
MA	MADAGASCAR
MB	MARTINIQUE
MC	MACAU

Country Codes
(Alphabetical by Code)

Code	Geopolitical Entity
MD	MOLDOVA
ME	SPANISH NORTH AFRICA
MF	MAYOTTE
MG	MONGOLIA
MH	MONTSERRAT
MI	MALAWI
MK	MACEDONIA, F.Y.R.O.
ML	MALI
MN	MONACO
MO	MOROCCO
MP	MAURITIUS
MQ	MIDWAY ISLAND
MR	MAURITANIA
MT	MALTA
MU	OMAN
MV	MALDIVES
MX	MEXICO
MY	MALAYSIA
MZ	MOZAMBIQUE
NA	NETHERLANDS ANTILLES
NC	NEW CALEDONIA
NE	NIUE
NF	NORFOLK ISLAND
NG	NIGER
NH	VANUATU
NI	NIGERIA
NL	NETHERLANDS
NO	NORWAY
NP	NEPAL
NR	NAURU
NS	SURINAME
NT	NETHERLANDS ANTILLES
NU	NICARAGUA
NZ	NEW ZEALAND
PA	PARAGUAY
PC	PITCAIRN ISLAND
PE	PERU
PF	PARACEL ISLANDS
PG	SPRATLY ISLANDS
PK	PAKISTAN
PL	POLAND
PM	PANAMA
PN	PANAMA
PO	PORTUGAL
PP	PAPUA NEW GUINEA
PQ	PANAMA CANAL ZONE
PS	PALAU
PT	TIMOR
PU	GUINEA-BISSAU
QA	QATAR
RE	REUNION
RH	SOUTHERN RHODESIA
RM	MARSHALL ISLANDS
RO	ROMANIA

Country Codes
(Alphabetical by Code)

Code	Geopolitical Entity
RP	PHILIPPINES
RQ	PUERTO RICO
RS	RUSSIA
RW	RWANDA
SA	SAUDI ARABIA
SB	SAINT PIERRE AND MIQUELON
SC	SAINT KITTS AND NEVIS
SE	SEYCHELLES
SF	SOUTH AFRICA
SG	SENEGAL
SH	SAINT HELENA
SI	SLOVENIA
SK	SIKKIM
SL	SIERRA LEONE
SM	SAN MARINO
SN	SINGAPORE
SO	SOMALIA
SP	SPAIN
SQ	SWAN ISLANDS
SS	SPANISH SAHARA
ST	SAINT LUCIA
SU	SUDAN
SV	SVALBARD
SW	SWEDEN
SX	SOUTH GEORGIA AND THE SOUTH SANDWICH ISLANDS
SY	SYRIA
SZ	SWITZERLAND
TC	UNITED ARAB EMIRATES
TD	TRINIDAD AND TOBAGO
TE	TROMELIN ISLAND
TH	THAILAND
TI	TAJIKISTAN
TK	TURKS AND CAICOS ISLANDS
TL	TOKELAU
TN	TONGA
TO	TOGO
TP	SAO TOME AND PRINCIPE
TQ	TRUST TERRITORY OF THE PACIFIC ISLANDS
TS	TUNISIA
TT	EAST TIMOR
TU	TURKEY
TV	TUVALU
TW	TAIWAN
TX	TURKMENISTAN
TZ	TANZANIA
UG	UGANDA
UK	UNITED KINGDOM
UP	UKRAINE
UR	UNION OF SOVIET SOCIALIST REPUBLICS
US	UNITED STATES
UV	BURKINA FASO
UY	URUGUAY
UZ	UZBEKISTAN
VC	SAINT VINCENT AND THE GRENADINES

Country Codes
(Alphabetical by Code)

Code	Geopolitical Entity
VE	VENEZUELA
VI	BRITISH VIRGIN ISLANDS
VM	VIETNAM
VN	NORTH VIETNAM
VQ	UNITED STATES VIRGIN ISLANDS
VS	SOUTH VIETNAM
VT	HOLY SEE (VATICAN CITY)
WA	NAMIBIA
WB	WEST BERLIN
WE	WEST BANK
WF	WALLIS AND FUTUNA
WI	WESTERN SAHARA
WQ	WAKE ISLAND
WS	SAMOA
WZ	SWAZILAND
YE	YEMEN (SANA'A)
YI	YUGOSLAVIA
YM	YEMEN
YO	YUGOSLAVIA
YQ	RYUKYU ISLANDS, SOUTHERN
YS	YEMEN (ADEN)
ZA	ZAMBIA
ZI	ZIMBABWE

DETAILED TECHNICAL NOTES *

UNITED STATES

2010

NATALITY

**U.S. DEPARTMENT OF
HEALTH AND HUMAN SERVICES**

**CENTERS FOR DISEASE CONTROL AND PREVENTION
NATIONAL CENTER FOR HEALTH STATISTICS**
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Introduction

These Detailed Technical Notes, published by the Centers for Disease Control and Prevention's National Center for Health Statistics (NCHS), supplement the "Technical Notes" section of "Births: Final Data for 2010" [1], and are for use with the 2010 Natality public use data. The 2010 natality micro-data file may be downloaded at: http://www.cdc.gov/nchs/data_access/VitalStatsOnline.htm [2] and is available on CD-ROM by request. These Technical Notes also provide additional documentation for VitalStats http://www.cdc.gov/nchs/VitalStats.htm, a data access and analysis tool [3]. VitalStats includes interactive pre-built tables and the ability to create tables and graphics using more than 100 demographic and health variables from the 1990-2010 natality public-use files.

Beginning with the 2005 data year, the micro-data natality file no longer includes geographic detail (e.g., state or county of birth). Information on the NCHS data release policy is available at: http://www.cdc.gov/nchs/nvss/dvs_data_release.htm [4]. Tabulations of birth data by state and for counties with populations of 100,000 or more may be made using VitalStats as described above. Procedures for requesting micro-data files with geographic detail are provided in the NCHS data release policy.

Beginning with the 2007 data year, data items exclusive to the 1989 revision of the U.S. Standard Certificate of Live Birth (i.e., maternal anemia, ultrasound, alcohol use) are no longer available in public use files.

"Births: Final Data for 2010" [1] does not include the following items previously found in this annual report: month of birth, day of week of birth, weight gain during pregnancy, educational attainment, tobacco use during pregnancy, month prenatal care began, and selected risk factors, obstetric procedures, characteristics of labor and delivery, and congenital anomalies. See **Tables I-2, I-3, I-5, I-6,** (available at http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_01_tables.pdf) and **Documentation Tables 2 through 11** in this guide for tabular data for these items.

Definition of Live Birth

Every product of conception that gives a sign of life after birth, regardless of the length of the pregnancy, is considered a live birth. This concept is included in the definition set forth by the World Health Organization in 1950 as described in a United Nation's Handbook [5]. A

slightly expanded definition of live birth was recommended by the 1992 revision of the Model State Vital Statistics Act and Regulations [6], based on recommendations of a 1988 working group formed by the American Academy of Pediatrics and the American College of Obstetricians and Gynecologists [7] and is consistent with that currently used by the WHO in the ICD-10 [8] and the United Nations**:**

> "Live birth" means the complete expulsion or extraction from its mother of a product of human conception, irrespective of the duration of pregnancy, which, after such expulsion or extraction, breathes, or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached. Heartbeats are to be distinguished from transient cardiac contractions; respirations are to be distinguished from fleeting respiratory efforts or gasps.

This definition distinguishes in precise terms a live birth from a fetal death [9,10]. The vast majority of registration areas use definitions of live births similar to this definition [9]. All states require the reporting of live births regardless of length of gestation or birth weight.

The Birth-Registration Area

Currently the birth-registration system of the United States includes the 50 states, the District of Columbia, the independent registration area of New York City, and Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands (referred to as Northern Marianas). However, in the statistical tabulations, "United States" refers only to the aggregate of the 50 states (including New York City) and the District of Columbia. Information on the history and development of the birth-registration area is available elsewhere [11,12].

Birth statistics for years prior to 1951 and for 1955 are based on the total file of birth records. Statistics for 1951-54, 1956-66, and 1968-71 are based on 50-percent samples except for data for Guam and the Virgin Islands, which are based on all records filed. During the processing of the 1967 data, the sampling rate was reduced from 50 percent to 20 percent. From 1972 to 1984 statistics are based on all records filed in the States submitting computer tapes and

on a 50-percent sample of records in all other States.

Since 1985, natality statistics for all states and the District of Columbia have been based on information from the total file of records, that is, all births registered in the reporting areas. The information is received on electronic files consisting of individual records processed by the states, the District of Columbia, New York City, Puerto Rico, the Virgin Islands, American Samoa, and the Northern Marianas (except for the Virgin Islands in 2009 and 2010). NCHS receives these files from the registration offices of all states, the two cities and four territories through the Vital Statistics Cooperative Program. Information for Guam and the Virgin Islands for 2010 is obtained from paper copies of original birth certificates which are coded and keyed by NCHS. Data from American Samoa first became available in 1997; data from the Northern Marianas in 1998.

U.S. natality data are limited to births occurring within the United States, including those occurring to U.S. residents and nonresidents. Births to nonresidents of the United States have been excluded from most published tabulations by place of residence beginning in 1970 (for further discussion see "Classification by occurrence and residence"). Births occurring to U.S. citizens outside the United States are not included in the natality file. Data for Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Northern Marianas are limited to births registered in these areas.

Classification of births by occurrence and residence

In tabulations by place of residence, births occurring within the United States to U.S. citizens and to residents who are not citizens are allocated to the usual place of residence of the mother in the United States, as reported on the birth certificate. Births to U.S. residents occurring outside this country are not included in tabulations by place of residence or place of occurrence.

The total count of births for the United States by place of residence and by place of occurrence will not be identical. Births to nonresidents of the United States are included in data by place of occurrence but excluded from data by place of residence, as previously indicated. See **Table A** for the number of births by residence and occurrence for the 50 states and the District of Columbia for 2010.

Residence error -- According to a 1950 test (which has not been repeated), errors in

residence reporting for the country as a whole tend to overstate the number of births to residents of urban areas and to understate the number of births to residents of other areas [13]. Recent experience based on anecdotal evidence from the states, suggests that this is still a concern. This tendency has assumed special importance because of a concomitant development—the increased utilization of hospitals in cities by residents of nearby places—with the result that a number of births are erroneously reported as having occurred to residents of urban areas. Another factor that contributes to this overstatement of urban births is the customary practice of using city addresses for persons living outside the city limits. Residence error should be taken into particular consideration in interpreting tabulated data for small areas. Both birth and infant mortality patterns can be affected.

Information on the completeness of reporting of birth certificate data is shown in **Table B**, which presents a listing of items and the percentage of records that were not stated for each state, plus Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Northern Marianas.

Population based rates -- One of the principal values of vital statistics data is realized through the presentation of rates that are computed by relating the vital events of a class to the population of a similarly defined class (e.g., 2010 births to women aged 20-24 years and the 2010 population of women aged 20-24). Vital statistics and population statistics, therefore, must be tabulated in comparable groups. Even when the variables common to both, such as geographic area, age, race, and sex, have been similarly classified and tabulated, significant discrepancies may result from differences between the enumeration method of obtaining population data and the registration method of obtaining vital statistics data [14].

Geographic classification -- The geographic code structure for the 2010 natality file is given in two NCHS manuals, "Vital Records Geographic Classification, 2003," and "Vital Records Geographic Classification, 2004, Federal Information Processing Standards (FIPS)." [15,16]. The geographic code structure on the 2010 file is based on results of the 2010 Census of Population.

Standard Certificates of Live Birth

The U.S. Standard Certificate of Live Birth, issued by the U.S. Department of Health and Human Services, has served for many years as the principal means for attaining uniformity in the content of the documents used to collect information on births in the United States. The U.S.

Standard Certificate of Live Birth is revised every 10-15 years. Most state certificates conform closely in content to the standard certificate, but are modified to the extent required by the particular state's needs or by special provisions of the state's vital statistics law.

The 2003 revision — In 2003, a revised U.S. Standard Certificate of Live Birth was adopted (**Figure 1**). The 2003 birth certificate replaces the previous 1989 U.S. Standard Certificate of Live Birth [11,17,18]. Implementation of the 2003 U.S. Standard Certificate of Live Birth (revised) by the states and independent reporting areas is being phased in over a number of years. See **Table C** for the year of implementation by state and independent reporting areas. Thirty-three states, the District of Columbia, Puerto Rico, and the Northern Marianas had implemented the revised birth certificate as of January 1, 2010: California, Colorado, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Michigan, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York (including New York City), North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Washington, and Wyoming. Two additional reporting areas implemented the revised birth certificate in 2010, but after January 1: Louisiana (December) and North Carolina (rolling). Data for reporting areas revising after January 1 are not included in **Documentation Tables 1 through 11**. Births to residents of the 33 states and the District of Columbia which had revised as of January 1, 2010 represent 76 percent of all births to United States residents in 2010. See **Table D** for a comparison of selected demographic and infant health characteristics of the revised reporting area (excluding Puerto Rico and the Northern Marianas) to the United States as a whole. Data from 2010 for the 33-state and the District of Columbia revised reporting area are presented in **Documentation Tables 1 through 11** of these Notes.

The 2003 Revision of the U.S. Standard Certificate of live birth introduced substantial changes to data content and quality. Many key data items are common between revisions; however, a number of items were substantively modified. The 2003 revision also includes many new items never before collected on the Standard Certificate [17,18].

A key aspect of the 2003 revision of the U.S. Standard Certificate of Live Birth has been the re-engineering of the data collection and transmission system. The intent of the re-engineering is to improve data quality, speed of data collection and transmission, and to enhance standardization of data [17,19]. To encourage collection of data from the best sources, two

worksheets have been developed: the "Mother's Worksheet" and the "Facility Worksheet." In the mother's worksheet, data are directly obtained from the mother and include items such as race, Hispanic origin and educational attainment. For the facility worksheet, data are obtained directly from the medical records of the mother and infant for items such as date of last normal menses, pregnancy risk factors, and method of delivery. To assist hospital staff in completing the facility worksheet, a comprehensive instruction manual was developed: *Guide to Completing the Facility Worksheets for the Certificate of Live Birth and Report of Fetal Death (2003 Revision)* [20]. Details of the nature and content of the 1989 revision are available elsewhere [11,12].

Comparability of data between the 1989 and 2003 Revisions of the United States Standard Certificates of Live Birth — Many data items (e.g., maternal age, birth order, marital status, attendant at birth, birthweight, gestational age) are common to both the 1989 and 2003 standard birth certificates and are considered directly comparable between revisions. Several key items, however (i.e., educational attainment, tobacco use during pregnancy, month prenatal care began and type of vaginal or cesarean delivery), although collected on both certificate revisions, were substantively modified. Data for these items are not considered comparable between revisions and are not combined in tabulations or in the data files. Beginning in 2008, key non-comparable data items exclusive to the 2003 revision (i.e. education, prenatal care, tobacco, type of vaginal and cesarean delivery) are no longer included in "Births: Final Data:"; see **Documentation Tables 2-4, 8 and 9** for tabular data for 2010. Additionally, although the checkbox items Risk factors in this pregnancy, Obstetric procedures, Characteristics of labor and delivery, Method of delivery, Abnormal conditions of the newborn, and Congenital anomalies of the newborn are included on both the 1989 and the 2003 U.S. Standard Certificates of Live Birth, many of the specific checkboxes under these items were modified, or are entirely new to the 2003 certificate. **Table E** lists 2003 revision-based items and indicates whether the item is considered comparable with a 1989 revision-based item. "Births: Final Data for 2010" presents information for specific checkboxes for which data *are* comparable across revisions [1]. See **Documentation tables 5 through 11** for tabular data for 2010 for 2003 revision-based information for selected specific checkbox items included under the checkbox categories listed above plus data on key items not comparable between revisions, i.e.: education, tobacco use, prenatal care, and type of vaginal and cesarean delivery. The report "Expanded Data from the

New Birth Certificate, 2008", presented these data for 2008 [21]. For 2009, this information can be found in **Documentation tables 2 through 11** of the 2009 User Guide [22]. Earlier reports presented data for the selected specific checkbox items for 2004 through 2006 [23-25]. For 2007, this information can be found in Tables R-1 to R-6 of the 2007 User Guide [26]. For 2003-2010 data based on the unrevised reporting area, see VitalStats, and the public use data files [2,3]. (The public-use files and VitalStats do not include data for non-comparable unrevised checkbox items for 2007 through 2010.)

Table B presents a listing of items and the percentage of records that were not stated for each state and the District of Columbia, plus Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Northern Marianas. Births to residents of revised states which occur in unrevised states are classified as unknowns for non-comparable items (such as educational attainment, tobacco use, and prenatal care). Births to residents of non-revised states are similarly classified.

The 2003 revision also includes a number of items which are new *and* exclusive to the 2003 revised certificate (e.g., Use of infertility therapies, Source of payment for the delivery, Maternal morbidity, Breastfeeding and the Receipt of WIC food for the pregnancy) (**Figure 1)**; these data are not currently available in tabulations or the public use files. Upcoming reports/data releases will disseminate these data for 2009 and 2010.

Natality data files

Micro-data files -- Natality micro-data files for data years 1968-2010 may be downloaded at: http://www.cdc.gov/nchs/data_access/VitalStatsOnline.htm. Natality micro-data files for data years 1968-2010 are also available on CD-ROM upon request. The general rules used to classify characteristics of live births are presented in several NCHS manuals [15,16,19,27]. These instructions are for states to use to collect and code the data items; they do not include NCHS edit recodes.

The 2003-2010 edits and natality micro-data files include data items common to both the 1989 and 2003 revisions of the U.S. Standard Certificate of Live Birth. The files also include items exclusive to the 2003 revision and key items exclusive to the 1989 revision. Beginning with the 2007 public-use file, most non-comparable items exclusive to the 1989 revision are no longer included but are available upon request. Education, tobacco use, prenatal care and type of

cesarean or vaginal delivery are included in the public-use file. Data items considered comparable between revisions are combined in the same data field(s); items which are not comparable, or are exclusive to either revision, are captured in separate fields. See file layout in this User Guide [2]. Certain data items new to the 2003 revised certificate (e.g., maternal morbidity) are not available on the file, but will be available in an upcoming file release. See **Figure 1** for information on items included in the file. For a listing of specific data items included in the 2010 natality public use file and the comparability of each item between revisions see **Table E**.

Beginning with the 2005 data year, the public release micro-data natality file no longer includes geographic detail (e.g., state or county of birth). Information on the new data use policy is available at: http://www.cdc.gov/nchs/nvss/dvs_data_release.htm [4]. However, tabulations of birth data by state and for counties with populations of 100,000 or more may be made using the interactive data tool VitalStats, described below.

Reporting flags -- The 2010 public use micro-data file includes extensive reporting flags to assist in the accurate exclusion of records for items not reported by all states when tabulating data by mother's place of residence. Reporting flags should be used to generate accurate numbers by residence for items which are not reported by all states. More information on the use of reporting flags can be found in the introduction to the 2010 file documentation in this User Guide [2]. Identification of individual state level data, however, is not possible with the public-use micro-data file for 2010 [4].

VitalStats -- VitalStats is an online data access tool which gives users access to a collection of interactive pre-built tables, and the ability to build their own tables choosing from over 100 public use birth variables for natality data files for 1990-2010 [3]. Interactive charting and mapping tools are a key part of the system, and provide powerful options for visualizing and manipulating tabulated data at the national, state, and county level (for counties of 100,000 population or more. Additionally, users can export tabulated data to Excel for further analysis. VitalStats is available at: http://www.cdc.gov/nchs/VitalStats.htm. Data for territories (American Samoa, Guam, Northern Marianas Islands, Puerto Rico, U.S. Virgin Islands) are available for 2005 to 2010.

Demographic Characteristics

Hispanic origin and race

Hispanic origin -- Hispanic origin and race are reported separately on the birth certificate. Data for Hispanic subgroups are shown in most cases for five specific groups: Mexican, Puerto Rican, Cuban, Central and South American, and "other and unknown Hispanic." In tabulations of birth data by race and Hispanic origin, data for persons of Hispanic origin are not further classified by race because the vast majority of births to Hispanic women are reported as white. In tabulations of birth data by race only, data for persons of Hispanic origin are included in the data for each race group according to the mother's reported race. In tabulations that include Hispanic origin, data for non-Hispanic persons are classified according to the race of the mother because there are substantial differences in fertility and maternal and infant health between Hispanic and non-Hispanic white women. A recode variable is available that provides cross tabulations of race by Hispanic origin.

Items asking for the Hispanic origin of the mother and the father have been included on the birth certificates of all states and the District of Columbia, the Virgin Islands, and Guam since 1993, and on the birth certificate of Puerto Rico starting in 2005 and Northern Marianas starting in 2010 [1]. American Samoa does not collect this information.

The Hispanic origin question on the 2003 revision of the birth certificate asks respondents to select only one response (**Figure 1**). Occasionally, however, more than one Hispanic origin response is given, that is, a specified Hispanic group (Mexican, Puerto Rican, Cuban, or Central and South American) in combination with one or more other specified Hispanic group(s). When this occurs, all responses are collected. These procedures have been in place since the first revision year, 2003. In 2010, 0.1 percent of births in the revised state reporting area, Minnesota, and Rhode Island (unrevised states which also reported more than one Hispanic origin response) were to women reporting more than one Hispanic origin. Respondents who select more than one Hispanic origin on the birth certificate are classified as "other and unknown Hispanic." The Hispanic origin question on the 1989 revision of the birth certificate also offers the opportunity to report more than one origin; however NCHS processing guidelines for unrevised data allow only for coding the first Hispanic origin listed.

As noted above, women who report more than one Hispanic origin on the revised birth certificate are included in the category "other and unknown Hispanic". The Current Population Survey [28], however, on which the denominators are based, queries respondents who report

more than one Hispanic origin to get to a single origin only, i.e., they do not have a "multiple" Hispanic category [29]. As a result, the population-based rates shown in "Births: Final Data for 2010" [1] for "other" Hispanic women are slightly higher (about 2 percent) than if births to women reporting more than one Hispanic origin were excluded from this category.

Change in Births to Other and Unknown Hispanic Women -- The number of births to "other and unknown" Hispanic women increased slightly from 120,477 in 2009, to 120,921 in 2010. This number had risen substantially each year from 2005 through 2009. Factors which may have influenced this rise are not clear, but may include less specificity in respondent reporting of Hispanic origin (e.g. "Hispanic" in lieu of "Mexican" or "Puerto Rican"), increases in the number of reporting areas providing multiple-Hispanic origin responses, and increases in the populations of groups included in the "other Hispanic" category. The percentage of records for which Hispanic origin of the parents was not reported in 2010 is shown by state in **Table B** of these Detailed Notes.

Single, Multiple and "Bridged" race of mother and father -- In 1997, the Office of Management and Budget (OMB) issued ''Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity'' which revised the ''1977 Statistical Policy Directive 15, Race and Ethnic Standards for Federal Statistics and Administrative Reporting'' [30-32]. These documents specify guidelines for the collection, tabulation, and presentation of race and ethnicity data within the Federal statistical system. The 1997 revised standards incorporated two major changes designed to reflect the changing racial profile of the United States. First, the revision increased from four to five the minimum set of categories to be used by federal agencies for identification of race. The 1977 standards required federal agencies to report race-specific tabulations using a minimum set of four single-race categories: American Indian or Alaska Native (AIAN), Asian or Pacific Islander (API), black, and white. The five categories for race specified in the 1997 standards are: American Indian or Alaska Native, Asian, black or African American, Native Hawaiian or Other Pacific Islander, and white. The revised standards called for reporting of Asians separately from Native Hawaiians or Other Pacific Islanders. Collection of additional detail on race and ethnicity is permitted, as before, so long as the additional categories can be aggregated into the minimum five categories. Second, the revised standards also require federal data collection programs to allow respondents to select *one or more race categories*.

For the 2010 and 2000 decennial censuses, the U.S. Census Bureau collected race and ethnicity data in accordance with the 1997 revised standards. However, the National Vital Statistics System, which is based on data collected by the states, will not be fully compliant with the new standards until all of the states revise their birth certificates to reflect the new standards. Thus, beginning with the 2000 data year, the numerators (births) for birth rates are incompatible with the denominators (populations) (see "Population denominators"). In order to compute rates, it is necessary to ''bridge'' population data for multiple-race persons to single-race categories. This has been done for birth rates by race presented in this report. Once all states revise their birth registration systems to be compliant with the 1997 OMB standards, the use of ''bridged'' populations can be discontinued.

In 2010, multiple race was reported by California, Colorado, Delaware, the District of Columbia, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana (for births occurring after November 30 2010), Maryland, Michigan, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York (including New York City), North Carolina (rolling), North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Washington, Wyoming, and Northern Marianas, which used the 2003 revision of the U.S. Standard Certificate of Live Birth, as well as Hawaii, Minnesota and Rhode Island , which used the 1989 revision of the U.S. Standard Certificate of Live Birth. These 38 states and the District of Columbia (not including Northern Marianas) accounted for 83 percent of U.S. births in 2010 and reported 2.1 percent of mothers as multiracial, with levels varying from less than 1 percent (Indiana, New Hampshire, and Texas) to 35 percent (Hawaii) (see **Table D**). Prior to 2010, the multiple-race reporting area varied, with 6 states reporting more than one race in 2003, 15 in 2004, 19 in 2005, 23 in 2006, 27 in 2007, 30 in 2008, and 33 and the District of Columbia in 2009. Data from the vital records of the remaining 12 states, American Samoa, Guam, and the U.S. Virgin Islands followed the 1977 OMB standards in which a single race is reported [30]. In addition, these areas also report the minimum set of four races as stipulated in the 1977 standards [30], compared with the minimum of five races for the 1997 [31] standards. Puerto Rico, which revised its birth certificate in 2005, reported race according to the 1989 revision of the U.S. Standard Certificate of Live Birth.

In order to provide uniformity and comparability of the data during the transition period, before multiple-race data are available for all reporting areas, it is necessary to "bridge" the

responses of those who reported more than one race to a single-race. The bridging procedure for multiple-race mothers and fathers is based on the procedure used to bridge the multiracial population estimates (see "Population denominators") [32,33]. Multiple-race is imputed to a single race (one of the following: AIAN, API, Black, or White) according to the combination of races, Hispanic origin, sex, and age indicated on the birth certificate of the mother or father. The imputation procedure is described in detail elsewhere [34,35].

As noted previously, the bridging procedure imputes multiple-race of mothers to one of the four minimum races stipulated in the 1977 OMB standards, that is, AIAN, API, Black, or White. Mothers of a specified API subgroup (that is, Chinese, Japanese, Hawaiian, or Filipino) in combination with another race (that is, AIAN, black, or white) or another API subgroup are not imputed to a single API subgroup. API mothers are slightly over represented in the 36 states and the District of Columbia with complete reporting of multiple-race for 2010 (which account for 83 percent of API births in the United States), compared with the remaining 12 unrevised states. For reports "Births: Final Data for 2003" through "Births: Final Data for 2010," data are not shown for the specified API subgroups because the bridging technique cannot be applied in this detail [1,32,36-42]. However, data for the API subgroups, reported alone or in combination with other races and/or API subgroups, are available in the 2003-2010 natality public-use micro-data files. A previous report [43] describes characteristics of births in 2003 to single and multiple-race women.

The 12 states not reporting multiple-race data, report race in at least eight single-race categories: white, black or African American, American Indian or Alaska Native, Chinese, Japanese, Hawaiian, Filipino, and "other Asian or Pacific Islander" (API). Of these states, three (New Jersey, Virginia, and West Virginia) report data on the expanded API subgroups included in the "other API category" (Asian Indian, Korean, Samoan, Vietnamese, Guamanian, and remaining API). Finally, the 38 states and the District of Columbia that report multiple-race data report a minimum of 14 categories (white, black or African American, American Indian or Alaska Native, Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, other Asian, Hawaiian, Guamanian, Samoan, and other Pacific Islander). Multiple-race data are not shown in the public-use file, but are available upon request.

Unknown race of mother -- Among states reporting race based on the 1977 OMB standard (single race) in 2010, race of mother was unknown or reported as "other" race (not

reported in a standard race category, see above) for 2.1 percent of all 2010 records. This percentage does not take into account records for which race was unknown and was assigned or imputed by the state in which the birth occurred *prior to transmission to NCHS*. Specifically, for the single-race reporting area (12 states) for mothers of Hispanic origin with unknown race, race of mother was imputed to 'white' prior to transmission to NCHS.

