Counting the Number and Percentage of Annual Births in the Medicaid Program at the National, State and Sub-State Levels

Introduction

Data on the number of live births in the Medicaid program, and the percentage of all live births in the United States paid for by the Medicaid program--nationally and by state--are available from multiple data sources.[1] There is no single source of data available in all states, or at the national level, to identify births paid for by the Medicaid program that has both complete live birth counts and complete, verified Medicaid eligibility information. Information from birth certificates can be used to count all live births at the national and sub-state level. However, birth certificates do not contain detailed or complete information about the payer (Medicaid or other). Similarly, although all states have data on who receives Medicaid services including deliveries, most do not have a mechanism for flagging births paid for by Medicaid as they occur that uses a consistent methodology allowing for comparability across states.

Counting the number of live births paid by the Medicaid program is useful when:

- demonstrating the importance of this population (pregnant women and infants) to the Medicaid program and to demonstrate that Medicaid is a key player in paying for services to pregnant women and their newborn;
- providing a denominator for studies of birth outcomes and expenditures;
- projecting Medicaid costs for births, pregnancy, and perinatal care, by socioeconomic characteristics, eligibility pathways, or risk factors; and
- projecting resource needs (for example, medical practitioner and hospital services needed for pregnant women; neonatal intensive care unit use).

This report describes the major types of data that have been used to compute the number and percentage of Medicaid live births, and compares counts and percentages using different datasets and methodologies. Differences among estimates reflect a variety of factors, including how Medicaid is identified and defined, the underlying data used, underreporting or non-reporting of data, and other differences in methodologies.

Sources of Data and Reasons for Variation among Datasets

The following section presents the major types of data sources that have been used to estimate the annual number of births and percentage of births paid by the Medicaid program. It describes the most commonly used data sources, and highlights advantages, limitations, and issues affecting interpretation of the statistics when using these different datasets.

Annual estimates of Medicaid birth counts and percentages for a given year, at the state or national level, can differ for a variety of reasons. These include, but are not limited to the following:

- **Data source.** These are described in general terms below, with examples of the major datasets used to produce Medicaid birth counts.
- **Information used to categorize births as Medicaid births**. Different datasets obtain information on Medicaid coverage in different ways, including asking respondents directly about their health care coverage, or taking data from administrative or claims data from the Medicaid program and assigning Medicaid status to enrollees for some time period. For datasets that include information based on respondents' identification of their coverage, different questions will elicit different estimates