Among states reporting race based on the 1997 OMB standard (multiple-race) in 2010, race was unknown or reported as "other" (not reported in a standard category, see **Figure 1**) for 6.3 percent of all records. Race was *not* imputed by any of these states prior to NCHS transmission.

For both the single-race reporting areas and the multiple-race reporting areas where race of mother was unknown and the race of the father was known, the race of the father was assigned (at NCHS) to the mother. When information was not available for either parent, the race of the mother was imputed according to the specific race of the mother on the preceding record with a known race of mother. (See also discussion on imputation of race for Hispanic women below.) For the single-race reporting area, imputation of race of mother based on a previous record was necessary for 1.5 percent of records. For the areas reporting multiple-race of mother, 5.2 percent of records were imputed based on a previous record; of these 83 percent were for mothers of Hispanic origin. (See below for imputation procedures.)

Modification in Imputation of Race for Hispanic women -- Starting with the 2006 data year for the multiple-race reporting area, the race edit was modified slightly to take into account differences in the race distribution for births to Hispanic women compared with all births. For women of unknown race who report to be of Hispanic origin, race of mother is imputed according to the race of father, or, if race of father is unknown, according to the specific race of the mother on the preceding record of a Hispanic woman with a known race of mother. Previously, for Hispanic women where race of father was unknown, unknown race of mother was imputed according to the preceding record of any woman, regardless of Hispanic origin.

Between 2005 and 2006, the increase in the number of births to total white women may be slightly overstated and the increase in the number of births to total black women may be slightly understated because of the changes in the race edit procedure introduced in 2006 (data for *non-Hispanic white* and *non-Hispanic black women are not affected*). See 2006 User Guide for more detail [44].

Race of mother/race of child -- Beginning with the 1989 data year, NCHS started tabulating its birth data primarily by race of the mother. In 1988 and prior years, births were tabulated by the race of the child, which was determined from the race of the parents as entered on the birth certificate. The reasons for this change are summarized in the 1999 Technical Appendix [11]. Trend data by race of mother are shown in "Births: Final Data for 2010" [1] for all years beginning with the 1980 data year. Text references to white births and white mothers or black births and black mothers are used interchangeably for ease in writing.

Age of mother

Beginning with the 1989 U.S. Standard Certificate of Live Birth, a "Date of birth" item replaced the "Age (at time of this birth)" item. Not all states revised this item, and, therefore, the age of mother either is derived from the reported month and year of birth or coded as stated on the certificate. In 2010, age of mother was reported directly by one state (Virginia) and American Samoa.

From 1964 to 1996, mother's age was edited for ages 10-49 years. Births reported as occurring to mothers under age 10 or over age 49 were assigned the mean age of mothers based on data from a previous year with the same race, Hispanic origin, and total birth order (total of live births and fetal deaths). Beginning in 1997, age of mother is imputed for ages 9 years or under and 55 years and over. This procedure was used through 2006 for births in states using the 1989 Revision of the U.S. Standard Certificate of Live birth (unrevised). Beginning in 2003 for births occurring in states using the 2003 revision of the birth certificate (revised), a slightly wider age range is used; age of mother is imputed for ages 8 years or under and 65 years and over (mother's age 9 years is recoded as 10 years and ages 55-64 years are recoded to an age from 50-54 years). Starting in 2007, the same procedures are used for states using the unrevised certificate. A review and verification of unedited data for several years including 2007 showed that the vast majority of births reported as occurring to women aged 50 years and older were to women aged 50-54 years. The numbers of births to women aged 50-54 years have been too small historically to compute age-specific birth rates. These births have been included with births to women aged 45-49 years for computing birth rates.

Data for single year of age of mother 9-11 and 55-64 years are not shown in the public use data files. Births to mothers 9-11 years are collapsed into the categories "12 years or under;"

births to mothers 50-64 years into the category "50-54 years."

Age–specific birth rates are based on populations of women by age, prepared by the U.S. Census Bureau. In census years the decennial census counts are used. In intercensal years, estimates of the population of women by age are published by the U.S. Census Bureau in *Current Population Reports*. The 2010 Census of Population derived age in completed years as of April 1, 2010, from responses to questions on age at last birthday and month and year of birth, with the latter given preference. In the 1960, 1970, 1980, 1990, and 2000 Census of Population, age was also derived from month and year of birth. Age in completed years was asked in censuses before 1960. This was nearly the equivalent of the question of the pre-1989 birth certificates, which the 1950 test of matched birth and census records confirmed, by showing a high degree of consistency in reporting age in these two sources [14]. More recently, reporting of maternal age on the birth certificate was compared with reporting of age in a survey of women who had recently given birth. Reporting of age was very consistent between the two sources [45].

Median and mean age of mother -- Median age is the value that divides an age distribution into two equal parts, one-half of the values being less and one-half being greater. Median ages of mothers for 1960 to the present have been computed from birth rates for 5–year age groups rather than from birth frequencies. This method eliminates the effects of changes in the age composition of the childbearing population over time. Changes in the median ages from year to year can thus be attributed solely to changes in the age–specific birth rates. Trend data on the median age are shown in **Table 1-5** of "Vital Statistics of the United States, 2003, Volume 1, Natality" [46], which is available at: http://www.cdc.gov/nchs/products/vsus.htm#natab2003.

Trend data on the mean age of mother, derived directly from frequencies of births by age, are available at: http://www.cdc.gov/nchs/products/vsus.htm#natab2003, and for recent years, in **Table I-1**,available at http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_01_tables.pdf.

Not stated age or date of birth of mother -- In 2010, age of mother was not reported on 0.01 percent of the records. Beginning in 1964, birth records with date of birth of mother and/or age of mother not stated have had age imputed according to the age of mother from the previous birth record of the same race and total-birth order (total of fetal deaths and live births). (See *NCHS Instruction Manuals*, Part 12) [47,48].

Age of father

Age of father is derived from the reported date of birth or coded as stated on the birth certificate. If the age is under 10 years, it is considered not stated and grouped with those cases for which age is not stated on the certificate. Information on age of father is often missing on birth certificates of children born to unmarried mothers, greatly inflating the number in the "Not stated" category in all tabulations by age of father. In computing birth rates by age of father, births tabulated as age of father not stated are distributed in the same proportions as births with known age within each 5–year-age classification of the mother. This procedure is followed because, while father's age is missing on 13.8 percent of all births in 2010, age of father is missing for almost one-quarter (22.2%) of births to teenaged (aged 15-19 years) mothers. This distribution procedure is done separately by race. The resulting distributions are summed to form a composite frequency distribution that is the basis for computing birth rates by age of father. This procedure avoids the distortion in rates that would result if the relationship between age of mother and age of father were disregarded. Births with age of father not stated are distributed only for rates, not for frequency tabulations.

Live-birth order and parity

Live-birth order and parity classifications refer to the total number of live births the mother has had including the 2010 birth. Fetal deaths are excluded.

Live-birth order indicates what number the present birth represents; for example, a baby born to a mother who has had two previous live births (even if one or both are not now living) has a live-birth order of three. Parity indicates how many live births a mother has had. Before delivery, a mother having her first baby has a parity of zero, and a mother having her third baby has a parity of two. After delivery the mother of a baby who is a first live birth has a parity of one, and the mother of a baby who is a third live birth has a parity of three.

Live-birth order and parity are determined from two items on the birth certificate, "Live births now living" and "Live births now dead." Editing procedures for live birth order are summarized elsewhere [47,48].

Not stated birth order -- All births tabulated in the "Not stated birth order" category are excluded from the computation of percentages. In computing birth rates by live-birth order,

births tabulated as birth order not stated are distributed in the same proportion as births of known live-birth order.

Marital status

National estimates of births to unmarried women are based on two methods of determining marital status. For 1994 through 1996, birth certificates in 45 states and the District of Columbia included a question about the mother's marital status. For the other states, marital status is inferred from information on the birth certificate. Beginning in 1997, the marital status of women giving birth in California and Nevada was determined by a direct question in the birth registration process. New York City also changed its procedures for inferring marital status in 1997 to the same procedures in effect in New York State, a separate registration area. Beginning June 15, 1998, Connecticut discontinued inferring the mother's marital status and added a direct question on mother's marital status to the state's birth certificate. Michigan added a direct question in 2005 to the birth registration process, but used inferential procedures to update information collected using the direct question. Beginning in 2007, Michigan added a direct question on mother's marital status to the state's birth certificate.

In 2010, inferential procedures were used to compile birth statistics by marital status in full or in part for New York. In New York, a birth is inferred as nonmarital if either of these factors, listed in priority-of-use order, is present: a paternity acknowledgment was received or the father's name is missing. In recent years, a number of states have extended their efforts to identify the fathers when the parents are not married in order to enforce child support obligations. The presence of a paternity acknowledgment, therefore, is the most reliable indicator that the birth is nonmarital in the states not reporting this information directly; this is now the key indicator in the nonreporting states. Details of the changes in reporting procedures and the impact of the procedures on the data are described in previous reports [49,50].

The mother's marital status was not reported in 2010 on 0.06 percent of the birth records in the 49 states and the District of Columbia where this information is obtained exclusively by a direct question. Marital status was imputed for these records. If status was unknown and the father's age was known, then the mother was considered married. If the status was unknown, and the father's age unknown, then the mother was considered unmarried. This represents a change from the procedures in effect for 2002 and previous years. Prior to 2003, marital status

for all records with marital status not reported was imputed as "married." Because of the small number of records affected (2,179 or 0.05 percent of all births in 2010), the change in imputation procedures had essentially no impact on measures of nonmarital births.

When births to unmarried women are reported as second or higher order births, it is not known whether the mother was married or unmarried when the previous deliveries occurred because her marital status at the time of these earlier births is not available from the current birth record.

Educational attainment

Information on educational attainment is reported on both the 2003 and 1989 U.S. Standard Certificates of Live Birth. However, the format of the education item on the 2003 revised standard certificate differs substantively from that of the 1989 unrevised standard certificate. The 1989 certificate asks for the number of years of school completed by the mother (additional information on the unrevised 1989 education question is found in the 1999 Technical Appendix [11]). In contrast, the revised 2003 certificate item asks for the highest degree or level of school completed at the time of the birth (e.g., high school diploma, some college credit but no degree, bachelor's degree, etc.).

Education data for the states that have implemented the revised 2003 certificate are not directly comparable with data for the states that are not yet using the revised certificate. Accordingly, revised and unrevised educational attainment data are not combined for tabulations in the natality data files. Revised data on education are not included in "Births: Final Data for 2010" [1]. These data are shown in **Documentation Table 2**. Revised/unrevised data on education are presented in previous reports [21,37-40]. For 2003-2010 data based on the unrevised reporting area, see VitalStats, and the public use data files [2,3].

Data on educational attainment are currently available only for the mother. Beginning in 1995, NCHS discontinued collecting information on the educational attainment of the father. Data on the father's educational attainment will be available for 2009 and 2010 in upcoming data releases.

Maternal and Infant Health Characteristics

Weight gain during pregnancy

Information on weight gain during pregnancy is available from both the 2003 and the 1989 U.S. Standard Certificate of Live Birth. The item was modified, however, between revisions. The 1989 certificate asks for "weight gained during pregnancy ____ lbs," whereas the revised 2003 item asks for the mother's pre-pregnancy weight and weight at delivery from which total weight gain during pregnancy is derived. Information on weight gain is considered comparable between revisions and, accordingly, data are combined for tabulations and in the natality data files.

Weight gain during pregnancy is reported in pounds. A reported loss of weight is recorded as zero gain. See NCHS manuals for detailed descriptions of editing and computation of the weight gain item [47,48]. See **Table I-5** for 2010 data.

Tobacco use during pregnancy

Information on smoking during pregnancy is reported on both the 1989 and the 2003 U.S. Standard Certificates of Live Birth. The item was substantively modified for the 2003 certificate, however, and data based on the revised item are not comparable with those based on the unrevised 1989 item. The revised 2003 question asks for the number of cigarettes smoked at different intervals before and during the pregnancy. If the mother reports smoking in any of the three trimesters of pregnancy she is classified as a smoker. In comparison, the unrevised 1989 item asks a "yes/no" question on tobacco use during pregnancy and the average number of cigarettes per day with no specificity on timing during the pregnancy.

Data based on the 2003 revised item are available for all of 2010 for 30 states, the District of Columbia, Puerto Rico, and the Northern Marianas. The 30 states are California, Colorado, Delaware Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Washington, and Wyoming. The tobacco use item for Florida, which implemented the revised birth certificate as of January 1, 2004, and for Michigan, which had fully implemented the revised certificate as of January 1, 2008, do not follow the standard format. As a result, tobacco use data for Florida and Michigan are not comparable with either the 2003 revised or 1989 unrevised data (see below) and are not included in the 2010 data files [51]. Reliable data on tobacco use were not available for Georgia for 2010.

Revised data on tobacco are not included in "Births: Final Data for 2010" [1]. These data are shown in **Documentation Table 3**. Revised/unrevised data on tobacco use are presented in previous reports [21,37-40]. For 2003-2010 data based on the unrevised reporting area, see VitalStats, and the public use data files [2,3].

Pregnancy risk factors

Both the 2003 and 1989 standard birth certificates collect pregnancy risk information in a checkbox format. Ten risk factors are separately identified on the revised 2003 certificate (**Figure 1)**. Four of these risk factors; diabetes, pre-pregnancy hypertension, gestational hypertension, and eclampsia are comparable across revisions, see **Table E**. Data for 2010 on comparable risk factors are shown in **Table I-6**, available at http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_01_tables.pdf. Selected risk factors new to the revised certificate were presented in a report based on 2008 data [21]; tabular data for 2010 are included in **Documentation Table 5.**

Both the revised and unrevised formats allow for the reporting of more than one risk factor and include a choice of "None" (or "None of the above" in the case of the revised certificate). Accordingly, if the item is not completed, it is classified as not stated. Levels of reporting completeness by state for pregnancy risk factors are shown in **Table B.**

For detailed instructions and definitions for the pregnancy risk factors included on the revised 2003 certificate see: *Guide to Completing the Facility Worksheets for the Certificate of Live Birth and Report of Fetal Death (2003 Revision)* [20]. Definitions for the 1989 certificate items are also available [36].

Diabetes during pregnancy – The 2003 revision splits reporting of diabetes during pregnancy into prepregnancy (diagnosed prior to this pregnancy) and gestational (diagnosed in this pregnancy) diabetes. In comparison, the 1989 certificate captures information on maternal diabetes as a single item only. This change, along with more general enhancements to the collection of data under the 2003 revision, appears to have improved reporting of diabetes during pregnancy in states adopting the 2003 certificate. Improved reporting of this item as states implemented the 2003 revised birth certificate contributed to the national increase between 2003 and 2010 (see **Tables 18 and 19 of** "Births: Final Data for 2010" and **Table I-6** for 2010 rates [1]) [36]; diabetes rates rose by more than 1/3, on average, as states implemented the 2003

certificate revision, compared with less than 7 percent annual increases for unrevised states and for revised states that had used the revised certificate for two or more years. This rise in diabetes may also be the result of increased attention paid to diabetes by the medical community as well as an actual increase in the occurrence of diabetes.

Prenatal care

Information on the timing of prenatal care is available for both the 2003 revised and 1989 unrevised Certificates of Live Birth. However, the 2003 revision introduced substantive changes in item wording and also to the sources of prenatal information. The wording of the prenatal care item was modified to "Date of first prenatal visit" from "Month prenatal care began." In addition, the 2003 revision process resulted in recommendations that the prenatal care information be gathered from the prenatal care or medical records, whereas the 1989 revision did not include a recommended source for these data. Accordingly, prenatal care data for the two revisions are not directly comparable and are shown separately in tabulations and in the data file.

Tabulated prenatal care data for the 2010 revised reporting area on prenatal care are included in **Documentation Table 4**. Revised and/or unrevised data on prenatal care are presented in previous reports [21,37-40]. For 2003-2010 data based on the unrevised reporting area, see VitalStats, and the public use data files [2,3].

Levels of utilization of prenatal care based on revised data are substantially lower than those based on unrevised data. For the first year revised certificates are implemented, the percentage of women reported to begin care in the first trimester typically falls in a state by at least 10 percentage points [1]. For example, unrevised 2007 data for Montana indicated that 84.0 percent of residents began care in the first trimester of pregnancy. This compares with a level of 73.4 percent for 2008 based on Montana revised data. Much, if not all of the difference between 2007 and 2008 for Montana and other revised states, is related to changes in reporting and not to changes in prenatal care utilization.

Obstetric procedures

Both the 2003 and the 1989 Standard Certificates of Live Birth collect information on obstetric procedures in a checkbox format (**Figures 1**). Three procedures are separately identified on the revised 2003 certificate: cervical cerclage, tocolysis, and external cephalic

version (successful or failed). Two procedures, induction of labor (captured under the "Characteristics of labor and delivery" section of the revised 2003 certificate) and tocolysis are comparable across revisions [1], see **Table E**. Data for 2010 on comparable obstetric procedures are shown in **Table I-6**, available at http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_01_tables.pdf. Obstetric procedures new to the revised certificate were presented in a report based on 2008 data [21]. For 2010, tabular data are included in **Documentation Table 6.**

Both the revised and unrevised certificate formats allow for the reporting of more than one procedure and include a choice of "None" (or "None of the above" in the case of the revised certificate). Accordingly, if the item is not completed, it is classified as "not stated." Reporting completeness for obstetric procedures by state is shown in **Table B.**

Detailed instructions and definitions for the obstetric procedures based on the revised 2003 certificate are presented in the *Guide to Completing the Facility Worksheets for the Certificate of Live Birth and Report of Fetal Death (2003 Revision)* [20]. Definitions for the 1989 certificate items are also available [36].

Characteristics of labor and delivery

Both the 2003 and the 1989 standard birth certificates collect characteristics of labor and delivery in a checkbox format (**Figures 1**). The 2003 Standard Certificate of Live Birth includes nine specific characteristics of labor and delivery. Three of these characteristics, Meconium, Breech/malpresentation (collected under the "Method of delivery" item on the 2003 Certificate), and Precipitous labor (collected under "Onset of labor" on the 2003 certificate) are comparable across revisions [1], see **Table E**. Data for 2010 on comparable characteristics of labor and delivery are shown in **Table I-6**, available at http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_01_tables.pdf. Characteristics of labor and delivery new to the revised certificate were presented in a report based on 2008 data [21]. For 2010, these data are shown in **Documentation Table 7**.

Both the revised and unrevised certificate formats allow for the reporting of more than one characteristic and include a choice of "None" (or "None of the above" in the case of the revised certificate). If the item is not completed, it is classified as "not stated." The percent of records for which characteristics of labor and delivery items were not stated is shown in **Table**

B.

The 1989 revision of the U.S. Standard Certificate of live birth (unrevised) provides a single checkbox for "Breech/Malpresentation" under Complications of Labor and Delivery. On the 2003 revision of the birth certificate (revised), this information is collected as two separate checkboxes: "Breech" and "Other" in the Fetal Presentation subsection of Method and Delivery. Although by definition, the revised "Breech" and "Other" items combined are comparable to the unrevised item, levels for revised states tend to be higher in general than those for non-revised states. As a result, increases in the national "Breech/Malpresentation" rates observed since 2003 (the first year states began implementing the revised birth certificates) is likely largely a reporting artifact; trends in Breech/Malpresentation rates and comparisons of rates among revised and unrevised States should be viewed with caution.

The 2003 U.S. Standard Certificate of Live Birth includes the checkbox "non-vertex presentation" under the category Characteristics of Labor and Delivery. Non-vertex presentation is defined as any presentation other than vertex (i.e., any presentation other than the upper or back part of the baby's head) [20]. Also included on the 2003 certificate under the category "Method of Delivery—Final presentation at birth," are the checkboxes "breech" and "other" (noncephalic) presentation. Although "breech" and "other" presentations in the Method of Delivery category are subsets of "non-vertex presentation," the combined level of "breech" and "other" presentations was higher than that for "non-vertex presentation" in Characteristics of Labor and Delivery for 2010 (6.0 percent compared with 1.4 percent, respectively). Furthermore, 68.8 percent of breech and 93.5 percent of other presentations were not classified as nonvertex, suggesting that non-vertex presentation may be underreported.

Detailed instructions and definitions for the characteristics of labor and delivery collected on the revised 2003 certificate are presented in the *Guide to Completing the Facility Worksheets for the Certificate of Live Birth and Report of Fetal Death (2003 Revision)* [20]. Definitions for the 1989 certificate items are also available [36].

Place of delivery and attendant at birth

Both the 1989 and 2003 revisions of the U.S. Standard Certificate of Live Birth include separate categories for hospitals, freestanding birthing centers, residence, and clinic or doctor's office as the place of birth. In addition, the 2003 certificate queries whether the home birth was

planned to be a home delivery.

For both the revised and unrevised certificates, the four professional categories of attendants are medical doctors, doctors of osteopathy, certified nurse midwives, and other midwives. There is evidence that the number of live births attended by certified nurse midwives [CNM] is understated [52], largely due to difficulty in correctly identifying the birth attendant when more than one provider is present at the birth. (Anecdotal evidence suggests that some hospitals require that a physician be reported as the attendant even where no physician is physically present at midwife-attended births.) Additional information on births occurring outside of hospitals, and on birth attendants, can be found in "Technical appendix. Vital statistics of the United States: 1999, vol I, natality [11].

Method of delivery

Several rates are computed for "Method of delivery." The overall cesarean delivery rate or total cesarean rate is computed as the percent of all births delivered by cesarean. The primary cesarean rate relates the number of women having a first cesarean delivery to all women giving birth who have never had a cesarean delivery. The denominator for the primary cesarean rate includes the sum of primary cesareans and vaginal births without previous cesarean. The rate of vaginal birth after previous cesarean (VBAC) delivery is computed by relating all VBAC deliveries to the sum of VBAC and repeat cesarean deliveries, that is, to women with a previous cesarean delivery.

Information on method of delivery is reported on both the 2003 and 1989 Standard Certificates of Live Birth. However, the format and wording of the method of delivery item on the revised certificate differs from that of the unrevised certificate. The unrevised item asks a direct question on whether the birth was vaginal, VBAC or a primary or repeat cesarean delivery. In contrast, the revised method of delivery item asks if the final route of delivery was a vaginal (with or without forceps or vacuum assistance) or a cesarean delivery. Information on the type of vaginal (vaginal or VBAC) or type of cesarean delivery (primary or repeat) is calculated from the response to a question under a different item, "Risk factors in this pregnancy" which asks if the mother had a previous cesarean delivery.

As a result of these changes, although data on total cesarean deliveries appear to be very comparable between revisions, information on type of vaginal or cesarean delivery is not. Rates

based on data from the revised certificates are substantially higher for VBACs and primary cesareans, and lower for repeat cesareans, than rates based on data from unrevised certificates [53]. Accordingly, data on VBAC, primary, and repeat cesarean deliveries are not directly comparable between revisions, and beginning with the 2005 data year, are presented separately in tabulations [1] and in the data file.

Information on forceps and vacuum delivery is also available from both the 2003 revised and 1989 unrevised birth certificates; these data appear to be comparable between revisions. The 2003 revision item was also expanded to include questions on whether attempted forceps or vacuum deliveries were successful, and whether a trial of labor was attempted prior to cesarean delivery. Method of delivery items new to the revised certificate were presented in a report based on 2008 data [21]. For 2010, these data are shown in **Documentation Tables 8 and 9**.

Gestational age

The primary measure used to determine the gestational age of the newborn is the interval between the first day of the mother's last normal menstrual period (LMP) and the date of birth. The LMP is used as the initial date because it can be more accurately determined than the date of conception, which usually occurs 2 weeks after the LMP. LMP measurement is subject to error for several reasons, including imperfect maternal recall or misidentification of the LMP because of post-conception bleeding, delayed ovulation, or intervening early miscarriage.

Births occurring before 37 completed weeks of gestation are considered to be preterm for purposes of classification. At 37–41 weeks gestation, births are considered to be term, and at 42 completed weeks and over, post-term. These distinctions are consistent with the ICD–9 and ICD–10 [8] definitions. NCHS further categorizes births at less than 34 weeks as early preterm and births at 34-36 weeks as late preterm. Beginning with "Births: Final data for 2008" [1], NCHS has also begun differentiating between early term (37-38 weeks) and full term (39-41 weeks).

Before 1981, the period of gestation was computed only when there was a valid month, day, and year of LMP. However, length of gestation could not be determined for a substantial number of live-birth certificates each year because the day of LMP was missing. Beginning in 1981, weeks of gestation have been imputed for records with missing day of LMP when there is a valid month and year. The imputation procedure and its effect on the data are described

elsewhere [11,54]. Reporting problems for this item persist and may occur more frequently among some subpopulations, such as selected maternal race groups, and among births with shorter gestations [47,55,56].

The 1989 revision of the U.S. Standard Certificate of Live Birth includes an additional measure of gestational age, the item "Clinical estimate of gestation." The comparable item on the 2003 revision of the birth certificate is the "Obstetric estimate of gestation" – see definitions [20]. The clinical or obstetric estimate is compared with the length of gestation computed from the LMP date when the latter appears to be inconsistent with birthweight. This is done for normal weight births of apparently short gestations and very low birthweight births reported to be full term. The procedures are described in NCHS instruction manuals [48,49].

The period of gestation for 6.0 percent of the births in 2010 was based on the clinical or obstetric estimate of gestation. For 98 percent of these records, the clinical or obstetric estimate was used because the LMP date was not reported. For the remaining 2 percent, the clinical or obstetric estimate was used because it was compatible with the reported birthweight, whereas the LMP-based gestation was not. In cases where the reported birthweight was inconsistent with both the LMP-computed gestation and the clinical/obstetric estimate of gestation, the LMP-computed gestation was used and birthweight was reclassified as "not stated." This was necessary for 277 births or 0.01 percent of all birth records in 2010. The levels of the adjustments were similar to those for earlier years. Despite these edits, substantial incongruities in these data persist.

Birthweight

Birthweight is reported in some areas in pounds and ounces rather than in grams. However, the metric system is used to tabulate and present the statistics to facilitate comparison with data published by other groups. The categories for birthweight are consistent with the recommendations in the *International Classification of Diseases, Ninth Revision* (ICD–9) and the *International Classification of Diseases, Tenth Revision* (ICD–10) [8]. The categories in gram intervals and their equivalents in pounds and ounces are as follows:

Less than 500 grams = 1 lb 1 oz or less
500–999 grams = 1 lb 2 oz–2 lb 3 oz
1,000–1,499 grams = 2 lb 4 oz–3 lb 4 oz

1,500–1,999 grams = 3 lb 5 oz–4 lb 6 oz
2,000–2,499 grams = 4 lb 7 oz–5 lb 8 oz
2,500–2,999 grams = 5 lb 9 oz–6 lb 9 oz
3,000–3,499 grams = 6 lb 10 oz–7 lb 11 oz
3,500–3,999 grams = 7 lb 12 oz–8 lb 13 oz
4,000–4,499 grams = 8 lb l4 oz–9 lb l4 oz
4,500–4,999 grams = 9 lb 15 oz–11 lb 0 oz
5,000 grams or more = 11 lb l oz or more

ICD–9 and ICD–10 define low birthweight as less than 2,500 grams. This is a shift of 1 gram from the previous criterion of 2,500 grams or less, which was recommended by the American Academy of Pediatrics in 1935 and adopted in 1948 by the World Health Organization in the *International Lists of Diseases and Causes of Death, Sixth Revision* [57]. Very low birthweight is defined as less than 1,500 grams.

To establish the continuity of class intervals needed to convert pounds and ounces to grams, the end points of these intervals are assumed to be half an ounce less at the lower end and half an ounce more at the upper end. For example, 2 lb 4 oz–3 lb 4 oz is interpreted as 2 lb 3 ½ oz–3 lb 4 ½ oz. Births for which birthweights are not reported are excluded from the computation of percentages.

Apgar score

The Apgar score is a measure of the need for resuscitation and a predictor of the infant's chances of surviving the first year of life. It is a summary measure of the infant's condition based on heart rate, respiratory effort, muscle tone, reflex irritability, and color. Each of these factors is given a score of 0, 1, or 2; the sum of these 5 values is the Apgar score, which ranges from 0 to 10. A score of 0 to 3 indicates an infant in need of resuscitation; a score of 4 to 6 is considered intermediate; a score of 7 or greater indicates that the neonate is in good to excellent physical condition.

The 1– and 5–minute Apgar scores were added to the U.S. Standard Certificate of Live Birth in 1978 to evaluate the condition of the newborn infant at 1 and 5 minutes after birth. In 1995, NCHS discontinued collecting data on the 1-minute score. The 2003 revised certificate includes the five minute score and also asks for a 10 minute score if the 5 minute score is less than 6. The 2010 natality file includes information on the 5 minute score only. Tabular 2010 data for the 5-minute Apgar score are shown in **Tables 18 and 19** in “Births: Final data for

2010" [1].

Plurality

Plurality is classified as single, twin, triplet, quadruplet, and quintuplet and higher order births. Each record in the natality file represents an individual birth. For example, a record coded as a twin represents one birth in a twin delivery. Pairs or sets of twins or higher order multiple births are not identified in this file. The Matched Multiple Birth File 1995-2000 [58] includes information on sets of twin, triplet and quadruplets, thus allowing for the analysis of maternal and infant characteristics of sets of births and fetal deaths in multiple deliveries.

Records for which plurality is unknown are imputed as singletons. This occurred for 0.006 percent of all records for 2010.

Abnormal conditions of the newborn

Both the 2003 and 1989 standard birth certificates collect abnormal conditions of the newborn in a checkbox format (**Figures 1**). There are seven specific abnormal conditions included on the 2003 revised birth certificate. None of the specific abnormal conditions of the newborn is comparable across the 1989 and 2003 revisions, see **Table E**. Abnormal conditions new to the revised certificate were presented in a report based on 2008 data [21]. For 2010, these data are shown in **Documentation Table 10**.

More than one abnormal condition may be reported for a given birth. "None" or "None of the above" (in the case of the revised certificate) may also be selected. Accordingly, if the item is not completed, it is tabulated as "not stated."

Detailed instructions and definitions for the abnormal conditions of the newborn collected on the revised 2003 certificate are presented in the *Guide to Completing the Facility Worksheets for the Certificate of Live Birth and Report of Fetal Death (2003 Revision)* [20]. Definitions for the 1989 certificate items are also available [36].

Congenital anomalies of the newborn

Both the 2003 and 1989 standard birth certificates collect congenital anomalies of the newborn in a checkbox format (**Figures 1**). Twelve specific anomalies or anomaly groups are collected on the 2003 revised birth certificate. Six of these anomalies or anomaly groups;

Anencephaly, Meningolmyelocele/Spinda Bifida, Congenital diaphragmatic hernia, Omphalocele/Gastroschisis, Cleft lip with or without Cleft palate, and Down syndrome are comparable across revisions, see **Table E**. Data for 2010 on comparable congenital anomalies are shown in **Table I-6**, available at http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_01_tables.pdf. Congenital anomalies new to the revised certificate were presented in a report based on 2008 data [21]. For 2010, these data are shown in **Documentation Table 11**.

Both the revised and unrevised formats allow for the identification of more than one anomaly and include a choice of "None" (or "None of the above"). Accordingly, if the item is not completed, it is classified as "not stated."

It is well documented that congenital anomalies, except for the most visible and most severe, have historically been under-reported on birth certificates [59]. This has been attributable, at least in part, to the inclusion of anomalies on the 1989 U.S. Standard Certificate of Live Birth which may be difficult to detect within the short period between birth and completion of the child's birth certificate. The 2003 revision of the US Standard Certificate attempted to improve reporting of congenital anomalies by including only those diagnosable within 24 hours of birth using conventional, widely available diagnostic techniques [17,24].

Data for the congenital anomaly ''Hypospadias,'' are edited to exclude this condition where the infant is a female.

Detailed instructions and definitions for the congenital anomalies of the newborn collected on the revised 2003 certificate are presented in the *Guide to Completing the Facility Worksheets for the Certificate of Live Birth and Report of Fetal Death (2003 Revision)* [20]. Definitions for the 1989 certificate items are also available [36].

Definitions of medical terms

For definitions and discussion of the maternal and infant health characteristics, see "Guide to Completing the Facility Worksheets for the Certificate of Live Birth and Report of Fetal Death" [20].

Quality of Data

Although vital statistics data are useful for a variety of administrative and scientific

purposes, they cannot be correctly interpreted unless various qualifying factors and methods of classification are taken into account. The factors to be considered depend on the specific purposes for which the data are to be used. It is not feasible to discuss all the pertinent factors in the use of vital statistics tabulations, but some of the more important ones should be mentioned.

Most of the factors limiting the use of data arise from imperfections in the original records or from the impracticability of tabulating these data in very detailed categories. These limitations should not be ignored, but their existence does not lessen the value of the data for most general purposes.

Completeness of registration — It is estimated that more than 99 percent of all births occurring in the United States in 2010 were registered. This estimate is based on the results of a national 1964–68 test of birth-registration completeness according to place of delivery (in or out of hospital) and race (white and non-white) [60]. This test has not been conducted more recently.

Completeness of reporting — Interpretation of birth certificate data must include evaluation of item completeness. The "Not stated" percentage is one measure of the quality of the data. Completeness of reporting varies among items and states. See **Table B** for the percentage of birth records on which specified items were not stated. In this table, there are items comparable to the two revisions, items not comparable between the 2003 and 1989 revision, and items exclusive to the 2003 revision. Items exclusive to the 1989 revision are no longer included in the public-use file but are available by special request.

Data users should note that levels of incomplete or inaccurate reporting for some of the items are quite high in some states. See **Table B**.

Quality control procedures — As electronic files are received at NCHS, they are automatically checked for completeness, individual item code validity, and unacceptable inconsistencies between data items. The registration area is notified of any problems. In addition, NCHS staff review the files on an ongoing basis to detect problems in overall quality such as inadequate reporting for certain items, failure to follow NCHS coding rules, and systems and software errors. Traditionally, quality assurance procedures were limited to the review and analysis of differences between NCHS and registration area code assignments for a small sample of records. As electronic birth registration became prevalent, this procedure was augmented by analyses of year-to-year and area-to-area variations in the data. These analyses are based on

preliminary tabulations of the data that are cumulated by state on a year-to-date basis. NCHS investigates all differences that are judged to have consequences for quality and completeness. In the review process, statistical tests are used to call initial attention to differences for possible follow-up. As necessary, registration areas are informed of differences encountered in the tables and asked to verify the counts or to determine the nature of the differences. Missing records (except those permanently voided) and other problems detected by NCHS are resolved, and corrections are transmitted to NCHS.

State-specific data quality issues of particular concern for 2010:

Arkansas:

- Tocolysis – The level of tocolysis is inflated due to inaccurate reporting. Data for this item for this state should be used with caution and have been excluded from **Documentation Table 6**.

Delaware:

- Tocolysis – The level of tocolysis is underreported due to inaccurate reporting. Data for this item for this state should be used with caution and have been excluded from **Documentation Table 6**.

Georgia:

- Numerous data items – the percentage of records for which data are unknown is substantially higher compared with other reporting areas (see **Table B**). The impact of the comparatively high level of unknown data is not clear, however, unless otherwise noted, distributions for each item are generally consistent with those of other reporting areas.
- Successful and failed external cephalic version (ECV) – The levels of successful ECV and failed ECV are inflated due to inaccurate reporting. Data for these items for this state should be used with caution and have been excluded from **Documentation Table 6**.

Illinois:

- Successful external cephalic version (ECV) – The level of successful ECV is inflated due to inaccurate reporting. Data for this item for this state should be used with caution and have been excluded from **Documentation Table 6**.

Maryland:

- Successful external successful version (ECV) – The level of successful ECV is inflated

due to inaccurate reporting. Data for this item for this state should be used with caution and have been excluded from **Documentation Table 6.**

Missouri:

- Father's Hispanic origin – The level of "non-Hispanic" origin of father is inflated due to inaccurate reporting. Data for this item for this state should be used with caution.

New Mexico:

- Tocolysis – The level of tocolysis is inflated due to inaccurate reporting. Data for this item for this state should be used with caution and have been excluded from **Documentation Table 6**.

Northern Marianas:

- Numerous data items – the percentage of records for which data are unknown (over 50% for many items) is substantially higher than those for other reporting areas (see **Table B**).

Ohio

- Successful external cephalic version (ECV) – The level of successful ECV is inflated due to inaccurate reporting. Data for this item for this state should be used with caution and have been excluded from **Documentation Table 6.**

Virginia:

- Attendant at birth – The level of the attendant at birth "other midwife" is inflated due to inaccurate reporting. Data for this item for this state should be used with caution.

Computation of Rates and Other Measures

Population denominators

Estimation by age, sex, race and Hispanic origin -- Populations for birth and fertility rates for 2010 shown in the report: "Births: Final Data for 2010" [1] are based on counts enumerated from the 2010 census, as of April 1, 2010. These populations are shown in **Table 1** of these Detailed Notes. The population estimates have been provided by the U.S. Census Bureau [61] and are based on the 2010 census counts by age, sex, race, and Hispanic origin, which have been modified to be consistent with Office of Management and Budget racial categories as of 1977 and historical categories for birth data. The modification procedures are described in detail elsewhere [30,32,33,62-64].

Birth and fertility rates by state shown in the 2010 final report [1] are enumerated state-

level population counts from the 2010 census provided by the U.S. Census Bureau [61]. Rates for the territories except Puerto Rico are based on population estimates provided by the U.S. Census Bureau's International Data Base [64]. Rates for Puerto Rico are based on counts enumerated from the 2010 census, as of April 1, 2010 and are provided by the U.S. Census Bureau [65]. Rates by state and territory shown in this report may differ from rates computed on the basis of other population estimates; rates for smaller population subgroups, such as those for teenaged mothers, may be particularly affected by differences in population estimates. Birth and fertility rates by month shown in the 2010 natality final report [1] are based on monthly population estimates consistent with the April 1, 2010 population estimates. Rates for unmarried women [1] are based on distributions of the population by marital status averaged over a 3-year period for 2009-2011 as reported by the U.S. Census Bureau in the March Current Population Survey (CPS) for each year [28,66,67], which have been adjusted to July 2010 (2010 census) population levels [68] by the Division of Vital Statistics, NCHS [49]. Birth and fertility rates for specified Hispanic population groups**,** are based on distributions of the population by detailed Hispanic origin for 2010 as reported by the U.S. Census Bureau in the March Current Population Survey (CPS) [28], which have been adjusted to April 1, 2010 (2010 census) population levels [61] by the NCHS Division of Vital Statistics . Rates for Hispanic subgroups are presented in **Table 1**. Information about allocation to Hispanic subgroups is presented elsewhere [69-71].

Rates for 2001–2009 shown in this report have been revised using (intercensal) population estimates based on the 2000 and 2010 censuses, as of July 1 of each year, to provide more accurate rates for the period [72]. The revised rates may differ from the original rates published in ''Births: Final Data for 2009'' [42] and earlier reports, which were based on 2000 (postcensal) population estimates. Differences in the rates may vary by age and race and Hispanic origin population group. For example, the revised 2009 general fertility rate was lower for AIAN (18 percent), API (11 percent), and Hispanic women (7 percent) compared with the original 2009 published rates, whereas the revised rate for non-Hispanic white women was higher (2 percent) and the rate for non-Hispanic black women was unchanged. The overall effect of the revised rates is that the range in rates among population subgroups is somewhat smaller than indicated by the previously published rates.

The populations by race used in this report were produced under a collaborative arrangement with the U.S. Census Bureau and are based on the 2010 census counts. Reflecting

the new guidelines issued in 1997 by the Office of Management and Budget (OMB), the 2010 census (and 2000 census) included an option for individuals to report more than one race as appropriate for themselves and household members [31]. In addition, the 1997 OMB guidelines called for reporting of Asian persons separately from Native Hawaiians or other Pacific Islanders. In the 1977 OMB guidelines, data for Asian or Pacific Islander persons were collected as a single group [30]. For the non multiple-race reporting areas (12 states, American Samoa, Guam, U.S. Virgin Islands, and Puerto Rico), birth certificates currently report only one race for each parent in the categories specified in the 1977 OMB guidelines (see "Hispanic origin, race and national origin"). In addition, unrevised birth certificate data do not report Asians separately from Native Hawaiians or other Pacific Islanders. Thus, birth certificate data by race (the numerators for birth and fertility rates) currently are incompatible with the population data collected in the 2010 census (the denominators for the rates).

To produce birth and fertility rates for 1991 through 2010, it was necessary to ''bridge'' the population data for multiple-race persons back to single-race categories. In addition, the 2010 (and 2000) census counts estimates were modified to be consistent with the 1977 OMB racial categories, that is, to report the data for Asian persons and Native Hawaiians or other Pacific Islanders as a combined category Asian or Pacific Islanders [62]. The procedures used to produce the ''bridged'' populations are described in separate publications [32,33]. Beginning with births occurring in 2003, several states began reporting multiple race data. Once all states revise their birth certificates to be compliant with the 1997 OMB standards, the use of ''bridged'' populations can be discontinued.

Populations used to calculate the rates for 2001-2009 (and 1991–1999) are based on population estimates as of July 1 of each year and were produced by the U.S. Census Bureau, with support from the National Cancer Institute [32,63,64,71-73]. The rates for 2000 and 2010 are based on populations from the censuses in those years as of April 1.

Rates for the specified Hispanic groups from 2001 through 2009 shown in this report have been revised using population estimates prepared by the Division of Vital Statistics, NCHS. The population estimates were produced by applying proportions derived from the 2000-based population estimates (according to year, sex, and age for the specified Hispanic population groups) to the 2010-based population of Hispanic females by age group, and adjusting the sum of the population estimates to be consistent with the total population of Hispanics females by age

(2010 based). Revised population estimates for the specified Hispanic groups are not expected from the Census Bureau.

The population data used to compile birth and fertility rates by race and ethnicity shown in "Births: Final data for 2010" [1] and used for this file are based on special estimation procedures, and are not actual counts. This is the case even for the 2010 and 2000 populations that are based on the 2010 and 2000 censuses. As a result, the estimation procedures used to develop these populations may contain some errors. Smaller populations, for example, American Indians or Alaskan Natives, are likely to be affected much more than larger populations by potential measurement error [32,33]. While the nature and magnitude of error is unknown, the potential for error should be kept in mind when evaluating trends and differentials. As more accurate information becomes available, further revisions of the estimates may be necessary.

Additional information on the revised populations is available at: http://www.cdc.gov/nchs/nvss/bridged_race.htm.

Residential population base -- Birth rates for the United States and individual states are based on the total resident populations of the respective areas (**Table 2**). These populations exclude the Armed Forces abroad but include the Armed Forces stationed in each area. The residential population of the birth- and death-registration states for 1900–1932 and for the United States for 1900–2010 is shown in **Table 3**. In addition, the population including Armed Forces abroad is shown for the United States. **Table F** in these Notes shows the sources for these populations. A detailed discussion of historical population bases is presented elsewhere [11].

Small populations as denominators -- An asterisk (*) is shown in place of any derived rate based on fewer than 20 births in the numerator, or a population denominator of less than 50 (unweighted) for decennial years and 75,000 (weighted) for all other years for the Hispanic subgroups. Rates based on populations below these minimum levels lack sufficient reliability for analytic purposes. These guidelines follow the suggestions of the U.S. Census Bureau [74,75].

Net census undercounts and overcounts -- Studies conducted by the U.S. Census Bureau indicate that some age, race, and sex groups are more completely enumerated than others. Census miscounts can have consequences for vital statistics measures. For example, an adjustment to increase the population denominator would result in a smaller rate compared to the unadjusted population. A more detailed discussion of census undercounts and overcounts can be

found in the "1999 Technical Appendix" [11]. Adjusted rates for 2010 can be computed by multiplying the reported rates by ratios from the 2010 census-level population adjusted for the estimated age-specific census over- and undercounts, which are shown in **Table G** of these Notes.

Cohort fertility tables

Various fertility measures for cohorts of women are computed from births adjusted for underregistration and population estimates corrected for under enumeration and misstatement of age. Cohort fertility tables are available through 2005 and have recently been revised and updated to incorporate new rates for black women [76,77]. A detailed description of the methods used in deriving these measures is available in an earlier publication as well as detailed data for earlier years [78].

Total fertility rates

The total fertility rate is the sum of the birth rates by age of mother (in 5–year age groups) multiplied by 5. It is an age–adjusted rate because it is based on the assumption that there is the same number of women in each age group. The rate of 1,931.0 in 2010, for example, means that if a hypothetical group of 1,000 women were to have the same birth rates in each age group that were observed in the actual childbearing population in 2010, they would have a total of 1,931.0 children by the time they reached the end of the reproductive period (taken here to be age 50 years), assuming that all of the women survived to that age.

Seasonal adjustment of rates

The seasonally adjusted birth and fertility rates are computed from the X–11 variant of Census Method II [79]. This method, used since 1964, differs slightly from the U.S. Bureau of Labor Statistics (BLS) Seasonal Factor Method, which was used for *Vital Statistics of the United States*, 1964. The fundamental technique is the same in that it is an adaptation of the ratio-to-moving-average method. Before 1964, the method of seasonal adjustment was based on the X–9 variant and other variants of Census Method II. A comparison of the Census Method II with the BLS Seasonal Factor Method shows the differences in the seasonal patterns of births to be negligible.

Computation of percentages, percentage distributions, and means

Births for which a particular characteristic is unknown were subtracted from the figures for total births that were used as denominators before percentages, percentage distributions, and means were computed. The percentage of records with missing information for each item is shown by state in **Table B**. The mean age of mother is the arithmetic average of the age of mothers at the time of birth, computed directly from the frequency of births by age of mother. An asterisk is shown in place of any derived statistic based on fewer than 20 births in the numerator or denominator.

Computation of Measures of Variability

Random variation and confidence intervals for natality data

The number of births reported for an area is essentially a complete count, because more than 99 percent of all births are registered. Although this number is not subject to sampling error, it may be affected by nonsampling errors such as mistakes in recording the mother's residence or age during the registration process.

When the number of births is used for analytic purposes (that is, for the comparison of numbers, rates, and percents over time, for different areas, or between different groups), the number of events that *actually* occurred can be thought of as one outcome in a large series of possible results that *could have* occurred under the same (or similar) circumstances. When considered in this way, the number of births is subject to random variation and a probable range of values estimated from the actual figures, according to certain statistical assumptions.

The confidence interval is the range of values for the number of births, birth rates, or percent of births that you could expect in 95 out of 100 cases. The confidence limits are the end points of this range of values (the highest and lowest values). Confidence limits tell you how much the number of events or rates could vary under the same (or similar) circumstances.

Confidence limits for numbers, rates, and percents can be estimated from the actual number of vital events. Procedures differ for rates and percents and also differ depending on the number of births on which these statistics are based. Below are detailed procedures and examples for each type of case.

When the number of vital events is large, the distribution is assumed to follow a normal

distribution (where the relative standard error is small). When the number of events is small and the probability of the event is small, the distribution is assumed to follow a Poisson probability distribution. Considerable caution should be observed in interpreting the occurrence of infrequent events.

95-percent confidence limits for numbers less than 100 — When the number of births is less than 100 and the rate is small, the data are assumed to follow a Poisson probability distribution [80]. Confidence limits are estimated using the following formulas:

$$\text{Lower limit} = B \times L$$

$$\text{Upper limit} = B \times U$$

where:

B = number of births

L = the value in **Table H** that corresponds to the number B

U = the value in **Table H** that corresponds to the number B

Example

Suppose that the number of first births to American Indian or Alaskan Native (AIAN) women 40-44 years of age was 47. The confidence limits for this number would be:

$$\begin{aligned}\text{Lower limit} &= 47 \times 0.73476 \\ &= 35 \\ \text{Upper limit} &= 47 \times 1.32979 \\ &= 63\end{aligned}$$

This means that the chances are 95 out of 100 that the actual number of first births to AIAN women 40-44 years of age would lie between 35 and 63.

95-percent confidence limits for numbers of 100 or more — When the number of events is greater than 100, the data are assumed to approximate a normal distribution. Formulas for 95-percent confidence limits are:

$$\text{Lower limit} = B - \left(1.96 \times \sqrt{B}\right)$$

$$\text{Upper limit} = B + \left(1.96 \times \sqrt{B}\right)$$

where:

B = number of births

Example

Suppose that the number of first births to white women 40-44 years of age was 14,108. The 95-percent confidence limits for this number would be:

$$\begin{aligned}\text{Lower limit} &= 14{,}108 - \left(1.96 \times \sqrt{14{,}108}\right) \\ &= 14{,}108 - 233 \\ &= 13{,}875\end{aligned}$$

$$\begin{aligned}\text{Upper limit} &= 14{,}108 + \left(1.96 \times \sqrt{14{,}108}\right) \\ &= 14{,}108 + 233 \\ &= 14{,}341\end{aligned}$$

This means that the chances are 95 out of 100 that the actual number of first births to white women 40-44 years of age would fall between 13,875 and 14,341.

Computing confidence intervals for rates — The same statistical assumptions can be used to estimate the variability in birth rates. Again, one formula is used for rates based on numbers of events less than 100, and another formula for rates based on numbers of 100 or greater. For our purposes, assume that the denominators of these rates (the population estimates) have no error. While this assumption is technically correct *only* for denominators based on the census that occurs every 10 years, the error in intercensal population estimates is usually small, difficult to measure, and therefore not considered. (See, however, discussion of population denominators in "population bases" [11].)

95-percent confidence limits for rates based on fewer than 100 events — As stated earlier, when the number of events in the numerator is less than 20 (or the population denominator is less than 50 for decennial years and 75,000 (weighted) for all other years for an Hispanic subgroup), an asterisk (*) is shown in place of the rate because there were too few births or the population is too small to compute a statistically reliable rate. When the number of events in the numerator is greater than 20 but less than 100 (and the population denominator for the subgroups is above the minimum), the confidence interval for a rate can be estimated using the two formulas which follow and the values in **Table H**.

$$\text{Lower limit} = R \times L$$

$$\text{Upper limit} = R \times U$$

where:

R = birth rate

L = the value in **Table H** that corresponds to the number of events B

U = the value in **Table H** that corresponds to the number of events B

Example

Suppose that the first birth rate for American Indian and Alaskan Native (AIAN) women 40-44 years of age was 0.50 per thousand, based on 47 births in the numerator. Using **Table H**:

$$\begin{aligned}\text{Lower limit} &= 0.50 \times 0.73476 \\ &= 0.37 \\ \text{Upper limit} &= 0.50 \times 1.32979 \\ &= 0.66\end{aligned}$$

This means that the chances are 95 out of 100 that the actual first birth rate for AIAN women 40-44 years of age would be between 0.37 and 0.66.

95-percent confidence limits for rates when the numerator is 100 or more — In this case, use the following formula for the birth rate R based on the number of births B:

$$\text{Lower limit} = R - \left(1.96 \times \left(R / \sqrt{B}\right)\right)$$

$$\text{Upper limit} = R + \left(1.96 \times \left(R / \sqrt{B}\right)\right)$$

where:

R = birth rate

B = number of births

Example

Suppose that the first birth rate for white women 40-44 years of age was 1.55 per thousand, based on 14,108 births in the numerator. Therefore, the 95-percent confidence interval would be:

$$\begin{aligned}\text{Lower limit} &= 1.55 - \left(1.96 \times \left(1.55 / \sqrt{14{,}108}\right)\right) \\ &= 1.55 - 0.026 \\ &= 1.52\end{aligned}$$

$$\text{Upper limit} = 1.55 + \left(1.96 \times \left(1.55 / \sqrt{14{,}108}\right)\right)$$
$$= 1.55 + 0.026$$
$$= 1.58$$

This means that the chances are 95 out of 100 that the actual first birth rate for white women 40-44 years of age lies between 1.52 and 1.58.

Computing 95-percent confidence intervals for percents and proportions — In many instances we need to compute the confidence intervals for percents or proportions. Percents derive from a binomial distribution. As with birth rates, an asterisk (*) will be shown for any percent which is based on fewer than 20 births in the numerator. The computation of a 95-percent confidence interval for a percent is made when the following conditions are met:

$$B \times p \geq 5 \text{ and } B \times q \geq 5$$

where:

B	=	number of births in the denominator
p	=	percent divided by 100
q	=	1 - p

For natality data, these conditions will be met except for very rare events in small subgroups. If the conditions are not met, the variation in the percent will be so large as to render the confidence intervals meaningless. When these conditions are met the 95-percent confidence interval can be computed using the normal approximation of the binomial. The 95-percent confidence intervals are computed by the following formulas

$$\text{Lower limit} = p - \left(1.96\text{x}\left(\sqrt{p\text{x}\ q / B}\right)\right)$$

$$\text{Upper limit} = p + \left(1.96\text{x}\left(\sqrt{p\text{x}\ q / B}\right)\right)$$

where:

p	=	percent divided by 100
q	=	1- p
B	=	number of births in the denominator

Example

Suppose that the percent of births to Hispanic women in Arizona that were to unmarried women was 49.7 percent. This was based on 14,752 births in the numerator and 29,682 births in the denominator. First is the test to make sure the normal approximation of the binomial can be used:

$$29{,}682 \times 0.497 = 14{,}752$$

$$29{,}682 \times (1 - 0.497) = 29{,}682 \times 0.503 = 14{,}930$$

Both 14,752 and 14,930 are greater than 5, so we can proceed. The 95-percent confidence interval would be:

$$\begin{aligned} \text{Lower limit} &= 0.497 - \left(1.96 \text{ x } \left(\sqrt{0.497 \text{ x } 0.503 / 29{,}682}\right)\right) \\ &= 0.497 - 0.006 \\ &= 0.491 \text{ or } 49.1 \text{ percent} \end{aligned}$$

$$\begin{aligned} \text{Upper limit} &= 0.497 + \left(1.96 \text{ x } \left(\sqrt{0.497 \text{ x } 0.503 / 29{,}682}\right)\right) \\ &= 0.497 + 0.006 \\ &= 0.503 \text{ or } 50.3 \text{ percent} \end{aligned}$$

This means that the chances are 95 out of 100 that the actual percent of births to unmarried Hispanic women in Arizona is between 49.1 and 50.3 percent.

Significance testing for population groups

Significance testing when one or both of the rates is based on fewer than 100 cases — To compare two rates, when one or both of those rates are based on less than 100 cases, you first compute the confidence intervals for both rates. Then you check to see if those intervals overlap. If they **do** overlap, the difference is not statistically significant at the 95-percent level. If they **do not** overlap, the difference is indeed statistically significant.

Example

Suppose that the first birth rate for American Indian and Alaskan Native (AIAN) women 40-44 years of age was 0.70 per 1,000 in year X and 0.57 in year Y. Is the rate for year X significantly higher than the rate for year Y? The two rates are based on 63 events in year X and

54 events in year Y. Both rates are based on fewer than 100 events; therefore, the first step is to compute the confidence intervals for both rates.

	Lower Limit	Upper Limit
Year X	0.54	0.90
Year Y	0.43	0.74

These two confidence intervals overlap. Therefore, the first birth rate for AIAN women 40-44 in year X is not significantly higher (at the 95-percent confidence level) than the rate in year Y.

This method of comparing confidence intervals is a conservative test for statistical significance. That is, the difference between two rates may, in fact, be statistically significant even though confidence intervals for the two rates overlap [81]. Thus, caution should be observed when interpreting a non-significant difference between two rates, especially when the lower and upper limits being compared overlap only slightly.

Significance testing when both rates are based on 100 or more events — When both rates are based on 100 or more events, the difference between the two rates, irrespective of sign (+/-), is considered statistically significant if it exceeds the statistic in the formula below. This statistic equals 1.96 times the standard error for the difference between two rates.

$$1.96 \times \sqrt{\frac{R_1^2}{N_1} + \frac{R_2^2}{N_2}}$$

where:

R_1 = first rate

R_2 = second rate

N_1 = first number of births

N_2 = second number of births

If the difference is **greater** than this statistic, then the difference would occur by chance less than 5 times out of 100. If the difference is **less than or equal** to this statistic, the difference might occur by chance more than 5 times out of 100. We say that the difference is not statistically significant at the 95-percent confidence level.

Example

Is the first birth rate for black women 40-44 years of age (1.08 per 1,000) significantly lower than the comparable rate for white women (1.55)? Both rates are based on more than 100 births (1,535 for black women and 14,108 for white women). The difference between the rates is 1.55 - 1.08 = 0.47. The statistic is then calculated as follows:

$$
\begin{aligned}
&= 1.96 \times \sqrt{\frac{1.08^2}{1{,}535} + \frac{1.55^2}{14{,}108}} \\
&= 1.96 \times \sqrt{\left(\left(1.166/1{,}535\right) + \left(2.403/14{,}108\right)\right)} \\
&= 1.96 \times \sqrt{0.00076 + 0.00017} \\
&= 1.96 \times \sqrt{0.00093} \\
&= 1.96 \times 0.03 \\
&= 0.06
\end{aligned}
$$

The difference between the rates (0.47) is greater than this statistic (0.06). Therefore, the difference is statistically significant at the 95-percent confidence level.

Significance testing differences between two percentages — When testing the difference between two percents, both percents must meet the following conditions:

$$B \times p \geq 5 \text{ and } B \times q \geq 5$$

where:

B	=	number of births in the denominator
p	=	percent divided by 100
q	=	1 - p

When both percents meet these conditions then the difference between the two percents is considered statistically significant if it is greater than the statistic in the formula below. This statistic equals 1.96 times the standard error for the difference between two percents.

$$1.96 \times \sqrt{P \times \left(1 - P\right) \times \left(\frac{1}{B_1} + \frac{1}{B_2}\right)}$$

where:

B_1	=	number of births in the denominator of the first percent

B_2 = number of births in the denominator of the second percent

$$P = \frac{B_1 \times p_1 + B_2 \times p_2}{B_1 + B_2}$$

p_1 = the first percent divided by 100

p_2 = the second percent divided by 100

Example

Is the percent of births to Hispanic women that were to unmarried women higher in New Mexico (50.2) than in Arizona (49.7)? Suppose that the number in the denominator was 13,714 in New Mexico and 29,682 in Arizona. The necessary conditions are met for both percents (calculations not shown). The difference between the two percents is 0.502 - 0.497 = 0.005. The statistic is then calculated as follows:

$$\begin{aligned} & 1.96 \times \sqrt{0.499 \times (0.501) \times (0.000106609)} \\ & = 1.96 \times \sqrt{0.000026652} \\ & = 1.96 \times 0.005162563 \\ & = 0.010 \end{aligned}$$

The difference between the percents (0.005) is less than this statistic (0.010). Therefore, the difference is not statistically significant at the 95-percent confidence level.

Significance testing differences between two means — A previous report details the formula and procedure in testing differences between two means in which both means are based on 100 or more cases [82]. When one or both means is based on fewer than 100 cases, confidence intervals are computed for both means based on the standard error of the mean: $s / \sqrt{N}$; s is the standard deviation and N is the number of births. If the confidence intervals overlap, the difference is not statistically significant given the width of the confidence interval (i.e. 0.95 percent level). If they do not overlap, the difference is statistically significant.

Random variation and significance testing for population subgroups

This section presents information relevant to Hispanic subgroups (or generally speaking, *any* subgroup of the population for which *survey* data has been used for estimation of the

denominator.) Birth and fertility rates for Mexicans, Puerto Ricans, Cubans, and "Other" Hispanic subgroups for 2010 are shown in the 2010 final report [1] and in the "Vital Statistics of the United States, 2010, Part 1, Natality" (in preparation). *Population estimates* for Hispanic subgroups are derived from the U.S. Census Bureau's Current Population Survey (CPS) and adjusted to resident population control totals as shown in **Table 1** [64]. As a result, the rates are subject to the variability of the denominator as well as the numerator. For these Hispanic subgroups (but not for all origin, total Hispanic, total non-Hispanic, non-Hispanic white, or non-Hispanic black populations), the following formulas are used for testing statistical significance in trends and differences:

Approximate 95-percent confidence interval: less than 100 births — When the number of events in the numerator is less than 20, an asterisk is shown in place of the rate. When the number of events in the numerator is greater than 20 but less than 100, the confidence interval for the birth rate can be estimated using the formulas that follow and the values in **Table H.** For crude and age–specific birth rates,

$$\text{Lower limit} = R * L(1-\alpha = .96, B) * \left(1 - 2.576\sqrt{f\left(a + \frac{b}{P}\right)}\right)$$

$$\text{Upper limit} = R * U(1-\alpha = .96, B) * \left(1 + 2.576\sqrt{f\left(a + \frac{b}{P}\right)}\right)$$

where:

- R = rate (births per 1,000 population)
- L = the value in **Table H** that corresponds to the number B, using the 96 percent CI column
- U = the value in **Table H** that corresponds to the number B, using the 96 percent CI column
- α = standard error term for selecting CI column in **Table H**
- B = total number of births upon which rate is based
- f = the factor which depends on whether an entire or a sampled population (like one from a Current Population Survey – CPS) is used, and the span of years represented. f equals 0.670 for a single year
- a and b of the example are single year averages of the 2009 and 2010 CPS standard error parameters [83,84]
- P = total estimated population upon which the rate is based

NOTE: In the formulas above, the confidence limits are estimated from the non-sampling error in the number of births, the numerator, and the sampling error in the population estimate,

the denominator. A 96 percent standard error is computed for the numerator and a 99 percent standard error is computed for the denominator in order to compute a 95-percent confidence interval for the rate**.**

Example

Suppose that the birth rate of Puerto Rican women 45–49 years of age was 0.4 per 1,000, based on 35 births in the numerator and an estimated resident population of 87,892 in the denominator. Using **Table H**, the 95-percent confidence interval would be:

$$\text{Lower limit} = 0.4 * 0.68419 * \left(1 - 2.576\sqrt{0.670\left(-0.000087 + \left(\frac{3{,}809}{87{,}892}\right)\right)}\right)$$
$$= 0.4 * 0.68419 * \left(1 - 2.576\sqrt{0.028978}\right)$$
$$= 0.4 * 0.68419 * (1 - (2.576 * 0.170229))$$
$$= 0.4 * 0.68419 * 0.561490$$
$$= 0.154$$

$$\text{Upper limit} = 0.4 * 1.41047 * \left(1 + 2.576\sqrt{0.670\left(-0.000087 + \left(\frac{3{,}809}{87{,}892}\right)\right)}\right)$$
$$= 0.4 * 1.41047 * \left(1 + 2.576\sqrt{0.028978}\right)$$
$$= 0.4 * 1.41047 * (1 + (2.576 * 0.170229))$$
$$= 0.4 * 1.41047 * 1.438510$$
$$= 0.812$$

This means that the chances are 95 out of 100 that the actual birth rate of Puerto Rican women 45–49 years of age lies between 0.15 and 0.81.

Approximate 95-percent confidence interval: 100 or more births — When the number of events in the numerator is greater than 100, the confidence interval for the birth rate can be estimated from the following formulas: For crude and age–specific birth rates,

$$\text{Lower limit} = R - 1.96 * R * \sqrt{\left(\frac{1}{B}\right) + f\left(a + \frac{b}{P}\right)}$$

$$\text{Upper limit} = R + 1.96 * R * \sqrt{\left(\frac{1}{B}\right) + f\left(a + \frac{b}{P}\right)}$$

where:

R = rate (births per 1,000 population)
B = total number of births upon which rate is based

f = the factor which depends on whether an entire or a sampled population (like one from a Current Population Survey – CPS) is used, and the span of years represented. *f* equals 0.670 for a single year

a and *b* of the example are single year averages of the 2009 and 2010 CPS standard error parameters [83,84]

a = -0.000087

b = 3,809

P = total estimated population upon which rate is based

Example

Suppose that the fertility rate of Cuban women 15–44 years of age was 51.2 per 1,000 based on 13,088 births in the numerator and an estimated resident population of 255,399 in the denominator. The 95-percent confidence interval would be:

$$\begin{aligned}\text{Lower limit} &= 51.2 - 1.96 * 51.2 * \sqrt{\left(\frac{1}{13{,}088}\right) + 0.670 * \left[-0.000087 + \left(\frac{3{,}809}{255{,}399}\right)\right]} \\ &= 51.2 - 1.96 * 51.2 * \sqrt{0.000076406 + (0.670 * 0.014827)} \\ &= 51.2 - 1.96 * 51.2 * \sqrt{0.01001050} \\ &= 51.2 - 1.96 * 51.2 * 0.1000524 \\ &= 41.1\end{aligned}$$

$$\begin{aligned}\text{Upper limit} &= 51.2 + 1.96 * 51.2 * \sqrt{\left(\frac{1}{13{,}088}\right) + 0.670 * \left[-0.000087 + \left(\frac{3{,}809}{255{,}399}\right)\right]} \\ &= 51.2 + 1.96 * 51.2 * \sqrt{0.000076406 + (0.670 * 0.014827)} \\ &= 51.2 + 1.96 * 51.2 * \sqrt{0.01001050} \\ &= 51.2 + 1.96 * 51.2 * 0.1000524 \\ &= 61.3\end{aligned}$$

This means that the chances are 95 out of 100 that the actual fertility rate of Cuban women 15–44 years of age is between 41.16 and 61.24.

Significance testing for subgroups — When both rates are based on 100 or more events, the difference between the two rates is considered statistically significant if it exceeds the value given by the formula below. This statistic equals 1.96 times the standard error for the difference between two rates.

$$z = 1.96 * \sqrt{R_1^2 * \left[\left(\frac{1}{B_1}\right) + f\left(a + \frac{b}{P_1}\right)\right] + R_2^2 * \left[\left(\frac{1}{B_2}\right) + f\left(a + \frac{b}{P_2}\right)\right]}$$

If the difference is greater than this statistic, then the difference would occur by chance less than 5 times out of 100. If the difference is less than this statistic, the difference might occur by chance more than 5 times out of 100. It may be concluded that the difference is not statistically significant at the 95-percent confidence level.

Example

Suppose the birth rate for Mexican women 15–19 years of age (R_1) is 94.5, based on 97,744 births and an estimated population of 1,033,878, and the birth rate for Puerto Rican women 15–19 years of age (R_2) is 61.4, based on 10,006 births and an estimated population of 162,899. Using the above formula, the z score is computed as follows

$$= 1.96 * \sqrt{94.5^2 * \left[\left(\frac{1}{97{,}744}\right) + 0.670\left(-0.000087 + \frac{3{,}809}{1{,}033{,}878}\right)\right] + 61.4^2 * \left[\left(\frac{1}{10{,}006}\right) + 0.670\left(-0.000087 + \frac{3{,}809}{162{,}899}\right)\right]}$$

$$= 1.96 * \sqrt{8930.25 * (0.000010231 + 0.670 * 0.003597) + 3769.96(0.00009994 + 0.670 * 0.023296)}$$

$$= 1.96 * \sqrt{(8930.25 * 0.00242022) + (3769.96 * 0.015708)}$$

$$= 1.96 * \sqrt{21.61 + 59.21}$$

$$= 1.96 * 9.0$$

$$= 17.64$$

Since the difference between the two rates 33.1 is greater than the value above (17.64), the two rates are statistically significantly different at the 0.05 level of significance.

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Figure 1. U.S. Standard Certificate of Live Birth, 2003 Revision

U.S. STANDARD CERTIFICATE OF LIVE BIRTH

LOCAL FILE NO. BIRTH NUMBER:

CHILD

1. CHILD'S NAME (First, Middle, Last, Suffix)
2. TIME OF BIRTH (24 hr)
3. SEX
4. DATE OF BIRTH (Mo/Day/Yr)
5. FACILITY NAME (If not institution, give street and number)
6. CITY, TOWN, OR LOCATION OF BIRTH
7. COUNTY OF BIRTH

MOTHER

8a. MOTHER'S CURRENT LEGAL NAME (First, Middle, Last, Suffix)
8b. DATE OF BIRTH (Mo/Day/Yr)
8c. MOTHER'S NAME PRIOR TO FIRST MARRIAGE (First, Middle, Last, Suffix)
8d. BIRTHPLACE (State, Territory, or Foreign Country)
9a. RESIDENCE OF MOTHER-STATE
9b. COUNTY
9c. CITY, TOWN, OR LOCATION
9d. STREET AND NUMBER
9e. APT. NO.
9f. ZIP CODE
9g. INSIDE CITY LIMITS? □ Yes □ No

FATHER

10a. FATHER'S CURRENT LEGAL NAME (First, Middle, Last, Suffix)
10b. DATE OF BIRTH (Mo/Day/Yr)
10c. BIRTHPLACE (State, Territory, or Foreign Country)

CERTIFIER

11. CERTIFIER'S NAME: _____
TITLE: □ MD □ DO □ HOSPITAL ADMIN. □ CNM/CM □ OTHER MIDWIFE
□ OTHER (Specify)_____
12. DATE CERTIFIED ____/____/_____ MM DD YYYY
13. DATE FILED BY REGISTRAR ____/____/_____ MM DD YYYY

INFORMATION FOR ADMINISTRATIVE USE

MOTHER

14. MOTHER'S MAILING ADDRESS: 9 Same as residence, or: State: City, Town, or Location:
Street & Number: Apartment No.: Zip Code:
15. MOTHER MARRIED? (At birth, conception, or any time between) □ Yes □ No
IF NO, HAS PATERNITY ACKNOWLEDGEMENT BEEN SIGNED IN THE HOSPITAL? □ Yes □ No
16. SOCIAL SECURITY NUMBER REQUESTED FOR CHILD? □ Yes □ No
17. FACILITY ID. (NPI)
18. MOTHER'S SOCIAL SECURITY NUMBER:
19. FATHER'S SOCIAL SECURITY NUMBER:

INFORMATION FOR MEDICAL AND HEALTH PURPOSES ONLY

MOTHER

20. MOTHER'S EDUCATION (Check the box that best describes the highest degree or level of school completed at the time of delivery)
□ 8th grade or less
□ 9th - 12th grade, no diploma
□ High school graduate or GED completed
□ Some college credit but no degree
□ Associate degree (e.g., AA, AS)
□ Bachelor's degree (e.g., BA, AB, BS)
□ Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA)
□ Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DVM, LLB, JD)

21. MOTHER OF HISPANIC ORIGIN? (Check the box that best describes whether the mother is Spanish/Hispanic/Latina. Check the "No" box if mother is not Spanish/Hispanic/Latina)
□ No, not Spanish/Hispanic/Latina
□ Yes, Mexican, Mexican American, Chicana
□ Yes, Puerto Rican
□ Yes, Cuban
□ Yes, other Spanish/Hispanic/Latina
(Specify)_____

22. MOTHER'S RACE (Check one or more races to indicate what the mother considers herself to be)
□ White
□ Black or African American
□ American Indian or Alaska Native (Name of the enrolled or principal tribe)_____
□ Asian Indian
□ Chinese
□ Filipino
□ Japanese
□ Korean
□ Vietnamese
□ Other Asian (Specify)_____
□ Native Hawaiian
□ Guamanian or Chamorro
□ Samoan
□ Other Pacific Islander (Specify)_____
□ Other (Specify)_____

FATHER

23. FATHER'S EDUCATION (Check the box that best describes the highest degree or level of school completed at the time of delivery)
□ 8th grade or less
□ 9th - 12th grade, no diploma
□ High school graduate or GED completed
□ Some college credit but no degree
□ Associate degree (e.g., AA, AS)
□ Bachelor's degree (e.g., BA, AB, BS)
□ Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA)
□ Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DVM, LLB, JD)

24. FATHER OF HISPANIC ORIGIN? (Check the box that best describes whether the father is Spanish/Hispanic/Latino. Check the "No" box if father is not Spanish/Hispanic/Latino)
□ No, not Spanish/Hispanic/Latino
□ Yes, Mexican, Mexican American, Chicano
□ Yes, Puerto Rican
□ Yes, Cuban
□ Yes, other Spanish/Hispanic/Latino
(Specify)_____

25. FATHER'S RACE (Check one or more races to indicate what the father considers himself to be)
□ White
□ Black or African American
□ American Indian or Alaska Native (Name of the enrolled or principal tribe)_____
□ Asian Indian
□ Chinese
□ Filipino
□ Japanese
□ Korean
□ Vietnamese
□ Other Asian (Specify)_____
□ Native Hawaiian
□ Guamanian or Chamorro
□ Samoan
□ Other Pacific Islander (Specify)_____
□ Other (Specify)_____

Mother's Name

Mother's Medical Record No.

26. PLACE WHERE BIRTH OCCURRED (Check one)
□ Hospital
□ Freestanding birthing center
□ Home Birth: Planned to deliver at home? 9 Yes 9 No
□ Clinic/Doctor's office
□ Other (Specify)_____

27. ATTENDANT'S NAME, TITLE, AND NPI
NAME: _____ NPI:_____
TITLE: □ MD □ DO □ CNM/CM □ OTHER MIDWIFE
□ OTHER (Specify)_____

28. MOTHER TRANSFERRED FOR MATERNAL MEDICAL OR FETAL INDICATIONS FOR DELIVERY? □ Yes □ No
IF YES, ENTER NAME OF FACILITY MOTHER TRANSFERRED FROM:
_____

REV. 11/2003

MOTHER

29a. DATE OF FIRST PRENATAL CARE VISIT
____/____/____ □ No Prenatal Care
M M D D YYYY

29b. DATE OF LAST PRENATAL CARE VISIT
____/____/____
M M D D YYYY

30. TOTAL NUMBER OF PRENATAL VISITS FOR THIS PREGNANCY
____ (If none, enter "0".)

31. MOTHER'S HEIGHT
____ (feet/inches)

32. MOTHER'S PREPREGNANCY WEIGHT
____ (pounds)

33. MOTHER'S WEIGHT AT DELIVERY
____ (pounds)

34. DID MOTHER GET WIC FOOD FOR HERSELF DURING THIS PREGNANCY? □ Yes □ No

35. NUMBER OF PREVIOUS LIVE BIRTHS (Do not include this child)

35a. Now Living
Number ____
□ None

35b. Now Dead
Number ____
□ None

36. NUMBER OF OTHER PREGNANCY OUTCOMES (spontaneous or induced losses or ectopic pregnancies)

36a. Other Outcomes
Number ____
□ None

37. CIGARETTE SMOKING BEFORE AND DURING PREGNANCY
For each time period, enter either the number of cigarettes or the number of packs of cigarettes smoked. IF NONE, ENTER "0".

Average number of cigarettes or packs of cigarettes smoked per day.

	# of cigarettes		# of packs
Three Months Before Pregnancy	____	OR	____
First Three Months of Pregnancy	____	OR	____
Second Three Months of Pregnancy	____	OR	____
Third Trimester of Pregnancy	____	OR	____

38. PRINCIPAL SOURCE OF PAYMENT FOR THIS DELIVERY
□ Private Insurance
□ Medicaid
□ Self-pay
□ Other (Specify) ____

35c. DATE OF LAST LIVE BIRTH
____/____
MM Y Y Y Y

36b. DATE OF LAST OTHER PREGNANCY OUTCOME
____/____
MM Y Y Y Y

39. DATE LAST NORMAL MENSES BEGAN
____/____/____
M M D D YYYY

40. MOTHER'S MEDICAL RECORD NUMBER

MEDICAL AND HEALTH INFORMATION

41. RISK FACTORS IN THIS PREGNANCY (Check all that apply)

Diabetes
□ Prepregnancy (Diagnosis prior to this pregnancy)
□ Gestational (Diagnosis in this pregnancy)

Hypertension
□ Prepregnancy (Chronic)
□ Gestational (PIH, preeclampsia)
□ Eclampsia

□ Previous preterm birth

□ Other previous poor pregnancy outcome (Includes perinatal death, small-for-gestational age/intrauterine growth restricted birth)

□ Pregnancy resulted from infertility treatment-If yes, check all that apply:
□ Fertility-enhancing drugs, Artificial insemination or Intrauterine insemination
□ Assisted reproductive technology (e.g., in vitro fertilization (IVF), gamete intrafallopian transfer (GIFT))

□ Mother had a previous cesarean delivery
If yes, how many ____

□ None of the above

42. INFECTIONS PRESENT AND/OR TREATED DURING THIS PREGNANCY (Check all that apply)
□ Gonorrhea
□ Syphilis
□ Chlamydia
□ Hepatitis B
□ Hepatitis C
□ None of the above

43. OBSTETRIC PROCEDURES (Check all that apply)
□ Cervical cerclage
□ Tocolysis

External cephalic version:
□ Successful
□ Failed

□ None of the above

44. ONSET OF LABOR (Check all that apply)
□ Premature Rupture of the Membranes (prolonged, ≥12 hrs.)
□ Precipitous Labor (<3 hrs.)
□ Prolonged Labor (≥ 20 hrs.)
□ None of the above

45. CHARACTERISTICS OF LABOR AND DELIVERY (Check all that apply)
□ Induction of labor
□ Augmentation of labor
□ Non-vertex presentation
□ Steroids (glucocorticoids) for fetal lung maturation received by the mother prior to delivery
□ Antibiotics received by the mother during labor
□ Clinical chorioamnionitis diagnosed during labor or maternal temperature ≥38°C (100.4°F)
□ Moderate/heavy meconium staining of the amniotic fluid
□ Fetal intolerance of labor such that one or more of the following actions was taken: in-utero resuscitative measures, further fetal assessment, or operative delivery
□ Epidural or spinal anesthesia during labor
□ None of the above

46. METHOD OF DELIVERY
A. Was delivery with forceps attempted but unsuccessful?
□ Yes □ No
B. Was delivery with vacuum extraction attempted but unsuccessful?
□ Yes □ No
C. Fetal presentation at birth
□ Cephalic
□ Breech
□ Other
D. Final route and method of delivery (Check one)
□ Vaginal/Spontaneous
□ Vaginal/Forceps
□ Vaginal/Vacuum
□ Cesarean
If cesarean, was a trial of labor attempted?
□ Yes
□ No

47. MATERNAL MORBIDITY (Check all that apply)
(Complications associated with labor and delivery)
□ Maternal transfusion
□ Third or fourth degree perineal laceration
□ Ruptured uterus
□ Unplanned hysterectomy
□ Admission to intensive care unit
□ Unplanned operating room procedure following delivery
□ None of the above

NEWBORN

NEWBORN INFORMATION

48. NEWBORN MEDICAL RECORD NUMBER

49. BIRTHWEIGHT (grams preferred, specify unit)
____
9 grams 9 lb/oz

50. OBSTETRIC ESTIMATE OF GESTATION:
____ (completed weeks)

51. APGAR SCORE:
Score at 5 minutes:____
If 5 minute score is less than 6,
Score at 10 minutes: ____

52. PLURALITY - Single, Twin, Triplet, etc.
(Specify)____

53. IF NOT SINGLE BIRTH - Born First, Second, Third, etc. (Specify) ____

54. ABNORMAL CONDITIONS OF THE NEWBORN (Check all that apply)
□ Assisted ventilation required immediately following delivery
□ Assisted ventilation required for more than six hours
□ NICU admission
□ Newborn given surfactant replacement therapy
□ Antibiotics received by the newborn for suspected neonatal sepsis
□ Seizure or serious neurologic dysfunction
□ Significant birth injury (skeletal fracture(s), peripheral nerve injury, and/or soft tissue/solid organ hemorrhage which requires intervention)
9 None of the above

55. CONGENITAL ANOMALIES OF THE NEWBORN (Check all that apply)
□ Anencephaly
□ Meningomyelocele/Spina bifida
□ Cyanotic congenital heart disease
□ Congenital diaphragmatic hernia
□ Omphalocele
□ Gastroschisis
□ Limb reduction defect (excluding congenital amputation and dwarfing syndromes)
□ Cleft Lip with or without Cleft Palate
□ Cleft Palate alone
□ Down Syndrome
□ Karyotype confirmed
□ Karyotype pending
□ Suspected chromosomal disorder
□ Karyotype confirmed
□ Karyotype pending
□ Hypospadias
□ None of the anomalies listed above

56. WAS INFANT TRANSFERRED WITHIN 24 HOURS OF DELIVERY? 9 Yes 9 No
IF YES, NAME OF FACILITY INFANT TRANSFERRED TO:____

57. IS INFANT LIVING AT TIME OF REPORT?
□ Yes □ No □ Infant transferred, status unknown

58. IS THE INFANT BEING BREASTFED AT DISCHARGE?
□ Yes □ No

Mother's Name _____ Mother's Medical Record No. _____

Table A. Births by place of occurrence and residence for births occurring in the 50 states, the District of Columbia, and U.S. territories, 2010

Area	Number live births	
	Occurrence	Residence
United States[1]	4,007,105	3,999,386
Alabama	58,783	60,050
Alaska	11,366	11,471
Arizona	88,090	87,477
Arkansas	37,536	38,540
California	510,980	510,198
Colorado	66,822	66,355
Connecticut	38,539	37,708
Delaware	11,682	11,364
District of Columbia	13,790	9,165
Florida	214,962	214,590
Georgia	135,411	133,947
Hawaii	18,948	18,988
Idaho	22,799	23,198
Illinois	161,758	165,200
Indiana	84,794	83,940
Iowa	38,574	38,719
Kansas	41,598	40,649
Kentucky	53,565	55,784
Louisiana	62,531	62,379
Maine	12,814	12,970
Maryland	71,739	73,801
Massachusetts	73,275	72,865
Michigan	113,509	114,531
Minnesota	68,269	68,610
Mississippi	39,177	40,036
Missouri	77,588	76,759
Montana	12,066	12,060
Nebraska	26,242	25,918
Nevada	35,671	35,934
New Hampshire	13,032	12,874
New Jersey	103,932	106,922
New Mexico	27,021	27,850
New York	246,081	244,375
North Carolina	123,468	122,350

North Dakota	10,470	9,104
Ohio	139,858	139,128
Oklahoma	52,347	53,238
Oregon	45,904	45,540
Pennsylvania	142,724	143,321
Rhode Island	11,843	11,177
South Carolina	55,599	58,342
South Dakota	12,382	11,811
Tennessee	84,533	79,495
Texas	392,764	386,118
Utah	53,395	52,258
Vermont	5,775	6,223
Virginia	101,202	103,002
Washington	86,507	86,539
West Virginia	20,757	20,470
Wisconsin	67,719	68,487
Wyoming	6,914	7,556
Births occurring to US territorial residents		
Puerto Rico	-	42,153
Virgin Islands	-	1,600
Guam	-	3,416
American Samoa	-	1,234
Northern Marianas	-	1,072

--- Data not available.

[1] Excludes data for the territories and foreign residents

Table B. Percent of birth records on which specified items were not stated: United States and each state and territory, New York City and the District of Columbia, 2010
[By place of residence]

Area	Items common to both the 1989 and 2003 revisions of the U.S. Standard Certificate of Live Birth							
	All births	Place of birth	Attendant at birth	Mother's birthplace	Father's age	Father's race	Hispanic Origin	
							Mother	Father
Total of reporting areas [1]	3,999,386	0.0	0.1	0.3	13.8	19.1	0.7	14.5
Alabama	60,050	-	-	0.2	20.2	20.9	0.0	20.3
Alaska	11,471	0.1	0.0	0.4	9.1	13.3	2.5	30.5
Arizona	87,477	0.0	0.0	0.0	12.1	14.8	0.6	13.4
Arkansas	38,540	0.0	0.0	0.5	20.7	23.8	0.3	20.9
California	510,198	0.0	0.1	0.1	7.7	10.7	1.7	8.4
Colorado	66,355	0.0	0.0	0.1	7.9	12.4	1.0	9.0
Connecticut	37,708	-	0.1	0.2	10.9	12.7	0.2	11.1
Delaware	11,364	-	0.1	0.8	22.2	32.6	0.1	33.6
District of Columbia	9,165	0.0	0.1	1.0	25.3	36.5	0.8	25.7
Florida	214,590	0.0	0.0	0.3	14.9	27.0	0.3	17.1
Georgia	133,947	0.0	0.0	1.2	15.1	28.6	2.2	21.0
Hawaii	18,988	0.0	0.1	0.1	7.9	11.5	0.1	8.0
Idaho	23,198	-	0.0	0.2	8.8	16.7	0.1	11.1
Illinois	165,200	0.0	0.0	0.2	13.4	15.9	0.4	14.5
Indiana	83,940	0.0	0.0	0.5	13.8	18.2	0.2	16.3
Iowa	38,719	-	0.0	0.4	12.8	18.9	0.0	14.7
Kansas	40,649	-	-	0.1	11.4	16.6	0.2	10.7
Kentucky	55,784	0.0	-	0.4	19.5	23.4	0.1	17.6
Louisiana	62,379	-	0.0	0.0	17.5	19.5	0.0	16.3
Maine	12,970	-	0.0	-	11.7	12.4	0.2	12.9
Maryland	73,801	0.0	0.9	0.3	12.7	24.1	0.2	18.2
Massachusetts	72,865	0.0	-	0.4	9.4	10.9	0.3	9.4
Michigan	114,531	0.0	0.0	0.2	16.6	19.1	0.0	18.6
Minnesota	68,610	-	0.1	0.3	11.9	18.5	1.0	13.8
Mississippi	40,036	-	0.0	0.0	22.3	22.6	0.1	22.7
Missouri	76,759	0.0	-	0.4	18.3	22.1	0.5	3.4
Montana	12,060	-	-	0.0	8.4	11.0	2.1	10.0
Nebraska	25,918	-	-	0.1	12.2	22.9	0.0	13.0
Nevada	35,934	0.0	-	0.4	14.8	19.5	0.2	17.0
New Hampshire	12,874	-	0.0	0.1	8.5	12.3	0.7	8.4
New Jersey	106,922	0.0	0.0	0.1	7.5	11.5	0.4	8.6
New Mexico	27,850	0.0	0.0	0.3	17.9	21.2	0.9	21.2
New York (excluding NYC)	123,678	0.0	0.0	0.0	11.2	16.6	0.8	12.3
New York City	120,697	-	0.0	0.1	14.1	15.3	3.2	17.9
North Carolina	122,350	-	0.1	0.1	18.4	20.8	0.0	18.4
North Dakota	9,104	-	-	0.4	7.2	11.7	1.0	10.5
Ohio	139,128	0.0	0.0	0.5	18	21.0	0.6	18.4
Oklahoma	53,238	-	0.0	0.1	13.9	20.3	0.2	16.1
Oregon	45,540	-	-	0.2	8.5	15.8	0.4	0.9
Pennsylvania	143,321	-	0.1	3.5	14.2	14.3	1.0	8.0
Rhode Island	11,177	-	-	0.2	12.6	29.3	2.0	14.2
South Carolina	58,342	0.0	0.1	0.0	27.3	32.3	0.5	27.7
South Dakota	11,811	-	0.0	0.1	9.5	9.9	0.2	9.6
Tennessee	79,495	-	0.0	0.2	17.2	24.3	0.1	17.3
Texas	386,118	0.0	0.2	0.1	14.8	25.7	0.1	14.9
Utah	52,258	-	0.0	0.2	7.1	16.0	0.0	7.7
Vermont	6,223	0.1	0.0	0.1	7.3	10.6	0.2	9.9
Virginia	103,002	0.0	0.1	0.1	13.1	16.0	0.1	14.6
Washington	86,539	-	0.0	0.6	8.9	22.1	1.4	13.2
West Virginia	20,470	0.0	0.0	0.2	11.4	14.7	0.4	14.5
Wisconsin	68,487	-	0.0	0.1	36.3	36.4	0.1	36.3
Wyoming	7,556	-	0.0	0.2	16.5	20.4	1.9	18.8
Puerto Rico	42,153	0.3	0.4	0.1	4.1	5.5	0.1	4.6
Virgin Islands	1,600	-	0.4	0.9	20.9	22.1	0.9	39.5
Guam	3,416	0.0	0.1	0.2	24.6	26.0	0.1	24.7
American Samoa	1,234	-	-	2.4	35.4	35.5	---	---
Northern Marianas	1,072	-	-	-	8.6	8.0	1.1	9.9

See footnotes at end of table.

Table B. Percent of birth records on which specified items were not stated: United States and each state and territory, New York City and the District of Columbia, 2010 -- Con.
[By place of residence]

Area	Items common to both the 1989 and 2003 revisions of the U.S. Standard Certificate of Live Birth				
	Educational attainment of mother	Live-birth order	Length of gestation	Month prenatal care began	Number of prenatal visits
	Revised [2]			Revised [2]	
Total of reporting areas [1]	1.7	0.7	0.1	5.0	3.9
Alabama	---	0.1	0.1	---	0.8
Alaska	---	0.5	0.2	---	9.7
Arizona	---	0.0	0.0	---	0.2
Arkansas	---	0.3	0.1	---	2.9
California	3.6	0.1	0.1	2.7	2.7
Colorado	1.1	0.1	0.0	1.3	1.0
Connecticut	---	0.0	0.2	---	1.2
Delaware	1.2	0.0	0.1	1.4	0.7
District of Columbia	5.1	1.4	0.1	32.1	19.9
Florida	0.6	1.2	0.1	7.1	3.4
Georgia	4.9	7.4	0.5	23.9	21.1
Hawaii	---	0.1	0.1	---	6.8
Idaho	0.6	0.1	0.0	0.5	0.4
Illinois	1.3	2.3	0.7	5.3	4.9
Indiana	0.5	0.1	0.1	0.6	0.8
Iowa	0.9	0.1	0.0	1.3	0.3
Kansas	0.6	0.0	0.1	2.6	2.0
Kentucky	1.2	0.1	0.0	4.3	3.6
Louisiana	---	0.0	0.0	---	0.1
Maine	---	0.2	0.1	---	0.3
Maryland	1.8	4.6	0.1	18.4	17.6
Massachusetts	---	0.1	0.1	---	1.0
Michigan	0.8	0.1	0.0	3.0	3.1
Minnesota	---	0.3	0.1	---	2.1
Mississippi	---	0.0	0.1	---	0.3
Missouri	0.6	0.7	0.1	4.9	6.8
Montana	0.8	0.1	0.1	2.8	2.9
Nebraska	0.1	0.4	0.0	2.4	0.9
Nevada	1.6	0.8	1.0	11.3	17.9
New Hampshire	8.4	1.3	0.2	10.9	2.9
New Jersey	---	0.1	0.0	---	0.6
New Mexico	2.0	1.8	0.1	6.5	4.5
New York (excluding NYC)	2.7	0.9	0.2	4.2	4.4
New York City	0.9	0.2	0.0	2.4	2.6
North Carolina	---	0.1	0.0	---	1.4
North Dakota	2.5	0.1	0.0	3.4	1.9
Ohio	1.8	1.4	0.1	7.6	11.0
Oklahoma	1.9	0.2	0.1	4.9	3.6
Oregon	0.5	0.4	0.0	0.7	1.6
Pennsylvania	1.6	0.3	0.3	4.8	6.1
Rhode Island	---	2.8	0.1	---	3.7
South Carolina	2.7	0.1	0.0	3.3	0.9
South Dakota	0.7	0.1	0.1	1.8	1.3
Tennessee	0.8	0.6	0.4	6.2	7.1
Texas	0.2	0.0	0.0	1.1	0.4
Utah	2.3	0.5	0.0	1.6	1.9
Vermont	1.2	0.4	0.0	1.2	0.4
Virginia	---	0.1	0.0	---	1.4
Washington	0.8	0.8	0.1	5.4	7.6
West Virginia	---	0.1	0.1	---	0.7
Wisconsin	---	0.0	0.1	---	1.8
Wyoming	1.1	0.0	-	1.2	0.7
Puerto Rico	0.2	0.0	0.5	0.8	0.2
Virgin Islands	---	3.9	0.9	---	6.1
Guam	---	1.1	0.2	---	0.9
American Samoa	---	-	---	---	---
Northern Marianas	3.7	99.9	2.8	35.9	20.7

See footnotes at end of table.

Table B. Percent of birth records on which specified items were not stated: United States and each state and territory, New York City and the District of Columbia, 2010 -- Con.
[By place of residence]

Area	Items common to both the 1989 and 2003 revisions of the U.S. Standard Certificate of Live Birth					
	Birthweight	5-minute Apgar score	Weight gain	Tobacco use		Method of Delivery [4]
				Unrevised [3]	Revised [2]	
Total of reporting areas [1]	0.1	0.5	5.0	2.9	1.2	0.2
Alabama	0.0	0.2	1.0	2.9	---	0.6
Alaska	0.1	0.4	9.6	1.4	---	5.0
Arizona	0.0	0.1	1.8	1.1	---	0.6
Arkansas	0.0	0.2	6.6	5.4	---	0.8
California	0.0	0.7	6.6	---	1.0	0.0
Colorado	0.0	0.2	2.9	---	0.2	0.0
Connecticut	0.0	0.2	1.0	1.3	---	0.3
Delaware	0.1	0.3	2.5	---	0.4	0.0
District of Columbia	0.2	0.2	8.7	---	8.0	0.1
Florida [5]	0.0	0.2	7.4	---	---	0.0
Georgia [6]	0.9	0.6	25.5	---	---	0.5
Hawaii	0.1	0.4	11.4	0.4	---	0.5
Idaho	0.1	0.4	0.6	---	0.1	0.0
Illinois	0.1	0.8	6.3	---	1.0	0.2
Indiana	0.1	0.3	1.5	---	0.2	0.0
Iowa	0.1	0.4	1.0	---	1.0	0.0
Kansas	0.1	0.5	2.2	---	0.4	-
Kentucky	0.0	0.2	3.2	---	0.9	0.1
Louisiana	0.0	0.1	1.0	---	---	0.2
Maine	0.1	0.2	0.7	2.4	---	0.3
Maryland	0.0	0.2	5.3	---	3.7	0.2
Massachusetts	0.1	0.1	1.4	0.6	---	0.5
Michigan [5]	0.1	0.3	5.1	---	---	0.0
Minnesota	0.1	0.3	4.5	3.4	---	0.5
Mississippi	0.0	0.4	2.2	3.4	---	0.6
Missouri	0.4	0.6	4.5	---	1.2	0.3
Montana	0.0	0.3	4.3	---	0.7	0.1
Nebraska	0.0	0.1	3.0	---	0.1	0.0
Nevada	0.0	0.2	6.2	---	2.2	-
New Hampshire	0.1	0.2	5.9	---	9.6	0.1
New Jersey	0.1	0.1	1.0	5.0	---	1.0
New Mexico	0.1	0.1	6.5	---	1.4	0.0
New York (excluding NYC)	0.2	0.6	4.3	---	1.9	0.6
New York City	0.0	0.2	4.2	---	0.5	0.3
North Carolina	0.1	0.2	3.2	---	---	0.6
North Dakota	0.0	0.1	1.6	---	1.8	0.0
Ohio	0.1	0.3	8.2	---	1.8	0.5
Oklahoma	0.1	0.2	2.6	---	1.9	0.0
Oregon	0.0	0.1	2.8	---	0.9	0.0
Pennsylvania	0.2	0.5	10.0	---	2.9	0.1
Rhode Island	0.0	0.4	15.3	3.9	---	0.3
South Carolina	0.1	0.2	2.9	---	4.9	0.1
South Dakota	0.1	0.3	1.9	---	1.1	0.0
Tennessee	0.1	1.7	7.4	---	0.8	0.0
Texas	0.0	1.3	1.0	---	0.1	0.0
Utah	0.0	0.2	3.7	---	0.4	0.0
Vermont	0.0	0.2	2.3	---	1.2	-
Virginia	0.1	0.1	0.7	3.8	---	0.6
Washington	0.2	0.3	6.4	---	0.8	-
West Virginia	0.1	0.3	0.9	6.3	---	0.6
Wisconsin	0.0	0.4	1.8	1.2	---	0.0
Wyoming	0.1	0.1	2.2	---	6.7	0.0
Puerto Rico	0.2	1.0	1.2	---	-	0.0
Virgin Islands	1.9	1.1	28.7	6.6	---	3.1
Guam	0.1	0.5	3.1	0.8	---	0.8
American Samoa	-	---	---	---	---	---
Northern Marianas	45.9	3.9	66.7	---	54.3	-

See footnotes at end of table.

Table B. Percent of birth records on which specified items were not stated: United States and each state and territory, New York City and the District of Columbia, 2010 -- Con.
[By place of residence]

Area	Items common to both the 1989 and 2003 revisions of the U.S. Standard Certificate of Live Birth						
	Risk Factors in this Pregnancy				Characteristics of Labor and Delivery		
	Diabetes	Pregnancy Associated Hypertension	Chronic Hypertension	Eclampsia	Meconium	Breech	Precipitous Labor
Total of reporting areas [1]	0.4	0.4	0.4	0.4	0.3	2.3	0.5
Alabama	0.1	0.1	0.1	0.1	0.2	0.3	0.2
Alaska	12.3	12.3	12.3	12.3	12.6	12.6	12.6
Arizona	-	-	-	-	0.0	0.0	0.0
Arkansas	0.0	0.0	0.0	0.0	0.0	0.2	0.0
California	0.0	0.0	0.0	0.0	0.0	7.2	0.0
Colorado	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Connecticut	0.3	0.3	0.3	0.3	0.0	0.0	0.0
Delaware	-	-	-	-	0.0	0.2	0.0
District of Columbia	1.2	1.2	1.2	1.2	5.2	0.1	1.5
Florida	0.3	0.3	0.3	0.3	0.1	0.6	0.3
Georgia	4.0	4.0	4.0	4.0	4.2	13.8	5.3
Hawaii	-	-	-	-	-	0.0	-
Idaho	0.1	0.1	0.1	---	0.1	0.1	0.1
Illinois	1.1	1.1	1.1	1.1	0.8	4.5	1.2
Indiana	0.0	0.0	0.0	0.0	0.0	1.2	0.0
Iowa	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kansas	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Kentucky	0.3	0.3	0.3	---	0.1	0.2	0.3
Louisiana	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maine	0.2	0.2	0.2	0.2	0.2	0.1	0.2
Maryland	0.1	0.1	0.1	0.1	0.2	4.7	0.2
Massachusetts	0.7	0.7	0.7	0.7	0.6	0.6	0.6
Michigan	1.1	1.1	1.1	---	0.3	0.9	1.3
Minnesota	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Mississippi	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Missouri	-	-	-	-	-	3.6	-
Montana	0.0	0.0	0.0	0.0	0.1	0.1	0.3
Nebraska	0.3	0.3	0.3	---	0.1	0.0	0.3
Nevada	-	-	-	-	-	0.0	-
New Hampshire	0.1	0.1	0.1	0.1	0.7	0.0	2.3
New Jersey	0.3	0.3	0.3	0.3	0.2	0.2	0.2
New Mexico	-	-	-	-	-	0.7	0.2
New York (excluding NYC)	0.4	0.4	0.4	0.4	0.0	0.5	1.2
New York City	0.6	0.6	0.6	---	0.3	0.4	0.8
North Carolina	0.0	0.0	0.0	0.0	0.0	0.1	0.0
North Dakota	-	-	-	-	-	0.3	-
Ohio	1.7	1.7	1.7	1.7	0.8	0.9	0.0
Oklahoma	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oregon	0.0	0.0	0.0	0.0	0.2	0.2	0.0
Pennsylvania	0.0	0.0	0.0	---	0.0	0.1	0.0
Rhode Island	1.1	1.1	1.1	1.1	1.2	1.2	1.2
South Carolina	0.0	0.0	0.0	---	0.0	0.1	0.1
South Dakota	0.1	0.1	0.1	0.1	-	0.0	0.0
Tennessee	0.0	0.0	0.0	---	0.0	0.0	0.0
Texas	0.0	0.0	0.0	0.0	0.0	3.2	0.0
Utah	-	-	-	-	-	0.0	-
Vermont	0.2	0.2	0.2	0.2	0.1	0.0	0.4
Virginia	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Washington	0.5	0.5	0.5	---	0.7	0.8	0.9
West Virginia	0.2	0.2	0.2	0.2	0.3	0.3	0.3
Wisconsin	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wyoming	0.0	0.0	0.0	0.0	0.0	-	0.0
Puerto Rico	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Virgin Islands	6.9	6.9	6.9	6.9	11.7	11.7	11.7
Guam	0.8	0.8	0.8	0.8	0.9	0.9	0.9
American Samoa	---	---	---	---	---	---	---
Northern Marianas	71.5	71.5	71.5	71.5	79.2	96.7	92.6

See footnotes at end of table.

Table B. Percent of birth records on which specified items were not stated: United States and each state and territory, New York City and the District of Columbia, 2010 -- Con.
[By place of residence]

Area	Items common to both the 1989 and 2003 revisions of the U.S. Standard Certificate of Live Birth						
	Obstetric Procedures		Congenital Anomalies				
	Induction of Labor	Tocolysis	Anencephaly	Spina bifida	Omphalocele/ Gastroschisis	Cleft Lip/ Palate	Down Syndrome
Total of reporting areas [1]	0.3	0.5	0.8	0.8	0.8	0.8	0.8
Alabama	0.2	0.3	0.2	0.2	0.2	0.2	0.2
Alaska	11.4	11.4	15.2	15.2	15.2	15.2	15.2
Arizona	-	-	0.0	0.0	0.0	0.0	0.0
Arkansas [7]	0.0	---	0.0	0.0	0.0	0.0	0.0
California	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Colorado	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Connecticut	0.0	0.0	0.4	0.4	0.4	0.4	0.4
Delaware [7]	0.0	---	0.0	0.0	0.0	0.0	0.0
District of Columbia	5.2	0.7	3.3	3.3	3.3	3.3	3.3
Florida	0.1	0.2	0.3	0.3	0.3	0.3	0.3
Georgia	4.2	6.6	5.5	5.5	5.5	5.5	5.5
Hawaii	-	-	-	-	-	-	-
Idaho	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Illinois	0.8	1.2	1.1	1.1	1.1	1.1	1.1
Indiana	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Iowa	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kansas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kentucky	0.1	0.2	0.2	0.2	0.2	0.2	0.2
Louisiana	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maine	0.1	0.2	0.5	0.5	0.5	0.5	0.5
Maryland	0.2	0.2	0.3	0.3	0.3	0.3	0.3
Massachusetts	0.2	0.2	0.9	0.9	0.9	0.9	0.9
Michigan	0.3	1.2	2.9	2.9	2.9	2.9	2.9
Minnesota	0.5	0.5	1.0	1.0	1.0	1.0	1.0
Mississippi	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Missouri	-	-	0.0	0.0	0.0	0.0	0.0
Montana	0.1	0.9	0.7	0.7	0.7	0.7	0.7
Nebraska	0.1	0.4	0.3	0.3	0.3	0.3	0.3
Nevada	-	-	0.0	0.0	0.0	0.0	0.0
New Hampshire	0.7	1.5	5.5	5.5	5.5	5.5	5.5
New Jersey	0.1	0.1	0.6	0.6	0.6	0.6	0.6
New Mexico [7]	-	---	-	-	-	-	-
New York (excluding NYC)	0.0	0.9	1.8	1.8	1.8	1.8	1.8
New York City	0.3	0.6	1.2	1.2	1.2	1.2	1.2
North Carolina	0.0	0.0	0.0	0.0	0.0	0.0	0.0
North Dakota	-	-	0.1	0.1	0.1	0.1	0.1
Ohio	0.8	0.0	3.5	3.5	3.5	3.5	3.5
Oklahoma	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oregon	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Pennsylvania	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rhode Island	1.0	1.0	4.4	4.4	4.4	4.4	4.4
South Carolina	0.0	0.1	0.1	0.1	0.1	0.1	0.1
South Dakota	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Tennessee	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Texas	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Utah	-	-	-	-	-	-	-
Vermont	0.1	0.4	0.6	0.6	0.6	0.6	0.6
Virginia	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Washington	0.7	1.1	3.0	3.0	3.0	3.0	3.0
West Virginia	0.2	0.2	0.8	0.8	0.8	0.8	0.8
Wisconsin	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wyoming	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Puerto Rico	0.0	-	0.0	0.0	0.0	0.0	0.0
Virgin Islands	5.1	5.1	9.9	9.9	9.9	9.9	9.9
Guam	1.0	1.0	1.7	1.7	1.7	1.7	1.7
American Samoa	---	---	---	---	---	---	---
Northern Marianas	79.2	94.2	90.8	90.8	90.8	90.8	90.8

See footnotes at end of table.

Table B. Percent of birth records on which specified items were not stated: United States and each state and territory, New York City and the District of Columbia, 2010 -- Con.
[By place of residence]

Area	Items exclusive to the 2003 US. Standard Certificate of Live Birth [3]					
	Pregnancy Risk Factors	Obstetric Procedures	Onset of Labor	Characteristics of Labor and Delivery	Abnormal Conditions of the Newborn	Congenital Anomalies
Total of reporting areas [1]	0.9	1.0	1.0	0.8	1.1	1.3
Alabama	---	---	---	---	---	---
Alaska	---	---	---	---	---	---
Arizona	---	---	---	---	---	---
Arkansas	---	---	---	---	---	---
California	0.1	0.1	0.1	0.1	0.1	0.1
Colorado	0.1	0.1	0.1	0.1	0.1	0.1
Connecticut	---	---	---	---	---	---
Delaware [8]	0.2	0.2	0.3	0.2	0.2	0.2
District of Columbia	4.8	4.3	5.0	8.7	6.3	6.8
Florida	0.4	0.4	0.5	0.2	0.3	0.5
Georgia [9]	4.2	6.7	5.4	4.4	4.8	5.7
Hawaii	---	---	---	---	---	---
Idaho	0.1	0.1	0.1	0.1	0.1	0.1
Illinois [9]	1.4	1.5	1.5	1.2	1.3	1.4
Indiana	0.0	0.0	0.0	0.0	0.0	0.0
Iowa	0.9	0.9	0.9	0.9	0.9	0.9
Kansas	0.1	0.0	0.0	0.1	0.1	0.1
Kentucky	0.9	0.8	0.9	0.7	0.8	0.8
Louisiana	---	---	---	---	---	---
Maine	---	---	---	---	---	---
Maryland [9]	1.4	1.4	1.5	1.5	1.5	1.5
Massachusetts	---	---	---	---	---	---
Michigan	1.3	1.4	1.5	0.5	2.4	3.1
Minnesota	---	---	---	---	---	---
Mississippi	---	---	---	---	---	---
Missouri	0.2	0.2	0.2	0.2	0.2	0.2
Montana	0.1	1.0	0.4	0.2	0.6	0.8
Nebraska	0.4	0.4	0.3	0.2	0.3	0.3
Nevada	0.2	0.2	0.2	0.2	0.2	0.2
New Hampshire	7.9	9.4	10.2	8.6	13.2	13.4
New Jersey	---	---	---	---	---	---
New Mexico	0.3	0.4	0.5	0.3	0.3	0.3
New York (excluding NYC)	2.2	2.7	3.0	1.9	3.1	3.6
New York City	1.1	1.0	1.2	0.7	1.3	1.6
North Carolina	---	---	---	---	---	---
North Dakota	1.8	1.8	1.8	1.8	1.8	1.8
Ohio [9]	2.8	1.2	1.2	2.0	3.0	4.7
Oklahoma	1.6	1.6	1.6	1.6	1.6	1.6
Oregon	0.0	0.1	0.1	0.2	0.1	0.1
Pennsylvania	0.9	0.9	0.9	0.9	0.9	0.9
Rhode Island	---	---	---	---	---	---
South Carolina	2.4	2.4	2.4	2.4	2.4	2.4
South Dakota	0.6	0.6	0.6	0.5	0.5	0.5
Tennessee	0.4	0.4	0.4	0.4	0.4	0.4
Texas	0.1	0.1	0.1	0.1	0.1	0.1
Utah	0.1	0.1	0.1	0.1	0.1	0.1
Vermont	0.9	1.0	1.1	0.8	1.2	1.3
Virginia	---	---	---	---	---	---
Washington	0.6	1.1	0.9	0.7	2.8	3.1
West Virginia	---	---	---	---	---	---
Wisconsin	---	---	---	---	---	---
Wyoming	0.1	0.1	0.1	0.1	0.1	0.1
Puerto Rico	0.0	-	0.0	0.0	0.0	0.0
Virgin Islands	---	---	---	---	---	---
Guam	---	---	---	---	---	---
American Samoa	---	---	---	---	---	---
Northern Marianas	71.6	94.3	92.7	79.3	91.1	90.9

See footnotes at end of table.

Table B. Percent of birth records on which specified items were not stated: United States and each state and territory, New York City and the District of Columbia, 2010 -- Con.
[By place of residence]

Area	Items exclusive to the 2003 US. Standard Certificate of Live Birth [3]		
	Method of Delivery		
	Fetal presentation	Final route and method of delivery	Trial of labor
Total of reporting areas [1]	3.4	0.6	1.5
Alabama	---	---	---
Alaska	---	---	---
Arizona	---	---	---
Arkansas	---	---	---
California	7.3	0.1	0.1
Colorado	0.1	0.1	0.3
Connecticut	---	---	---
Delaware	0.4	0.2	0.3
District of Columbia	3.7	3.6	15.7
Florida	0.8	0.2	0.7
Georgia	13.9	0.7	6.5
Hawaii	---	---	---
Idaho	0.1	0.1	0.1
Illinois	4.8	0.5	2.4
Indiana	1.3	0.1	0.6
Iowa	0.9	0.9	0.9
Kansas	0.1	0.0	0.0
Kentucky	0.8	0.7	0.7
Louisiana	---	---	---
Maine	---	---	---
Maryland	5.9	1.4	7.1
Massachusetts	---	---	---
Michigan	1.1	0.2	0.4
Minnesota	---	---	---
Mississippi	---	---	---
Missouri	3.8	0.5	1.3
Montana	0.1	0.1	0.1
Nebraska	0.1	0.1	0.1
Nevada	0.2	0.2	0.5
New Hampshire	7.9	7.9	7.9
New Jersey	---	---	---
New Mexico	1.0	0.3	0.4
New York (excluding NYC)	2.3	2.4	2.4
New York City	0.9	0.8	0.9
North Carolina	---	---	---
North Dakota	2.0	1.8	1.8
Ohio	2.1	1.6	1.7
Oklahoma	1.6	1.6	2.6
Oregon	0.2	0.0	0.1
Pennsylvania	1.0	1.0	3.0
Rhode Island	---	---	---
South Carolina	2.4	2.4	2.5
South Dakota	0.6	0.5	0.5
Tennessee	0.5	0.4	0.4
Texas	3.3	0.1	1.6
Utah	0.1	0.1	0.1
Vermont	0.7	0.7	0.8
Virginia	---	---	---
Washington	0.8	0.0	0.0
West Virginia	---	---	---
Wisconsin	---	---	---
Wyoming	0.0	0.1	0.6
Puerto Rico	0.0	0.0	2.3
Virgin Islands	---	---	---
Guam	---	---	---
American Samoa	---	---	---
Northern Marianas	96.8	0.1	3.1

See footnotes at end of table.

0.0 Quantity more than zero but less than 0.05.
---Data not available.
- Quantity zero.

[1] Excludes data for Puerto Rico, Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Marianas.

[2] Data are for states using the 2003 Standard Certificate of Live Birth. Births to residents of states using the 2003 Standard Certificate of Live Birth occurring in states using the 1989 Standard Certificate of Live Birth are coded as not stated for this item. See "Technical Notes."

[3] Data are for states using the 1989 Standard Certificate of Live Birth. Births to residents of states using the 1989 Standard Certificate of Live Birth occurring in states using the 2003 Standard Certificate of Live Birth are coded as not stated for this item. See "Technical Notes."

[4] Not stated levels for states which implemented the 2003 U.S. Standard Certificate of Live Birth are derived from the item "Final route and method of delivery" only.

[5] The Florida and Michigan tobacco use item is not consistent with the tobacco use items on either the 1989 or 2003 U.S Standard Certificates of Live Birth.

[6] Reliable data on tobacco use not available for Georgia for 2010.

[7] Reliable data on tocolysis not available for Arkansas, Delaware, and New Mexico for 2010 (see "Technical notes").

[8] Reliable data on steroids not available for Delaware for 2010 (see "Technical notes").

[9] Reliable data on external cephalic version not available for Georgia, Illinois, Maryland, and Ohio for 2010 (see "Technical notes").

Table C. Implementation of the 2003 U.S. Standard Certificate of Live Birth: Each state and territory, New York City, and the District of Columbia, 2003-2010

	Revised reporting area							
Year	2010	2009	2008	2007	2006	2005	2004	2003
Total	33 states and the District of Columbia[1]	28 states[1]	27 states[1]	22 states[1 2]	19 states[1 2]	12 states[1 2]	7 states[1 2]	2 states[1]
Alabama								
Alaska								
Arizona								
Arkansas								
California	X	X	X	X	X^			
Colorado	X	X	X	X^				
Connecticut								
Delaware	X	X	X	X	X^			
District of Columbia	X	X*						
Florida	X	X	X	X	X	X	X*	
Georgia	X	X	X	X*				
Hawaii								
Idaho	X	X	X	X	X	X	X^	
Illinois	X^							
Indiana	X	X	X	X^				
Iowa	X	X	X	X^				
Kansas	X	X	X	X	X	X^		
Kentucky	X	X	X	X	X	X	X^	
Louisiana	X*							
Maine								
Maryland	X^							
Massachusetts								
Michigan	X	X	X	X*				
Minnesota								
Mississippi								
Missouri	X^							
Montana	X	X	X^					
Nebraska	X	X	X	X	X	X^		
Nevada	X	X*						
New Hampshire	X	X	X	X	X	X	X*	
New Jersey								
New Mexico	X	X	X^					
New York (excluding NYC)	X	X	X	X	X	X	X^	
New York City	X	X	X^					
North Carolina	X*							
North Dakota	X	X	X	X	X^			
Ohio	X	X	X	X	X^			
Oklahoma	X	X*						
Oregon	X	X	X^					
Pennsylvania	X	X	X	X	X	X	X	X^
Rhode Island								
South Carolina	X	X	X	X	X	X	X^	
South Dakota	X	X	X	X	X^			
Tennessee	X	X	X	X	X	X	X^	
Texas	X	X	X	X	X	X^		

Utah	X	X^						
Vermont	X	X	X	X	X	X*		
Virginia								
Washington	X	X	X	X	X	X	X	X^
West Virginia								
Wisconsin								
Wyoming	X	X	X	X	X^			
Puerto Rico	X	X	X	X	X	X^		
Virgin Islands								
Guam								
American Samoa								
Northern Marianas	X^							

^ First year using 2003 U.S. Standard Certificate of Live Birth; revised as of January 1.

* Revised after January 1.

1 Excludes reporting areas that revised after January 1.

2 Excludes New York City

Table D. Percentage of live births by selected demographic and health characteristics: United States and total of 33 revised states and the District of Columbia, 2010

Characteristic of mother	33 states and the District of Columbia[1]	United States	
Race/Hispanic origin of mother			
Non-Hispanic white[2]	53.02	54.44	**
Non-Hispanic black[2]	13.94	14.85	**
Hispanic[3]	26.39	23.80	**
Mexican	17.28	15.06	**
Puerto Rican	1.51	1.67	**
Cuban	0.50	0.43	**
Central or South American	3.41	3.59	**
Other and Unknown Hispanic	3.70	3.04	**
American Indian or Alaska Native [4]	1.01	1.17	**
Asian or Pacific Islander	6.07	6.17	**
Unmarried Women	40.99	40.84	**
Age of Mother			
<20 years	9.42	9.31	**
20-24 years	23.85	23.80	
25-29 years	28.37	28.35	
30-34 years	23.89	24.06	**
35-39 years	11.59	11.62	
40-54 years	2.88	2.87	
Characteristic of Infant/Delivery			
Very preterm[5]	1.94	1.96	
Preterm[6]	11.90	11.99	**
Very low birthweight[7]	1.43	1.45	**
Low birthweight[8]	8.07	8.15	**
4,000 grams or more[9]	7.56	7.61	**
Multiple births[10,11]	33.91	34.52	**

** Difference significant at p = 0.05.

[1]California, Colorado, Delaware, District of Columbia, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Michigan, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Washington, and Wyoming.

[2]Race and Hispanic origin are reported separately on birth certificates. Race categories are consistent with the 1977 Office of Management and Budget (OMB) standards. All states in the 33-state reporting area and the District of Columbia reported multiple-race data for 2010. The multiple-race data for these were bridged to the single-race categories of the 1977 OMB standards for comparability with other states; see "Technical Notes."

[3]Includes persons of Hispanic origin of any race.

[4]Includes births to Aleuts and Eskimos.

[5]Born prior to 32 completed weeks of gestation.

[6]Born prior to 37 completed weeks of gestation.

[7]Birthweight of less than 1,500 grams (3 lb 4 oz)

[8]Birthweight of less than 2,500 grams (5 lb 8 oz).

[9]Equivalent to 8 lb 14 oz.

[10]Includes births in twin, triplet, and higher order multiple deliveries.

[11]The number of live births in multiple deliveries per 1,000 live births.

Table E. Comparability of selected data items from the 2003 U.S. Standard Certificate of Live Birth with items from the 1989 U.S. Standard Certificate of Live Birth

Item on 2003 U.S. Standard Certificate of Live Birth	*Comparable*	*Not comparable*	*New*
Race - Mother/Father	X [1]		
Hispanic origin - Mother/Father	X		
Education - Mother/Father		X	
Cigarette smoking during pregnancy		X	
Month prenatal care began		X	
Risk factors in this pregnancy			
Diabetes, Prepregnancy (Diagnosis prior to this pregnancy)	X[2]		
Diabetes, Gestational (Diagnosis in this pregnancy)	X[2]		
Hypertension, Prepregnancy (chronic)	X		
Hypertension, Gestational (PIH, preeclampsia)	X		
Hypertension, Eclampsia	X		
Previous preterm birth		X	
Other previous poor pregnancy outcome		X	
Mother had previous cesarean delivery		X	
Obstetric Procedures			
Cervical cerclage			X
Tocolysis	X		
External cephalic version - Successful			X
External cephalic version - Failed			X
Onset of Labor			
Premature rupture>=12 hrs		X	
Precipitous labor<3 hrs	X		
Prolonged labor>=20 hours		X	
Characteristics of Labor/Delivery			
Induction of labor	X		
Augmentation of labor		X	
Non-vertex presentation			X
Steroids (glucocorticoids) for fetal lung maturation			X
Antibiotics received by the mother during labor			X
Clinical chorioamnionitis diagnosed during labor		X	
Moderate/heavy meconium staining of the amniotic fluid	X		
Fetal intolerance of labor		X	
Epidural or spinal anesthesia during labor			X
Method of Delivery			
Forceps delivery attempted but unsuccessful?			X
Vacuum extraction delivery attempted but unsuccessful?			X
Cephalic Presentation			X
Breech Presentation	X [3]		
Other presentation	X [3]		
Final route and method of delivery Vaginal/Spontaneous	X[4]		
Final route and method of delivery Vaginal/Forceps	X[4]		
Final route and method of delivery Vaginal/Vacuum	X[4]		
Final route and method of delivery Cesarean	X[5]		

If cesarean, was trial of labor attempted?			X
NEWBORN INFORMATION			
Birthweight	X		
Apgar Score - 5 minute	X		
Plurality	X		
Abnormal Conditions of the Newborn			
Assisted ventilation required immediately following delivery		X	
Assisted ventilation > 6 hours		X	
NICU admission			X
Newborn given surfactant replacement therapy			X
Antibiotics received by the newborn for suspected neonatal sepsis			X
Seizure or serious neurologic dysfunction		X	
Significant birth injury		X	
Congenital Anomalies			
Anencephaly	X		
Meningomyelolcele/Spina Bifida	X		
Cyanotic congenital heart disease			X
Congenital diaphragmatic hernia	X		
Omphalocele	X[6]		
Gastroschisis	X[6]		
Limb reduction defect			X
Cleft lip with or without Cleft palate	X[7]		
Cleft Palate alone	X[7]		
Down Syndrome	X		
Infant Living at time of report			
Infant being breastfed?			
Down Syndrome - karyotype confirmed			X
Down Syndrome - karyotype pending			X
Suspected chromosomal disorder		X	
Suspected chromosomal disorder - karyotype confirmed			X
Suspected chromosomal disorder - karyotype pending			X
Hypospadias			X

[1] Thirty-eight states and the District of Columbia reported multiple race data for 2010. The multiple-race data for these states are bridged to the single race categories of the 1977 OMB standards for comparability with other states; See Detailed Technical Notes.

[2] Prepregnancy diabetes and Gestational diabetes may be combined to be consistent with the Diabetes item reported on the 1989 U.S. Standard Certificate of Live Birth.

[3] "Breech" and "Other" fetal presentations at birth may be combined to be consistent with the Breech/malpresentation item on the 1989 U.S. Standard Certificate of Live Birth.

[4] Information on whether the vaginal delivery following a previous cesarean delivery (VBAC) is not comparable.

[5] Information on whether the delivery was a primary or repeat cesarean is not comparable.

[6] "Omphalocele" and "Gastroschisis" may be combined to be consistent with the Omphalocele/Gastroschisis item on the 1989 U.S. Standard Certificate of Live Birth.

[7] Cleft lip with or without palate may be combined with Cleft lip alone to be consistent with the Cleft lip/palate item on the 1989 U.S. Standard Certificate of Live Birth.

Table F. Sources for the resident population and population including Armed Forces abroad: Birth and death-registration states, 1900-1932, and United States, 1900-2010

[2010] National Center for Health Statistics. Estimates of the April 1, 2010 resident population of the United States, by county, single-year of age (0, 1, 2, …, 85 years and over), bridged race, Hispanic origin, and sex. Prepared under a collaborative arrangement with the U.S. Census Bureau. Available from: http://www.cdc.gov/nchs/nvss/bridged_race.htm as of November 17, 2011, following release by the U.S. Census Bureau of the unbridged April 1, 2010 census counts on November 3, 2011.

[2010] U.S. Census Bureau. Unpublished tables. Intercensal estimates of the resident population by single year of age and sex for the United States: April 1, 2000 December 1, 2010 (Vintage 2011 Population Estimates). Population Division. 2012.

[2001-2009] National Center for Health Statistics. Intercensal estimates of the resident population of the United States for July 1, 2000-July 1, 2009, by year, single-year of age (0, 1, 2, .., 85 years and over), bridged race, Hispanic origin, and sex. Prepared under a collaborative arrangement with the U.S. Census Bureau. Available from: http://www.cdc.gov/nchs/nvss/bridged_race.htm as of November 17, 2011, following release by the U.S. Census Bureau of the unbridged intercensal estimates on November 3, 2011.

[2001-2009] U.S. Census Bureau. Unpublished tables. Intercensal estimates of the resident population by single year of age and sex for the United States: April 1, 2000 to April 1, 2010. Population Division. 2011.

[2000] National Center for Health Statistics. Estimates of the April 1, 2000, United States resident population by age, sex, race, and Hispanic origin, prepared under a collaborative arrangement with the U.S. Census Bureau. Available on the Internet at: http://www.cdc.gov/nchs/nvss/bridged_race/data_documentation.htm#april2000. 2003.

[1999] National Center for Health Statistics. Intercensal estimates of the July 1, 1999, United States resident population by state and county, age, sex, bridged race, and Hispanic origin, prepared under a collaborative arrangement with the U.S. Census Bureau. File icen1999.txt. Internet released, April 15, 2003. Available at: http://www.cdc.gov/nchs/nvss/bridged_race.htm.

[1998] National Center for Health Statistics. Intercensal estimates of the July 1, 1998, United States resident population by state and county, age, sex, bridged race, and Hispanic origin, prepared under a collaborative arrangement with the U.S. Census Bureau. File icen1998.txt. Internet released, April 15, 2003. Available at: http://www.cdc.gov/nchs/nvss/bridged_race.htm.

[1997] National Center for Health Statistics. Intercensal estimates of the July 1, 1997, United States resident population by state and county, age, sex, bridged race, and Hispanic origin, prepared under a collaborative arrangement with the U.S. Census Bureau. File icen1997.txt. Internet released, April 15, 2003. Available at: http://www.cdc.gov/nchs/nvss/bridged_race.htm.

[1996] National Center for Health Statistics. Intercensal estimates of the July 1, 1996, United States resident population by state and county, age, sex, bridged race, and Hispanic origin, prepared under a collaborative arrangement with the U.S. Census Bureau. File icen1996.txt. Internet released, April 15, 2003. Available at: http://www.cdc.gov/nchs/nvss/bridged_race.htm.

[1995] National Center for Health Statistics. Intercensal estimates of the July 1, 1995, United States resident population by state and county, age, sex, bridged race, and Hispanic origin, prepared under a collaborative arrangement with the U.S. Census Bureau. File icen1995.txt. Internet released, April 15, 2003. Available at: http://www.cdc.gov/nchs/nvss/bridged_race.htm.

[1994] National Center for Health Statistics. Intercensal estimates of the July 1, 1994, United States resident population by state and county, age, sex, bridged race, and Hispanic origin, prepared under a collaborative arrangement with the U.S. Census Bureau. File icen1994.txt. Internet released, April 15, 2003. Available at: http://www.cdc.gov/nchs/nvss/bridged_race.htm.

[1993] National Center for Health Statistics. Intercensal estimates of the July 1, 1993, United States resident population state and county, by age, sex, bridged race, and Hispanic origin, prepared under a collaborative arrangement with the U.S. Census Bureau. File icen1993.txt. Internet released, April 15, 2003. Available at: http://www.cdc.gov/nchs/nvss/bridged_race.htm.

[1992] National Center for Health Statistics. Intercensal estimates of the July 1, 1992, United States resident population by state and county, age, sex, bridged race, and Hispanic origin, prepared under a collaborative arrangement with the U.S. Census Bureau. File icen1992.txt. Internet released, April 15, 2003. Available at: http://www.cdc.gov/nchs/nvss/bridged_race.htm.

[1991] National Center for Health Statistics. Intercensal estimates of the July 1, 1991, United States resident population by state and county, age, sex, bridged race, and Hispanic origin, prepared under a collaborative arrangement with the U.S. Census Bureau. File icen1991.txt. Internet released, April 15, 2003. Available at: http://www.cdc.gov/nchs/nvss/bridged_race.htm.

Table G. Percentage net population under/over count, by age, sex, and race/Hispanic origin: United States, April 1, 2010	
Characteristic	Estimate (%)
Total	-0.01
Age/sex	
10–17 Male and female	-0.97
18–29 Male	1.21
18–29 Female	-0.28
30–49 Male	3.57
30–49 Female	-0.42
50 years and over male	-0.32
50 years and over female	-2.35
Race/Hispanic origin	
Non-Hispanic white	-0.84
Non-Hispanic black	2.07
Hispanic	1.54

SOURCE: Mule T. Census Coverage Measurement Estimation Report: Summary of Estimates of Coverage for Persons in the United States. DSSD 2010 Census Coverage Measurement Memorandum Series #2010-G-01. Washington: U.S. Census Bureau. May 22, 2012. Available from https://www.census.gov/coverage_measurement/pdfs/g01.pdf.

Table H. Lower and upper 95 percent and 96 percent confidence limit factors for a birth rate based on a Poisson variable of 1 through 99 births, *B*

B	L(1- α=.95,*B*)	U(1- α =.95,*B*)	L(1- α =.96,*B*)	U(1- α =.96,*B*)
1	0.02532	5.57164	0.02020	5.83392
2	0.12110	3.61234	0.10735	3.75830
3	0.20622	2.92242	0.18907	3.02804
4	0.27247	2.56040	0.25406	2.64510
5	0.32470	2.33367	0.30591	2.40540
6	0.36698	2.17658	0.34819	2.23940
7	0.40205	2.06038	0.38344	2.11666
8	0.43173	1.97040	0.41339	2.02164
9	0.45726	1.89831	0.43923	1.94553
10	0.47954	1.83904	0.46183	1.88297
11	0.49920	1.78928	0.48182	1.83047
12	0.51671	1.74680	0.49966	1.78566
13	0.53246	1.71003	0.51571	1.74688
14	0.54671	1.67783	0.53027	1.71292
15	0.55969	1.64935	0.54354	1.68289
16	0.57159	1.62394	0.55571	1.65610
17	0.58254	1.60110	0.56692	1.63203
18	0.59266	1.58043	0.57730	1.61024
19	0.60207	1.56162	0.58695	1.59042
20	0.61083	1.54442	0.59594	1.57230
21	0.61902	1.52861	0.60435	1.55563
22	0.62669	1.51401	0.61224	1.54026
23	0.63391	1.50049	0.61966	1.52602
24	0.64072	1.48792	0.62666	1.51278
25	0.64715	1.47620	0.63328	1.50043
26	0.65323	1.46523	0.63954	1.48888
27	0.65901	1.45495	0.64549	1.47805
28	0.66449	1.44528	0.65114	1.46787
29	0.66972	1.43617	0.65652	1.45827
30	0.67470	1.42756	0.66166	1.44922
31	0.67945	1.41942	0.66656	1.44064
32	0.68400	1.41170	0.67125	1.43252
33	0.68835	1.40437	0.67575	1.42480
34	0.69253	1.39740	0.68005	1.41746
35	0.69654	1.39076	0.68419	1.41047
36	0.70039	1.38442	0.68817	1.40380
37	0.70409	1.37837	0.69199	1.39743
38	0.70766	1.37258	0.69568	1.39134
39	0.71110	1.36703	0.69923	1.38550
40	0.71441	1.36172	0.70266	1.37991
41	0.71762	1.35661	0.70597	1.37454
42	0.72071	1.35171	0.70917	1.36938
43	0.72370	1.34699	0.71227	1.36442
44	0.72660	1.34245	0.71526	1.35964
45	0.72941	1.33808	0.71816	1.35504
46	0.73213	1.33386	0.72098	1.35060
47	0.73476	1.32979	0.72370	1.34632
48	0.73732	1.32585	0.72635	1.34218
49	0.73981	1.32205	0.72892	1.33818
50	0.74222	1.31838	0.73142	1.33431

Table H. Lower and upper 95 percent and 96 percent confidence limit factors for a birth rate based on a Poisson variable of 1 through 99 births, *B* --Con.

B	L(1- α=.95,*B*)	U(1- α =.95,*B*)	L(1- α =.96,*B*)	U(1- α =.96,*B*)
51	0.74457	1.31482	0.73385	1.33057
52	0.74685	1.31137	0.73621	1.32694
53	0.74907	1.30802	0.73851	1.32342
54	0.75123	1.30478	0.74075	1.32002
55	0.75334	1.30164	0.74293	1.31671
56	0.75539	1.29858	0.74506	1.31349
57	0.75739	1.29562	0.74713	1.31037
58	0.75934	1.29273	0.74916	1.30734
59	0.76125	1.28993	0.75113	1.30439
60	0.76311	1.28720	0.75306	1.30152
61	0.76492	1.28454	0.75494	1.29873
62	0.76669	1.28195	0.75678	1.29601
63	0.76843	1.27943	0.75857	1.29336
64	0.77012	1.27698	0.76033	1.29077
65	0.77178	1.27458	0.76205	1.28826
66	0.77340	1.27225	0.76373	1.28580
67	0.77499	1.26996	0.76537	1.28340
68	0.77654	1.26774	0.76698	1.28106
69	0.77806	1.26556	0.76856	1.27877
70	0.77955	1.26344	0.77011	1.27654
71	0.78101	1.26136	0.77162	1.27436
72	0.78244	1.25933	0.77310	1.27223
73	0.78384	1.25735	0.77456	1.27014
74	0.78522	1.25541	0.77598	1.26810
75	0.78656	1.25351	0.77738	1.26610
76	0.78789	1.25165	0.77876	1.26415
77	0.78918	1.24983	0.78010	1.26223
78	0.79046	1.24805	0.78143	1.26036
79	0.79171	1.24630	0.78272	1.25852
80	0.79294	1.24459	0.78400	1.25672
81	0.79414	1.24291	0.78525	1.25496
82	0.79533	1.24126	0.78648	1.25323
83	0.79649	1.23965	0.78769	1.25153
84	0.79764	1.23807	0.78888	1.24987
85	0.79876	1.23652	0.79005	1.24824
86	0.79987	1.23499	0.79120	1.24664
87	0.80096	1.23350	0.79233	1.24507
88	0.80203	1.23203	0.79344	1.24352
89	0.80308	1.23059	0.79453	1.24201
90	0.80412	1.22917	0.79561	1.24052
91	0.80514	1.22778	0.79667	1.23906
92	0.80614	1.22641	0.79771	1.23762
93	0.80713	1.22507	0.79874	1.23621
94	0.80810	1.22375	0.79975	1.23482
95	0.80906	1.22245	0.80074	1.23345
96	0.81000	1.22117	0.80172	1.23211
97	0.81093	1.21992	0.80269	1.23079
98	0.81185	1.21868	0.80364	1.22949
99	0.81275	1.21746	0.80458	1.22822

Table 1. Estimated total population, by race and Hispanic origin and estimated female population, by age and race and Hispanic origin of woman: United States, 2010

[Populations enumerated/estimated as of April 1]

Race and Hispanic origin		Total population	Female population										
			15-44 years	10-14 years	15-19 years			20-24 years	25-29 years	30-34 years	35-39 years	40-44 years	45-49 years
					Total	15-17 years	18-19 years						
All races and origins		308,745,538	62,374,964	10,097,332	10,736,677	6,298,045	4,438,632	10,571,823	10,466,258	9,965,599	10,137,620	10,496,987	11,499,506
White	Total1	245,423,340	47,645,748	7,699,666	8,115,655	4,768,485	3,347,170	8,037,373	7,982,776	7,569,160	7,751,513	8,189,271	9,152,204
	Non-Hispanic[2]	200,127,372	37,116,749	5,731,115	6,175,466	3,603,474	2,571,992	6,250,991	6,173,965	5,798,092	6,048,449	6,669,786	7,796,240
Black	Total1	42,065,334	9,596,107	1,670,740	1,857,418	1,088,056	769,362	1,711,018	1,571,980	1,494,106	1,476,350	1,485,235	1,565,712
	Non-Hispanic[2]	39,437,133	8,947,220	1,546,205	1,731,376	1,014,770	716,606	1,587,829	1,454,543	1,384,808	1,384,151	1,404,513	1,493,767
American Indian or Alaska Native	Total[1]	4,263,538	962,196	183,644	191,284	113,726	77,558	173,082	164,338	151,185	143,864	138,443	143,116
Asian or Pacific Islander	Total[1]	16,993,326	4,170,913	543,282	572,320	327,778	244,542	650,350	747,164	751,148	765,893	684,038	638,474
Hispanic[3]	Total	50,477,594	11,786,165	2,212,898	2,186,082	1,309,435	876,647	2,019,978	2,034,337	1,981,433	1,885,588	1,678,747	1,497,105
	Mexican	33,068,798	7,691,422	1,529,548	1,462,817	890,810	572,007	1,389,138	1,304,739	1,296,072	1,204,137	1,034,519	847310
	Puerto Rican	4,559,663	1,076,297	211,622	229,687	131,306	98,381	137,439	197,338	177,561	178,217	156,055	150488
	Cuban	1,879,763	383,140	64,503	42,787	29,161	13,626	69,989	76,162	56,369	73,760	64,073	79,876
	Other Hispan	10,969,371	2,635,304	407,225	450,790	258,157	192,633	423,412	456,098	451,431	429,474	424,099	419,431

1 Persons of Hispanic origin are included for this race group.
2 Persons of Hispanic origin may be of any race.
3 Includes all persons of Hispanic origin of any race.
4 Includes Central and South American and other and unknown Hispanic.

NOTES: Population count estimates are based on the 2010 census; see "Technical Notes." Race categories are consistent with the 1977 Office of Management and Budget (OMB) standards. Multiple-race population estimates were bridged to the single race categories of the 1977 OMB standards for comparability with the birth data; see "Technical Notes."

SOURCE: U.S. Census Bureau. See references 44 and 50 in Final Report and unpublished estimates from NCHS.

Table 2. Estimated total population, female population aged 15-44 years, and age-specific female population: United States, each state, and territory: April 1, 2010

Geographic Area	Total population	Female population										
		15-44 years	10-14 years	15-19 years			20-24 years	25-29 years	30-34 years	35-39 years	40-44 years	45-49 years
				Total	15-17 years	18-19 years						
United States	308,745,538	62,374,964	10,097,332	10,736,677	6,298,045	4,438,632	10,571,823	10,466,258	9,965,599	10,137,620	10,496,987	11,499,506
Alabama	4,779,736	960,620	156,238	168,320	96,991	71,329	167,802	157,318	151,464	157,352	158,364	177,266
Alaska	710,231	143,229	24,669	24,962	15,354	9,608	24,713	26,112	22,845	22,102	22,495	26,328
Arizona	6,392,017	1,262,557	219,669	224,302	131,854	92,448	213,022	214,390	204,472	205,469	200,902	214,523
Arkansas	2,915,918	569,446	96,663	99,627	58,130	41,497	98,849	95,998	91,462	92,130	91,380	104,162
California	37,253,956	7,876,871	1,265,015	1,368,858	809,880	558,978	1,325,164	1,335,711	1,269,121	1,282,209	1,295,808	1,347,835
Colorado	5,029,196	1,025,085	162,462	163,745	97,252	66,493	166,850	180,452	172,502	171,255	170,281	186,487
Connecticut	3,574,097	691,265	117,341	121,885	74,039	47,846	110,781	106,159	104,194	113,764	134,482	149,515
Delaware	897,934	179,232	27,895	31,931	17,855	14,076	31,374	28,884	27,405	28,270	31,368	34,792
District of Columbia	601,723	162,314	12,400	20,968	8,497	12,471	35,309	37,482	28,479	21,478	18,598	19,005
Florida	18,801,310	3,560,982	552,158	597,095	348,219	248,876	601,695	584,330	555,079	593,326	629,457	709,867
Georgia	9,687,653	2,073,006	337,107	347,065	204,720	142,345	335,603	340,104	337,246	357,605	355,383	369,524
Hawaii	1,360,301	262,107	39,840	41,404	25,064	16,340	43,848	46,619	43,110	42,762	44,364	47,574
Idaho	1,567,582	306,303	56,851	56,423	33,362	23,061	53,427	51,916	50,025	47,696	46,816	52,014
Illinois	12,830,632	2,631,753	430,288	448,356	269,999	178,357	431,451	453,386	431,902	429,314	437,344	476,671
Indiana	6,483,802	1,287,393	221,211	232,025	134,640	97,385	223,758	208,719	203,102	208,104	211,685	239,066
Iowa	3,046,355	576,692	97,577	105,598	60,327	45,271	103,883	96,334	90,713	87,574	92,590	108,606
Kansas	2,853,118	554,584	96,728	98,459	57,952	40,507	99,004	96,706	88,602	85,288	86,525	101,631
Kentucky	4,339,367	854,846	138,341	144,688	84,346	60,342	142,536	141,589	138,852	141,653	145,528	163,776
Louisiana	4,533,372	928,335	149,964	161,032	93,158	67,874	169,019	165,999	147,388	138,935	145,962	165,973
Maine	1,328,361	241,923	38,518	42,769	25,175	17,594	39,220	36,536	36,281	40,603	46,514	54,758
Maryland	5,773,552	1,193,402	185,961	197,992	118,328	79,664	193,775	199,325	189,215	195,866	217,229	239,616
Massachusetts	6,547,629	1,350,576	198,194	227,876	126,708	101,168	239,412	223,270	205,278	214,438	240,302	263,497
Michigan	9,883,640	1,918,594	329,658	360,122	210,761	149,361	330,503	294,260	289,056	309,591	335,062	376,834
Minnesota	5,303,925	1,045,681	171,986	179,235	107,400	71,835	174,926	185,124	168,351	162,375	175,670	202,615
Mississippi	2,967,297	604,036	101,642	110,474	64,029	46,445	105,461	100,472	95,710	96,004	95,915	107,098
Missouri	5,988,927	1,176,684	193,712	206,847	120,445	86,402	205,496	201,801	185,922	184,926	191,692	224,667
Montana	989,415	179,670	29,504	32,209	19,023	13,186	32,199	30,988	28,532	27,220	28,522	35,787
Nebraska	1,826,341	355,031	60,020	62,897	36,734	26,163	63,044	63,185	57,015	54,318	54,572	64,320
Nevada	2,700,551	549,924	89,501	88,527	54,039	34,488	86,361	96,343	92,840	93,687	92,166	94,266
New Hampshire	1,316,470	250,133	41,026	45,852	26,712	19,140	41,448	36,183	36,050	41,596	49,004	57,497
New Jersey	8,791,894	1,738,419	287,019	288,755	180,838	107,917	261,808	275,364	281,296	298,981	332,215	359,903
New Mexico	2,059,179	398,587	69,670	73,069	43,198	29,871	69,396	68,259	62,981	61,911	62,971	73,420
New York	19,378,102	4,047,947	592,213	666,730	386,899	279,831	698,933	699,974	649,401	640,349	692,560	749,240
North Carolina	9,535,483	1,949,350	308,309	321,320	185,809	135,511	324,925	315,537	314,750	335,162	337,656	357,321
North Dakota	672,591	129,143	19,429	22,848	12,324	10,524	27,426	23,145	19,288	17,856	18,580	22,919
Ohio	11,536,504	2,235,171	378,547	402,707	237,669	165,038	378,914	360,793	347,242	362,042	383,473	434,709
Oklahoma	3,751,351	736,629	123,404	128,840	74,185	54,655	131,308	129,829	118,104	115,296	113,252	131,426
Oregon	3,831,074	754,077	118,435	124,183	72,391	51,792	124,587	131,397	127,972	123,336	122,602	132,278
Pennsylvania	12,702,379	2,442,538	385,924	442,601	251,182	191,419	432,260	388,958	364,911	384,115	429,693	485,220
Rhode Island	1,052,567	214,647	31,151	39,889	20,688	19,201	40,938	32,673	31,107	32,545	37,495	41,865
South Carolina	4,625,364	928,310	145,120	160,739	90,299	70,440	163,948	152,758	144,797	150,777	155,291	170,918
South Dakota	814,180	152,353	26,282	27,946	16,343	11,603	27,933	26,612	24,234	22,490	23,138	28,566
Tennessee	6,346,105	1,274,350	203,902	214,184	125,133	89,051	213,339	210,686	204,785	213,862	217,494	239,001
Texas	25,145,561	5,326,162	919,017	914,438	547,814	366,624	884,726	914,073	877,547	887,448	847,930	885,604
Utah	2,763,885	602,120	110,788	109,363	62,619	46,744	112,912	111,128	105,641	87,589	75,487	77,380
Vermont	625,741	118,297	18,286	22,353	12,186	10,167	21,169	17,728	17,273	18,376	21,398	25,596
Virginia	8,001,024	1,652,698	249,622	269,463	156,210	113,253	278,050	280,372	264,423	271,926	288,464	316,166
Washington	6,724,540	1,355,704	213,516	224,551	132,892	91,659	223,381	235,384	223,520	221,757	227,111	246,402
West Virginia	1,852,994	341,981	53,501	58,233	32,903	25,330	57,279	53,371	55,433	58,024	59,641	67,155
Wisconsin	5,686,986	1,097,595	183,695	194,406	114,824	79,582	189,655	182,998	171,227	170,709	188,600	219,088
Wyoming	563,626	106,612	17,363	18,516	10,646	7,870	19,003	19,524	17,454	16,159	15,956	19,759
Puerto Rico	3,725,789	776,331	131,282	139,406	83,131	56,275	130,273	125,581	128,465	125,289	127,317	132,516
Virgin Islands	106,267	21,048	3,509	3,702	2,284	1,418	2,926	3,160	3,090	3,985	4,185	4,392
Guam	159,434	34,467	7,040	6,870	4,201	2,669	6,217	5,388	5,128	5,494	5,370	5,272
American Samoa	55,467	13,193	2,550	3,493	2,220	1,273	2,277	1,834	1,666	1,834	2,089	2,014
Northern Marianas	53,517	14,520	1,810	2,098	1,200	898	2,143	3,893	2,588	1,827	1,971	2,162

SOURCE: U.S. Census Bureau. See reference 50, 51, 52. in Final Report.

Table 3. Population of birth- and death-registration states, 1900–1932, and United States, 1900-2010

[Population enumerated as of April 1 for 1940, 1950, 1960, 1970, 1980, 1990, 2000, and 2010 and estimated as of July 1 for all other years]

Year	United States 1/		Year	United States 1/		Birth-registration States		Death-registration States	
	Population including Armed Forces abroad	Population residing in area		Population including Armed Forces abroad	Population residing in area	Number of States 2/	Population residing in area	Number of States 2/	Population residing in area
2010	309,178,489	308,745,538	1953	159,565,000	158,242,000				
2009	307,204,385	306,771,529	1952	156,954,000	155,687,000				
2008	304,516,881	304,093,966	1951	154,287,000	153,310,000				
2007	301,655,229	301,231,207	1950	151,132,000	150,697,361	. .	. . .	. . .	. . .
2006	298,782,525	298,379,912	1949	149,188,000	148,665,000	. .	. . .	. . .	. . .
2005	295,854,681	295,516,599	1948	146,631,000	146,093,000	. .	. . .	. . .	. . .
2004	293,056,411	292,805,298	1947	144,126,000	143,446,000	. .	. . .	. . .	. . .
2003	290,325,300	290,107,933	1946	141,389,000	140,054,000	. .	. . .	. . .	. . .
2002	287,856,691	287,625,193	1945	139,928,000	132,481,000	. .	. . .	. . .	. . .
2001	285,196,068	284,968,955	1944	138,397,000	132,885,000	. .	. . .	. . .	. . .
2000	281,652,000	281,421,906	1943	136,739,000	134,245,000	. .	. . .	. . .	. . .
1999	279,294,713	279,040,168	1942	134,860,000	133,920,000	. .	. . .	. . .	. . .
1998	276,115,288	275,854,104	1941	133,402,000	133,121,000	. .	. . .	. . .	. . .
1997	272,911,760	272,646,925	1940	131,820,000	131,669,275	. .	. . .	. . .	. . .
1996	269,667,391	269,394,284	1939	131,028,000	130,879,718	. .	. . .	. . .	. . .
1995	266,557,091	266,278,393	1938	129,969,000	129,824,939	. .	. . .	. . .	. . .
1994	263,435,673	263,125,821	1937	128,961,000	128,824,829	. .	. . .	. . .	. . .
1993	260,255,352	259,918,588	1936	128,181,000	128,053,180	. .	. . .	. . .	. . .
1992	256,894,189	256,514,224	1935	127,362,000	127,250,232	. .	. . .	. . .	. . .
1991	253,492,503	252,980,941	1934	126,485,000	126,373,773	. .	. . .	. . .	. . .
1990	249,225,000	248,709,873	1933	125,690,000	125,578,763	. .	. . .	. . .	. . .
1989	247,342,000	246,819,000	1932	124,949,000	124,840,471	47	118,903,899	47	118,903,899
1988	245,021,000	244,499,000	1931	124,149,000	124,039,648	46	117,455,229	47	118,148,987
1987	242,804,000	242,289,000	1930	123,188,000	123,076,741	46	116,544,946	47	117,238,278
1986	240,651,000	240,133,000	1929		121,769,939	46	115,317,450	46	115,317,450
1985	238,466,000	237,924,000	1928		120,501,115	44	113,636,160	44	113,636,160
1984	236,348,000	235,825,000	1927		119,038,062	40	104,320,830	42	107,084,532
1983	234,307,000	233,792,000	1926		117,399,225	35	90,400,590	41	103,822,683
1982	232,188,000	231,664,000	1925		115,831,963	33	88,294,564	40	102,031,555
1981	229,966,000	229,466,000	1924		114,113,463	33	87,000,295	39	99,318,098
1980	227,061,000	226,545,805	1923		111,949,945	30	81,072,123	38	96,788,197
1979	225,055,000	224,567,000	1922		110,054,778	30	79,560,746	37	92,702,901
1978	222,585,000	222,095,000	1921		108,541,489	27	70,807,090	34	87,814,447
1977	220,239,000	219,760,000	1920		106,466,420	23	63,597,307	34	86,079,263
1976	218,035,000	217,563,000	1919	105,063,000	104,512,110	22	61,212,076	33	83,157,982
1975	215,973,000	215,465,000	1918	104,550,000	103,202,801	20	55,153,782	30	79,008,412
1974	213,854,000	213,342,000	1917	103,414,000	103,265,913	20	55,197,952	27	70,234,775
1973	211,909,000	211,357,000	1916		101,965,984	11	32,944,013	26	66,971,177
1972	209,896,000	209,284,000	1915		100,549,013	10	31,096,697	24	61,894,847
1971	207,661,000	206,827,000	1914		99,117,567	. .	. . .	24	60,963,309
1970	204,270,000	203,211,926	1913		97,226,814	. .	. . .	23	58,156,740
1969	202,677,000	201,385,000	1912		95,331,300	. .	. . .	22	54,847,700
1968	200,706,000	199,399,000	1911		93,867,814	. .	. . .	22	53,929,644
1967	198,712,000	197,457,000	1910		92,406,536	. .	. . .	20	47,470,437
1966	196,560,000	195,576,000	1909		90,491,525	. .	. . .	18	44,223,513
1965	194,303,000	193,526,000	1908		88,708,976	. .	. . .	17	38,634,759
1964	191,889,000	191,141,000	1907		87,000,271	. .	. . .	15	34,552,837
1963	189,242,000	188,483,000	1906		85,436,556	. .	. . .	15	33,782,288
1962	186,538,000	185,771,000	1905		83,819,666	. .	. . .	10	21,767,980
1961	183,691,000	182,992,000	1904		82,164,974	. .	. . .	10	21,332,076
1960	179,933,000	179,323,175	1903		80,632,152	. .	. . .	10	20,943,222
1959	177,264,000	176,513,000	1902		79,160,196	. .	. . .	10	20,582,907

1958	174,141,000	173,320,000	1901		77,585,128	. .	. . .	10	20,237,453
1957	171,274,000	170,371,000	1900		76,094,134	. .	. . .	10	19,965,446
1956	168,221,000	167,306,000							
1955	165,275,000	164,308,000							
1954	162,391,000	161,164,000							

- - - Data not available.
... Category not applicable.

1/ Alaska included beginning 1959 and Hawaii, 1960.
2/ The District of Columbia is not included in "Number of States," but it is represented in all data shown for each year.
SOURCE: Published and unpublished data from the U.S. Census Bureau; see text and Table F.
U.S. Census Bureau provides monthly population estimates of resident population plus armed forces overseas, by single year of age, sex, race, and Hispanic origin for the United States: April 1, 2010 to July 1, 2011 (Vintage 2011). May 2012. Available from: http://www.census.gov/popest/data/national/asrh/2011/2011-nat-af.html.
Footnote: Revised population estimates of the resident population plus armed forces overseas from 2001 through 2009 were prepared by NCHS staff.

Data on race of mother presented in the following **Documentation Tables 1 through 11** are consistent with the 1997 OMB standards [31]. The number of births by race of mother differ somewhat from those shown in "Births: Final Data for 2010" [1], which are based on the 1977 OMB standards [30]. See previous section on "Hispanic origin and race". Also, please note that data from reporting areas that revised after January 1, 2010 (Louisiana and North Carolina) are not included in **Documentation Tables 1 through 11.**

Documentation Table 1. Number and percentage of live births by race of mother: 36 states and the District of Columbia, 2010

Race	Number	Percentage
All races [1]	3,154,659	100.0
One race	3,075,456	97.9
White	2,407,567	76.7
Black	449,284	14.3
American Indian and Alaska Native (AIAN)	28,151	0.9
Asian	180,791	5.8
Native Hawaiian and Other Pacific Islander (	9,663	0.3
More than one race	64,854	2.1
Two races	57,596	1.8
Black and White	19,931	0.6
Black and AIAN	2,279	0.1
Black and Asian	1,667	0.1
Black and NHOPI	372	0.0
AIAN and White	14,156	0.5
AIAN and Asian	271	0.0
AIAN and NHOPI	106	0.0
Asian and White	14,046	0.4
Asian and NHOPI	2,365	0.1
NHOPI and White	2,403	0.1
Three races	6,839	0.2
Black, AIAN and White	2,279	0.1
Black AIAN and Asian	100	0.0
Black, AIAN and NHOPI	25	0.0
Black, Asian and White	424	0.0
Black, Asian and NHOPI	73	0.0
Black, NHOPI, and White	93	0.0
AIAN, Asian and White	433	0.0
AIAN, NHOPI and White	130	0.0
AIAN, Asian and NHOPI	45	0.0
Asian, NHOPI and White	3,237	0.1
Four races	402	0.0
Black, AIAN, Asian and White	96	0.0
Black, AIAN, Asian, and NHOPI	7	*
Black, AIAN, NHOPI and White	17	*
Black, Asian, NHOPI and White	46	0.0
AIAN, Asian, NHOPI and White	236	0.0
Five races		
Black, AIAN, Asian, NHOPI and White	17	*

0.0 Quantity more than zero but less than 0.5.

***** Figure does not meet standards of reliability or precision: based on fewer than 20 births in the numerator.

[1] Includes all births to residents of the states that reported multiple-race for the entire year. Percentages are based on the number of births occurring in the states that reported multiple-race for the entire year to residents of the states. Births that occurred in states that did not report multiple race to residents of the multiple-race reporting states are not shown separately but are included in the total.

NOTES: Race and Hispanic origin are reported separately on birth certificates. Race categories are consistent with the 1997 Office of Management and Budget standards. Thirty-eight states and the District of Columbia reported multiple race data for 2010. This table excludes data for Louisiana and North Carolina, which reported multiple-race data in 2010 but after January 1. In this table all women, including Hispanic women, are classified only according to their race.

Documentation Table 2. Educational attainment of mother, by age and race and Hispanic origin of mother: Total of 33 reporting states and the District of Columbia, 2010

Educational attainment and race and Hispanic origin of mother	All ages	Under 20 years	20-24 years	25-29 years	30-34 years	35-39 years	40-54 years
All races 1							
				Percent			
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
12th grade or less with no diploma	19.9	54.6	23.4	15.4	12.1	12.9	14.0
8th grade or less	5.0	5.2	4.3	4.9	5.0	6.0	7.1
9th-12th grade with no diploma	14.9	49.4	19.1	10.5	7.1	6.9	6.9
High school graduate 2	25.7	34.7	38.9	24.1	16.6	15.5	16.5
Some college credit, but no degree	20.6	10.4	28.1	23.2	17.1	15.5	15.3
Associate's degree 3	7.1	0.3	5.0	9.4	8.6	8.2	7.9
Bachelor’s degree 4	17.4	0.0	4.4	20.7	27.6	27.4	26.5
Master’s degree 5	7.3	*	0.3	6.1	14.0	15.0	14.0
Doctorate or professional degree 6	2.1	*	0.0	1.1	3.9	5.5	5.8
				Number			
All births	3,055,884	287,888	728,907	866,867	730,017	354,202	88,003
Not stated 7	51,986	4,212	10,352	13,700	13,244	7,738	2,740
White 8							
				Percent			
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
12th grade or less with no diploma	10.2	47.6	16.3	6.6	3.5	3.3	3.8
8th grade or less	1.4	3.2	2.0	1.2	0.9	1.1	1.6
9th-12th grade with no diploma	8.7	44.3	14.3	5.4	2.6	2.2	2.3
High school graduate 2	22.8	39.7	39.2	21.0	13.2	12.0	13.1
Some college credit, but no degree	21.9	12.4	31.2	24.2	17.2	16.0	16.0
Associate's degree 3	8.9	0.3	6.7	11.6	9.7	9.3	8.9
Bachelor’s degree 4	23.6	0.0	6.2	27.1	34.2	33.8	33.0
Master’s degree 5	10.0	*	0.4	8.0	17.6	19.3	18.1
Doctorate or professional degree 6	2.6	*	0.0	1.4	4.6	6.4	7.1
				Number			
All births	1,573,540	105,476	341,592	475,924	414,496	189,201	46,851
Not stated 7	10,567	672	2,011	2,862	2,799	1,645	578
Black 8							
				Percent			
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
12th grade or less with no diploma	21.5	53.9	20.4	14.6	11.9	10.9	12.6
8th grade or less	1.8	3.2	1.1	1.5	1.7	2.2	3.4
9th-12th grade with no diploma	19.7	50.7	19.3	13.1	10.1	8.8	9.2
High school graduate 2	33.1	34.5	41.5	31.0	25.5	23.9	24.9
Some college credit, but no degree	26.1	11.4	31.6	30.5	25.3	22.8	20.4
Associate's degree 3	5.9	0.2	3.4	8.0	9.8	9.8	9.5
Bachelor’s degree 4	9.0	0.0	2.9	12.1	17.0	18.8	18.3
Master’s degree 5	3.6	*	0.2	3.4	8.5	11.0	10.9
Doctorate or professional degree 6	0.8	*	0.0	0.5	2.0	2.8	3.4
				Number			
All births	407,522	61,092	127,754	101,600	71,247	35,855	9,974
Not stated 7	4,498	605	1,210	1,088	890	523	182
Hispanic 9							
				Percent			
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
12th grade or less with no diploma	40.7	62.3	37.0	36.6	37.2	39.3	42.0
8th grade or less	14.5	8.5	10.2	15.3	18.6	20.9	23.9
9th-12th grade with no diploma	26.2	53.8	26.9	21.3	18.7	18.5	18.2
High school graduate 2	29.4	29.9	37.1	29.1	24.0	21.9	21.7
Some college credit, but no degree	16.4	7.6	20.6	18.5	15.4	13.6	12.8
Associate's degree 3	4.3	0.3	3.2	5.7	5.9	5.6	5.3
Bachelor’s degree 4	6.7	0.0	1.9	8.1	11.9	12.6	11.4
Master’s degree 5	2.0	*	0.1	1.5	4.3	5.3	4.8
Doctorate or professional degree 6	0.6	*	0.0	0.4	1.2	1.7	2.0
				Number			
All births	799,928	105,639	215,248	215,321	161,391	82,629	19,700
Not stated 7	11,173	1,389	2,628	2,928	2,521	1,312	395

0.0 Quantity more than zero but less than 0.5.

* Figure does not meet standards of reliability or precision; based on fewer than 20 births in the numerator.

1 Includes other races not shown and origin not stated.

2 Includes General Educational Development (GED).

3 Includes Associate in Arts and Associate in Science.

4 Includes Bachelor in Arts and Bachelor in Science.

5 Includes Master in Arts, Master in Science, Master of Engineering, Master of Education, Master of Social Work, and Master of Business Administration.

6 Includes Doctor of Philosophy, Doctor of Education, Doctor of Medicine, Doctor of Dental Surgery, Doctor of Veterinary Medicine, Doctor of Laws, and Juris Doctor.

7 No response reported for education attainment of mother item; includes births to residents of states using the 2003 Standard Certificate of Live Birth occurring in states using the 1989 Standard Certificate of Live Birth (0.6 percent). See "User Guide to the 2010 Public Use File."

8 Race and Hispanic origin are reported separately on the birth certificate. Race categories are consistent with the 1997 Office of Management and Budget standards; see "Technical Notes." Data by race are non-Hispanic and exclude mothers reporting multiple races.

9 Includes all persons of Hispanic origin of any race.

NOTE: Includes California, Colorado, Delaware, the District of Columbia, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Michigan, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Washington, and Wyoming.

Documentation Table 3. Maternal smoking status during pregnancy, by age and race and Hispanic origin of mother: Total of 30 reporting states and the District of Columbia, 2010

Tobacco use and race and Hispanic origin	All births	Under 20 years	20-24 years	25-29 years	30-34 years	35-39 years	40-54 years
All races [1]	Percent						
First trimester	9.0	11.9	14.0	9.1	5.5	4.4	4.4
Second trimester	7.7	9.8	12.0	7.8	4.8	3.9	3.9
Third trimester	7.3	9.3	11.4	7.5	4.6	3.7	3.7
Smoked anytime during pregnancy	9.2	12.3	14.4	9.3	5.7	4.5	4.5
Quit during pregnancy [2]	20.3	24.7	20.8	19.3	18.6	17.9	17.2
White [3]							
First trimester	13.6	25.7	23.5	12.9	7.4	6.2	6.1
Second trimester	11.8	21.8	20.5	11.2	6.5	5.5	5.4
Third trimester	11.3	20.6	19.6	10.8	6.3	5.3	5.2
Smoked anytime during pregnancy	13.9	26.6	24.1	13.1	7.6	6.4	6.2
Quit during pregnancy [2]	18.6	22.5	18.9	17.7	17.2	16.8	15.6
Black [3]							
First trimester	8.1	5.2	9.0	9.6	7.7	6.3	6.3
Second trimester	6.8	4.1	7.4	8.2	6.6	5.6	5.6
Third trimester	6.4	3.8	6.9	7.8	6.3	5.3	5.3
Smoked anytime during pregnancy	8.4	5.4	9.4	10.0	8.0	6.5	6.6
Quit during pregnancy [2]	23.8	30.3	26.0	22.0	21.1	18.3	19.2
Hispanic [4]							
First trimester	1.9	2.0	2.6	2.0	1.4	1.0	1.0
Second trimester	1.4	1.3	1.9	1.5	1.1	0.9	0.9
Third trimester	1.3	1.2	1.8	1.4	1.0	0.8	0.8
Smoked anytime during pregnancy	2.0	2.1	2.7	2.1	1.4	1.1	1.1
Quit during pregnancy [2]	32.6	39.9	34.3	31.1	27.7	25.3	23.5

All races [1]	Number						
Total	2,592,816	243,003	613,072	735,923	623,244	302,393	75,181
Not stated during pregnancy [5]	31,725	2,874	7,240	8,574	7,735	4,198	1,131
Quit during pregnancy [2]							
Smokers	235,848	29,516	87,364	67,416	34,775	13,439	3,338
Unknown if quit	401	53	119	100	75	43	11
White [3]							
Total	1,339,479	88,390	288,280	405,296	355,410	162,019	40,084
Not stated during pregnancy [5]	7,750	600	1,832	2,272	1,843	925	278
Quit during pregnancy [2]							
Smokers	184,787	23,304	69,039	52,865	26,870	10,236	2,473
Unknown if quit	249	34	68	64	51	28	4
Black [3]							
Total	293,159	43,771	91,581	73,151	51,430	25,899	7,327
Not stated during pregnancy [5]	3,891	591	1,199	913	700	394	94
Quit during pregnancy [2]							
Smokers	24,230	2,346	8,486	7,211	4,060	1,653	474
Unknown if quit	80	7	27	21	10	11	4
Hispanic [4]							
Total	711,298	96,961	193,549	190,706	141,005	71,883	17,194
Not stated during pregnancy [5]	5,415	685	1,430	1,442	1,114	612	132
Quit during pregnancy [2]							
Smokers	14,024	1,994	5,119	3,943	1,994	787	187
Unknown if quit	31	5	12	3	7	2	2

- Quantity zero.

1 Includes other races not shown and origin not stated.

2 Mothers who smoked in either of the first two trimesters of pregnancy but not in the third trimester. See "Technical Notes."

3 Race and Hispanic origin are reported separately on the birth certificate. Race categories are consistent with the 1997 Office of Management and Budget standards; see "Technical Notes." Data by race are non-Hispanic and exclude mothers reporting multiple races.

4 Includes all persons of Hispanic origin of any race.

5 No response reported for maternal smoking item; includes births to residents of states using the 2003 Standard Certificate of Live Birth occurring in states using the 1989 Standard Certificate of Live Birth (0.6 percent). See "Technical Notes."

NOTE: Includes California, Colorado, Delaware, District of Columbia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Washington, and Wyoming.

Documentation Table 4. Month prenatal care began, by age and race and Hispanic origin of mother: Total of 33 reporting states, 2010

Month care began and race and Hispanic origin of mother	All ages	Under 20 years	20-24 years	25-29 years	30-34 years	35-39 years	40-54 years
All races 1				Percent			
1st trimester	73.1	57.1	65.5	75.7	80.1	80.0	77.1
2nd trimester	20.6	32.1	26.3	18.8	15.5	15.6	17.7
Late or no care	6.2	10.8	8.2	5.5	4.3	4.4	5.3
3rd trimester	4.6	8.1	6.1	4.1	3.1	3.1	3.7
No care	1.6	2.7	2.1	1.5	1.2	1.2	1.6
				Number			
Total	3,055,884	287,888	728,907	866,867	730,017	354,202	88,003
Not stated 2	153,197	15,429	37,430	41,109	35,566	18,654	5,009
White 3				Percent			
1st trimester	78.3	62.6	69.5	80.3	84.3	84.1	81.0
2nd trimester	17.4	29.6	24.2	15.8	12.7	12.9	15.1
Late or no care	4.3	7.8	6.2	3.9	2.9	3.1	3.9
3rd trimester	3.3	6.4	4.9	3.0	2.2	2.2	2.8
No care	1.0	1.4	1.3	0.9	0.7	0.8	1.1
				Number			
Total	1,573,540	105,476	341,592	475,924	414,496	189,201	46,851
Not stated 2	54,519	3,639	11,753	15,578	14,416	7,171	1,962
Black 3				Percent			
1st trimester	62.5	50.7	58.7	66.2	69.4	70.3	67.5
2nd trimester	27.2	35.8	30.3	24.5	22.1	21.2	22.8
Late or no care	10.3	13.5	11.1	9.3	8.5	8.4	9.7
3rd trimester	7.0	9.5	7.5	6.3	5.8	5.6	6.1
No care	3.3	4.0	3.5	2.9	2.7	2.8	3.6
				Number			
Total	407,522	61,092	127,754	101,600	71,247	35,855	9,974
Not stated 2	36,142	5,649	11,301	8,650	6,263	3,322	957
Hispanic 4				Percent			
1st trimester	67.6	55.6	63.9	70.3	73.4	73.7	71.1
2nd trimester	24.3	32.3	26.9	22.4	20.5	20.2	22.1
Late or no care	8.1	12.1	9.2	7.2	6.1	6.1	6.7
3rd trimester	5.8	8.9	6.6	5.2	4.3	4.2	4.7
No care	2.3	3.2	2.6	2.1	1.8	1.8	2.1
				Number			
Total	799,928	105,639	215,248	215,321	161,391	82,629	19,700
Not stated 2	37,215	4,556	9,829	9,980	7,733	4,148	969

1 Includes other races not shown and origin not stated.

2 No response reported for timing of prenatal care; includes births to residents of states using the 2003 Standard Certificate of Live Birth occurring in states using the 1989 Standard Certificate of Live Birth (0.6 percent). See "Technical Notes."

3 Race and Hispanic origin are reported separately on the birth certificate. Race categories are consistent with the 1997 Office of Management and Budget standards; see "Technical Notes." Data by race are non-Hispanic and exclude mothers reporting multiple races.

4 Includes all persons of Hispanic origin of any race.

NOTE: Includes California, Colorado, District of Columbia, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Michigan, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Washington, and Wyoming.

Documentation Table 5. Pregnancy risk factors, by age and race and Hispanic origin of mother: Total of 33 reporting states and the District of Columbia, 2010

[Rates are number of live births with specified risk factor per 1,000 live births in specified group]

Risk factor and race and Hispanic origin of mother	All births [1]	Factor reported	All ages	Under 20 years	20-24 years	25-29 years	30-34 years	35-39 years	40-54 years	Not stated [2]
All races [3]			Per 1,000							
Diabetes										
Prepregnancy (Diagnosis prior to this pregnancy)	3,055,884	21,269	7.0	2.7	4.3	6.3	8.6	12.2	16.7	27,643
Gestational (Diagnosis in this pregnancy)	3,055,884	133,884	44.2	13.6	24.9	40.8	57.0	77.7	97.0	27,643
Hypertension										
Prepregnancy (Chronic)	3,055,884	38,596	12.7	4.5	7.6	11.2	15.4	22.9	34.7	27,643
Gestational (PIH, preeclampsia)	3,055,884	131,484	43.4	45.9	42.1	42.5	42.0	45.6	57.6	27,643
Eclampsia [4]	2,468,756	6,121	2.5	3.2	2.6	2.3	2.2	2.6	3.3	22,001
Previous preterm birth	3,055,884	64,134	21.2	6.4	18.5	22.6	24.5	26.7	27.7	27,643
Other previous poor pregnancy outcome	3,055,884	62,114	20.5	6.9	16.4	20.8	23.7	29.0	34.6	27,643
Mother had a previous cesarean delivery [5]	1,995,284	408,641	206.3	115.8	170.6	195.5	222.9	256.0	263.9	14,209
Non-Hispanic white [6]										
Diabetes										
Prepregnancy (Diagnosis prior to this pregnancy)	1,573,540	9,812	6.3	3.2	4.5	5.8	7.0	9.2	12.5	6,093
Gestational (Diagnosis in this pregnancy)	1,573,540	65,999	42.1	16.6	27.1	38.5	49.7	65.7	83.4	6,093
Hypertension										
Prepregnancy (Chronic)	1,573,540	19,688	12.6	4.5	7.8	11.3	14.3	20.8	29.9	6,093
Gestational (PIH, preeclampsia)	1,573,540	75,555	48.2	52.4	48.3	48.6	46.0	47.2	57.6	6,093
Eclampsia [4]	1,174,540	3,216	2.8	3.7	3.1	2.6	2.4	2.8	3.5	5,104
Previous preterm birth	1,573,540	36,457	23.3	6.7	19.8	23.8	26.1	29.6	29.8	6,093
Other previous poor pregnancy outcome	1,573,540	37,693	24.0	9.0	19.2	23.0	26.5	34.4	40.7	6,093
Mother had a previous cesarean delivery [5]	1,011,318	201,319	199.6	101.6	160.0	184.5	213.8	249.8	258.0	2,597
Non-Hispanic black [6]										
Diabetes										
Prepregnancy (Diagnosis prior to this pregnancy)	407,522	3,825	9.5	3.0	5.1	8.9	15.0	21.8	26.6	4,587
Gestational (Diagnosis in this pregnancy)	407,522	14,786	36.7	11.8	21.5	38.5	56.5	73.4	90.9	4,587
Hypertension										
Prepregnancy (Chronic)	407,522	10,791	26.8	8.1	13.4	25.3	42.6	61.4	88.7	4,587
Gestational (PIH, preeclampsia)	407,522	21,963	54.5	54.2	50.6	51.8	57.6	66.0	70.9	4,587
Eclampsia [4]	321,793	1,294	4.1	4.6	3.5	3.9	4.3	4.7	5.5	3,918
Previous preterm birth	407,522	12,228	30.3	8.7	25.0	37.9	39.5	42.6	43.9	4,587
Other previous poor pregnancy outcome	407,522	11,175	27.7	8.7	22.2	32.5	37.3	42.0	46.5	4,587
Mother had a previous cesarean delivery [5]	267,073	55,060	207.2	121.1	179.8	210.2	232.0	256.9	267.6	1,397

Hispanic [7]										
Diabetes										
Prepregnancy (Diagnosis prior to this pregnancy)	799,928	5,719	7.2	1.9	3.5	6.3	10.3	15.9	23.5	3,249
Gestational (Diagnosis in this pregnancy)	799,928	35,519	44.6	11.7	22.3	41.6	65.6	94.0	118.5	3,249
Hypertension										
Prepregnancy (Chronic)	799,928	5,538	7.0	2.5	3.9	5.7	9.2	15.3	25.1	3,249
Gestational (PIH, preeclampsia)	799,928	25,805	32.4	35.6	29.2	29.2	32.3	40.2	53.9	3,249
Eclampsia [4]	739,639	1,209	1.6	2.1	1.5	1.4	1.5	2.0	2.4	2,933
Previous preterm birth	799,928	11,256	14.1	4.8	12.5	15.4	17.8	18.5	20.2	3,249
Other previous poor pregnancy outcome	799,928	9,127	11.5	3.5	8.9	12.6	14.4	17.4	21.0	3,249
Mother had a previous cesarean delivery [5]	548,526	119,041	217.6	126.1	182.1	212.4	241.2	270.7	275.1	1,537

* Figure does not meet standards of reliability or precision; based on fewer than 20 births in the numerator.

[1] Total number of births to residents of areas reporting specified pregnancy risk factor.

[2] No response reported for pregnancy risk factor item; includes births to residents of states using the 2003 Standard Certificate of Live Birth occurring in states using the 1989 Standard Certificate of Live Birth (0.6 percent). See "Technical Notes".

[3] Includes other races not shown and origin not stated.

[4] Excludes data for Idaho, Kentucky, Michigan, Nebraska, New York City, Pennsylvania, South Carolina, Tennessee, and Washington.

[5] Excludes women who have not had a previous pregnancy and for whom total birth order is unknown.

[6] Race and Hispanic origin are reported separately on the birth certificate. Race categories are consistent with the 1997 Office of Managmenet and Budget standards; see "Technical Notes."

[7] Includes all persons of Hispanic origin of any race.

NOTE: Includes California, Colorado, Delaware, District of Columbia, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Michigan, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Washington, and Wyoming.

Documentation Table 6. Obstetric procedures by age and race and Hispanic origin of mother: Total of 33 reporting states and the District of Columbia, 2010

[Rates are number of live births with specified obstetric procedure per 1,000 live births in specified group]

Obstetric procedure and race and Hispanic origin of mother	All births [1]	Procedure reported	All ages	Under 20 years	20-24 years	25-29 years	30-34 years	35-39 years	40-54 years	Not stated [2]
			Per 1,000							
All races [3]										
Cervical cerclage	3,055,884	9,944	3.3	1.8	2.3	3.1	3.9	5.0	5.9	30,369
Tocolysis [4]	3,016,670	36,055	12.1	13.8	13.0	11.7	11.4	11.1	12.0	30,240
External cephalic version [5]	2,543,808	6,564	2.6	1.9	2.2	2.6	2.9	3.2	3.4	16,265
Percent successful 6	2,543,808	3,942	60.1	64.7	60.8	58.0	59.6	60.2	65.3	16,265
Non-Hispanic white 7										
Cervical cerclage	1,573,540	4,642	3.0	1.5	1.9	2.7	3.3	4.8	5.6	7,331
Tocolysis [4]	1,559,634	20,778	13.4	16.5	14.9	13.2	12.3	11.9	12.8	7,328
External cephalic version [5]	1,291,017	3,832	3.0	1.5	2.3	3.0	3.4	3.7	4.1	2,812
Percent successful 6	1,291,017	2,127	55.5	53.0	51.8	53.9	57.3	57.5	65.0	2,812
Non-Hispanic black 7										
Cervical cerclage	407,522	2,807	7.0	2.8	4.2	7.5	10.9	12.7	13.0	5,323
Tocolysis [4]	404,119	6,767	17.0	19.4	17.6	16.4	15.9	15.0	14.5	5,323
External cephalic version [5]	290,246	744	2.6	2.8	2.5	2.4	2.5	2.7	3.5	1,322
Percent successful 6	290,246	596	80.1	87.2	80.1	81.8	73.2	79.4	*	1,322
Hispanic 8										
Cervical cerclage	799,928	1,746	2.2	1.4	1.8	2.3	2.6	2.9	3.6	3,567
Tocolysis [4]	783,023	5,774	7.4	7.8	7.2	6.8	7.6	8.1	9.6	3,556
External cephalic version [5]	724,769	1,378	1.9	1.7	1.7	1.8	2.2	2.4	2.1	1,777
Percent successful 6	724,769	860	62.4	59.0	64.7	63.0	62.6	60.2	59.5	1,777

* Figure does not meet standards of reliability or precision; based on fewer than 20 births in the numerator.

[1] Total number of births to residents of areas reporting specified obstetric procedure.

[2] No response reported for obstetric procedure item; includes births to residents of states using the 2003 Standard Certificate of Live Birth occurring in states using the 1989 Standard Certificate of Live Birth (0.6 percent). See "Technical Notes".

[3] Includes other races not shown and origin not stated.

[4] Excludes data for Delaware and New Mexico (see "Technical Notes").

[5] Excludes data for Georgia, Illinois, Maryland, and Ohio (see "Technical Notes").

[6] Percent successful external cephalic version (ECV) is the number of successful ECVs per 100 live births to women with an attempted ECV in specified group.

[7] Race and Hispanic origin are reported separately on the birth certificate. Race categories are consistent with the 1997 Office of Managmenet and Budget standards; see "Technical Notes."

[8] Includes all persons of Hispanic origin of any race.

NOTE: Includes California, Colorado, Delaware, District of Columbia, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Michigan, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Washington, and Wyoming.

Documentation Table 7. Characteristics of labor and delivery, by age and race and Hispanic origin of mother: Total of 33 reporting states and the District of Columbia, 2010

[Rates are number of live births with specified characteristic per 1,000 live births in specified group]

Labor and delivery characteristic and race and Hispanic origin of mother	All births [1]	Characteristic reported	All ages	Under 20 years	20-24 years	25-29 years	30-34 years	35-39 years	40-54 years	Not stated [2]
All races [3]			Per 1,000							
Induction of labor	3,055,884	723,706	238.8	265.3	253.7	244.4	225.5	208.4	203.6	24,758
Augmentation of labor	3,055,884	630,536	208.0	261.9	232.9	209.9	188.5	163.8	145.6	24,758
Steroids (glucocorticoids) for fetal lung maturation [4]	3,044,520	37,558	12.4	11.9	11.9	11.9	12.5	13.8	18.1	24,730
Antibiotics received by mother during labor	3,055,884	587,541	193.8	199.0	192.7	191.6	194.6	194.5	199.0	24,758
Clinical chorioamnionitis during labor	3,055,884	38,537	12.7	18.3	14.6	12.3	11.0	9.7	9.5	24,758
Moderate/heavy meconium staining of amniotic fluid	3,055,884	143,404	47.3	52.9	48.6	46.7	45.6	45.5	45.9	24,758
Fetal intolerance of labor	3,055,884	146,523	48.3	55.3	49.8	46.7	46.3	47.1	50.9	24,758
Epidural or spinal anesthesia during labor	3,055,884	2,099,438	692.6	706.4	693.2	688.9	694.3	688.4	682.9	24,758
Non-Hispanic white [5]										
Induction of labor	1,573,540	439,649	280.2	339.8	309.1	286.3	259.0	239.0	228.4	4,761
Augmentation of labor	1,573,540	332,723	212.1	274.0	242.1	217.8	193.2	166.6	146.9	4,761
Steroids (glucocorticoids) for fetal lung maturation [4]	1,567,292	22,693	14.5	15.3	14.4	13.8	14.1	15.5	20.8	4,760
Antibiotics received by mother during labor	1,573,540	327,856	209.0	212.7	203.9	207.3	211.6	212.3	217.7	4,761
Clinical chorioamnionitis during labor	1,573,540	17,203	11.0	14.2	12.3	11.1	10.0	9.0	9.3	4,761
Moderate/heavy meconium staining of amniotic fluid	1,573,540	66,231	42.2	44.6	42.8	42.1	41.4	41.8	42.2	4,761
Fetal intolerance of labor	1,573,540	78,194	49.8	61.7	53.4	48.6	46.9	45.9	51.4	4,761
Epidural or spinal anesthesia during labor	1,573,540	1,156,127	737.0	782.2	745.8	732.9	731.4	724.5	711.4	4,761
Non-Hispanic black [5]										
Induction of labor	407,522	89,830	222.5	245.9	226.3	219.9	214.9	199.9	195.1	3,826
Augmentation of labor	407,522	82,514	204.4	252.9	228.5	194.6	172.3	147.1	135.6	3,826
Steroids (glucocorticoids) for fetal lung maturation [4]	404,530	6,777	16.9	15.3	15.6	16.9	18.2	20.5	22.3	3,826
Antibiotics received by mother during labor	407,522	93,497	231.6	252.4	242.0	223.0	218.1	217.1	207.3	3,826
Clinical chorioamnionitis during labor	407,522	5,535	13.7	20.0	15.9	12.2	10.0	8.5	9.0	3,826
Moderate/heavy meconium staining of amniotic fluid	407,522	24,763	61.3	63.6	60.0	59.8	63.0	62.5	64.4	3,826
Fetal intolerance of labor	407,522	23,470	58.1	64.4	58.9	54.5	55.7	59.7	59.6	3,826
Epidural or spinal anesthesia during labor	407,522	285,400	707.0	718.9	713.8	700.5	700.0	698.2	694.7	3,826
Hispanic [6]										
Induction of labor	799,928	143,091	179.5	205.5	188.7	176.4	164.8	162.3	166.6	2,910
Augmentation of labor	799,928	159,619	200.3	255.2	221.3	193.3	174.5	157.4	143.1	2,910
Steroids (glucocorticoids) for fetal lung maturation [4]	798,501	5,294	6.7	6.5	6.1	5.9	7.4	7.9	10.2	2,909
Antibiotics received by mother during labor	799,928	118,248	148.4	153.4	147.0	144.9	148.4	152.7	155.4	2,910
Clinical chorioamnionitis during labor	799,928	10,637	13.3	21.2	16.6	11.8	9.2	8.1	8.0	2,910
Moderate/heavy meconium staining of amniotic fluid	799,928	39,686	49.8	54.2	50.7	49.1	47.6	48.4	47.0	2,910
Fetal intolerance of labor	799,928	33,066	41.5	43.7	39.4	38.8	42.1	47.7	50.1	2,910
Epidural or spinal anesthesia during labor	799,928	475,716	596.9	625.9	601.8	583.6	589.2	595.9	598.9	2,910

[1] Total number of births to residents of areas reporting specified labor and delivery characteristic.

[2] No response reported for characteristic of labor and delivery item; includes births to residents of states using the 2003 Standard Certificate of Live Birth occurring in states using the 1989 Standard Certificate of Live Birth (0.6 percent). See "Technical Notes".

[3] Includes other races not shown and origin not stated.

[4] Excludes data for Delaware (see "Technical Notes").

[5] Race and Hispanic origin are reported separately on the birth certificate. Race categories are consistent with the 1997 Office of Managmenet and Budget standards; see "Technical Notes."

[6] Includes all persons of Hispanic origin of any race.

NOTE: Includes California, Colorado, Delaware, District of Columbia, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Michigan, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Washington, and Wyoming.

Documentation Table 8. Method of delivery, by age and race and Hispanic origin of mother: Total of 33 reporting states and the District of Columbia, 2010

[Percentages are number of live births with specified method of delivery per 100 live births in specified group]

Method of delivery and race and Hispanic origin of mother	All births	Method reported	All ages[1]	Under 20 years	20-24 years	25-29 years	30-34 years	35-39 years	40-54 years	Not stated[2]
All races[3]			Per 100							
Fetal presentation at birth										
Cephalic	3,055,884	2,776,179	94.0	95.1	94.8	94.3	93.5	92.5	90.8	102,462
Breech	3,055,884	107,664	3.6	2.4	2.8	3.5	4.2	5.0	6.3	102,462
Other	3,055,884	69,579	2.4	2.5	2.4	2.2	2.2	2.6	2.9	102,462
Final route and method of delivery										
Vaginal/Spontaneous	3,055,884	1,931,624	63.6	72.2	68.0	64.8	60.6	54.6	47.5	17,568
Vaginal/Forceps	3,055,884	20,868	0.7	0.8	0.7	0.7	0.7	0.6	0.6	17,568
Vaginal/Vacuum	3,055,884	89,879	3.0	4.2	3.1	2.9	2.7	2.4	2.3	17,568
Cesarean	3,055,884	995,945	32.8	22.7	28.2	31.6	36.1	42.4	49.6	17,568
Cesarean/trial of labor attempted[4]	**995,945**	**262,861**	**27.2**	**46.6**	**33.3**	**27.3**	**22.9**	**19.8**	**19.5**	**28,265**
Non-Hispanic white[5]										
Fetal presentation at birth										
Cephalic	1,573,540	1,453,374	94.1	95.5	95.1	94.4	93.7	92.7	90.9	29,725
Breech	1,573,540	62,536	4.1	2.8	3.2	3.8	4.5	5.2	6.6	29,725
Other	1,573,540	27,905	1.8	1.7	1.7	1.7	1.8	2.0	2.5	29,725
Final route and method of delivery										
Vaginal/Spontaneous	1,573,540	999,912	63.6	71.2	67.9	65.5	61.5	55.6	48.3	2,083
Vaginal/Forceps	1,573,540	13,198	0.8	1.1	0.9	0.8	0.8	0.7	0.8	2,083
Vaginal/Vacuum	1,573,540	50,700	3.2	5.2	3.7	3.2	2.8	2.4	2.4	2,083
Cesarean	1,573,540	507,647	32.3	22.5	27.5	30.5	35.0	41.2	48.5	2,083
Cesarean/trial of labor attempted[4]	**507,647**	**142,316**	**28.6**	**52.0**	**36.5**	**29.5**	**24.2**	**20.7**	**20.6**	**10,277**
Non-Hispanic black[5]										
Fetal presentation at birth										
Cephalic	407,522	367,457	93.7	94.9	94.4	93.6	93.0	91.5	90.2	15,255
Breech	407,522	12,528	3.2	2.1	2.5	3.2	4.0	5.1	6.0	15,255
Other	407,522	12,282	3.1	3.0	3.1	3.2	3.0	3.4	3.8	15,255
Final route and method of delivery										
Vaginal/Spontaneous	407,522	250,656	61.6	70.8	65.3	60.9	56.3	50.4	43.6	615
Vaginal/Forceps	407,522	2,048	0.5	0.8	0.5	0.5	0.4	0.4	0.3	615
Vaginal/Vacuum	407,522	9,578	2.4	3.8	2.5	1.9	1.9	1.7	1.5	615
Cesarean	407,522	144,625	35.5	24.7	31.7	36.7	41.4	47.5	54.6	615
Cesarean/trial of labor attempted[4]	**144,625**	**42,384**	**31.3**	**50.3**	**35.4**	**28.8**	**25.5**	**22.8**	**22.7**	**9,251**

	Hispanic[6]									
Fetal presentation at birth										
Cephalic	799,928	716,267	93.9	94.7	94.6	94.1	93.2	92.1	91.1	36,741
Breech	799,928	22,882	3.0	2.1	2.3	2.9	3.7	4.4	5.2	36,741
Other	799,928	24,038	3.1	3.2	3.1	3.0	3.1	3.6	3.6	36,741
Final route and method of delivery										
Vaginal/Spontaneous	799,928	518,776	65.0	73.9	69.3	65.4	60.2	54.4	48.9	1,571
Vaginal/Forceps	799,928	3,576	0.4	0.7	0.5	0.4	0.4	0.4	0.4	1,571
Vaginal/Vacuum	799,928	18,626	2.3	3.5	2.5	2.0	2.0	1.9	2.0	1,571
Cesarean	799,928	257,379	32.2	21.9	27.7	32.2	37.4	43.3	48.7	1,571
Cesarean/trial of labor attempted[4]	**257,379**	**55,217**	**22.0**	**38.2**	**26.5**	**20.5**	**17.6**	**16.1**	**15.7**	**6,756**

* Figure does not meet standards of reliability or precision; based on fewer than 20 births in the numerator.

[1] Total number of births to residents of areas reporting the specified item.

[2] No response reported for characteristic of labor and delivery item; includes births to residents of states using the 2003 Standard Certificate of Live Birth occurring in states using the 1989 Standard Certificate of Live Birth (0.6 percent). See "Technical Notes".

[3] Includes other races not shown and origin not stated.

[4] Cesarean/trial of labor attempted is number of women who attempted a trial of labor prior to cesarean delivery per 100 cesarean births.

[5] Race and Hispanic origin are reported separately on the birth certificate. Race categories are consistent with the 1997 Office of Managmenet and Budget standards; see "Technical Notes."

[6] Includes all persons of Hispanic origin of any race.

NOTE: Includes California, Colorado, Delaware, District of Columbia, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Michigan, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Washington, and Wyoming.

Documentation Table 9. Primary cesarean delivery and vaginal birth after previous cesarean delivery, by age and race and Hispanic origin of mother: Total of 33 reporting states and the District of Columbia, 2010

Method of delivery and race and Hispanic origin of mother	Total 1	Method reported	All ages	Under 20 years	20-24 years	25-29 years	30-34 years	35-39 years	40-54 years
All races 2			Percent						
Primary cesarean 3	2,610,957	615,297	23.6	20.6	21.2	22.3	24.8	29.2	37.6
Vaginal birth after cesarean delivery 4	415,295	38,021	9.2	9.4	8.4	9.5	9.5	8.9	8.8
White 5									
Primary cesarean 3	1,362,652	321,642	23.6	20.9	21.3	22.3	24.5	28.7	37.2
Vaginal birth after cesarean delivery 4	203,770	19,250	9.4	7.6	7.6	9.7	9.9	9.7	10.0
Black 5									
Primary cesarean 3	345,432	91,952	26.6	22.5	24.1	26.3	29.8	35.1	43.3
Vaginal birth after cesarean delivery 4	57,161	5,778	10.1	12.8	10.0	10.5	10.2	9.0	8.4
Hispanic 6									
Primary cesarean 3	675,908	146,230	21.6	19.5	19.6	20.4	23.5	27.9	34.2
Vaginal birth after cesarean delivery 4	120,521	9,736	8.1	8.4	8.2	8.5	8.1	7.4	7.0

1 Total for primary cesarean is the number of births to women delivering without a previous cesarean. Total for vaginal birth after cesarean delivery is the number of births to women delivering after a previous cesarean.

2 Includes other races not shown and origin not stated.

3 Primary cesarean rate is the number of births to women having a cesarean delivery per 100 births to women without a previous cesarean.

4 Vaginal birth after cesarean delivery rate is the number of births to women having a vaginal delivery per 100 births to women with a previous cesarean delivery.

5 Race and Hispanic origin are reported separately on the birth certificate. Race categories are consistent with the 1997 Office of Management and Budget standards; see "Technical Notes." Data by race are non-Hispanic and exclude mothers reporting multiple races.

6 Includes all persons of Hispanic origin of any race.

NOTE: Includes California, Colorado, Delaware, District of Columbia, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Michigan, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Washington, and Wyoming.

Documentation Table 10. Abnormal conditions of the newborn, by age and race and Hispanic origin of mother: Total of 33 reporting states and the District of Columbia, 2010

[Rates are number of live births with specified condition per 1,000 live births in specified group]

Abnormal condition and race and Hispanic origin of mother	All births[1]	Condition reported	All ages	Under 20 years	20-24 years	25-29 years	30-34 years	35-39 years	40-54 years	Not stated [2]
			per 1,000							
All races [3]										
Assisted ventilation required immediately following delivery	3,055,884	123,613	40.9	43.4	41.2	39.3	39.6	42.8	49.0	33,776
Assisted ventilation required for more than six hours	3,055,884	28,568	9.5	10.2	9.4	9.0	9.1	9.9	12.4	33,776
NICU admission	3,055,884	226,332	74.9	75.6	71.8	70.6	74.0	85.0	107.5	33,776
Surfactant replacement therapy given to newborn	3,055,884	12,239	4.0	4.2	4.1	3.9	4.0	4.0	4.9	33,776
Antibiotics received by newborn for suspected neonatal sepsis	3,055,884	62,134	20.6	24.3	22.2	19.7	18.7	19.5	22.6	33,776
Seizure or serious neurologic dysfunction	3,055,884	909	0.3	0.4	0.3	0.3	0.3	0.2	0.4	33,776
Significant birth injury	3,055,884	2,143	0.7	0.8	0.7	0.7	0.7	0.7	0.6	33,776
Non-Hispanic white [4]										
Assisted ventilation required immediately following delivery	1,573,540	69,253	44.3	50.7	45.4	42.9	42.2	44.9	52.1	9,967
Assisted ventilation required for more than six hours	1,573,540	16,993	10.9	12.7	11.1	10.5	10.4	10.8	13.6	9,967
NICU admission	1,573,540	112,941	72.2	73.4	68.9	68.7	71.4	80.8	102.3	9,967
Surfactant replacement therapy given to newborn	1,573,540	7,836	5.0	5.8	5.2	4.9	4.8	4.7	5.5	9,967
Antibiotics received by newborn for suspected neonatal sepsis	1,573,540	35,081	22.4	27.2	24.8	21.9	20.3	21.0	24.5	9,967
Seizure or serious neurologic dysfunction	1,573,540	565	0.4	0.6	0.4	0.4	0.3	0.3	*	9,967
Significant birth injury	1,573,540	1,256	0.8	1.0	0.9	0.8	0.7	0.8	0.6	9,967
Non-Hispanic black [4]										
Assisted ventilation required immediately following delivery	407,522	19,942	49.6	47.9	47.3	48.1	51.7	58.4	59.2	5,770
Assisted ventilation required for more than six hours	407,522	4,630	11.5	11.4	10.9	11.4	11.9	13.3	13.3	5,770
NICU admission	407,522	40,900	101.8	92.3	93.8	99.7	107.4	129.7	143.0	5,770
Surfactant replacement therapy given to newborn	407,522	1,890	4.7	4.5	4.6	4.4	4.7	5.5	6.9	5,770
Antibiotics received by newborn for suspected neonatal sepsis	407,522	8,953	22.3	24.5	23.2	20.6	20.7	22.9	23.4	5,770
Seizure or serious neurologic dysfunction	407,522	131	0.3	0.3	0.3	0.3	0.3	*	*	5,770
Significant birth injury	407,522	195	0.5	0.5	0.5	0.5	0.5	*	*	5,770
Hispanic [5]										
Assisted ventilation required immediately following delivery	799,928	26,089	32.8	34.3	32.2	30.3	32.5	37.2	41.0	3,469
Assisted ventilation required for more than six hours	799,928	5,104	6.4	6.9	6.0	5.6	6.2	8.0	10.7	3,469
NICU admission	799,928	53,428	67.1	68.3	63.0	61.7	68.5	79.5	101.1	3,469
Surfactant replacement therapy given to newborn	799,928	1,775	2.2	2.5	2.0	2.0	2.4	2.6	2.8	3,469
Antibiotics received by newborn for suspected neonatal sepsis	799,928	13,427	16.9	21.2	17.6	15.1	15.3	16.4	18.8	3,469
Seizure or serious neurologic dysfunction	799,928	151	0.2	0.2	0.2	0.1	0.2	*	*	3,469
Significant birth injury	799,928	443	0.6	0.7	0.5	0.5	0.6	0.5	*	3,469

* Figure does not meet standards of reliability or precision; based on fewer than 20 births in the numerator.

\- Quantity zero.

[1] Total number of births to residents of areas reporting specified abnormal condition.

[2] No response reported for characteristic of labor and delivery item; includes births to residents of states using the 2003 Standard Certificate of Live Birth occurring in states using the 1989 Standard Certificate of Live Birth (0.6 percent). See "Technical Notes".

[3] Includes other races not shown and origin not stated.

[4] Race and Hispanic origin are reported separately on the birth certificate. Race categories are consistent with the 1997 Office of Managmenet and Budget standards; see "Technical Notes."

[5] Includes all persons of Hispanic origin of any race.

NOTE: Includes California, Colorado, Delaware, District of Columbia, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Michigan, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Washington, and Wyoming.

Documentation Table 11. Congenital anomaly of the newborn, by age of mother: Total of 33 reporting states and the District of Columbia, 2010

[Rates are number of live births with specified anomaly per 100,000 live births in specified group]

Congenital anomaly	All births [1]	Congenital anomaly reported	All ages	Under 20 years	20-24 years	25-29 years	30-34 years	35-39 years	40-54 years	Not stated [2]
Total			Per 100,000							
Anencephaly	3,055,884	326	10.8	12.7	10.4	11.2	10.4	10.0	*	40,129
Menigomyelocele/spina bifida	3,055,884	465	15.4	19.7	14.2	15.3	14.7	15.5	*	40,129
Cyanotic congenital heart disease	**3,055,884**	**1,861**	**61.7**	**48.5**	**54.6**	**63.1**	**65.8**	**68.5**	**88.9**	**40,129**
Congenital diaphragmatic hernia	3,055,884	365	12.1	16.2	11.5	11.9	10.6	13.2	*	40,129
Omphalocele	3,055,884	264	8.8	12.0	8.1	8.6	8.5	*	*	40,129
Gastroschisis	3,055,884	862	28.6	87.6	55.9	17.1	6.7	*	*	40,129
Limb reduction defect	3,055,884	451	15.0	19.7	15.8	12.8	16.5	12.3	*	40,129
Cleft lip with or without cleft palate	3,055,884	1,567	52.0	58.0	56.8	53.4	46.4	43.6	57.7	40,129
Cleft palate alone	3,055,884	694	23.0	25.0	21.4	22.0	24.4	21.2	35.8	40,129
Down syndrome	3,055,884	1,473	48.8	26.7	26.5	26.0	43.7	111.2	323.3	40,129
Suspected chromosomal disorder	3,055,884	1,186	39.3	35.2	33.4	31.1	35.7	61.0	127.0	40,129
Hypospadias[3]	3,055,884	1,681	55.7	55.2	55.6	57.2	54.2	59.3	42.7	40,129
Males only[4]	1,564,547	1,681	108.9	107.5	108.6	111.8	105.9	115.9	83.5	20,685

* Figure does not meet standards of reliability or precision; based on fewer than 20 births in the numerator.

[1] Total number of births to residents of areas reporting specified congenital anomaly.

[2] No response reported for congenital anomaly of the newborn item; includes births to residents of states using the 2003 Standard Certificate of Live Birth occurring in states using the 1989 Standard Certificate of Live Birth (0.6 percent). See "Technical Notes".

[3] Denominator includes both male and female births.

[4] Denominator includes males only.

NOTE: Includes California, Colorado, Delaware, District of Columbia, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Michigan, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Washington, and Wyoming.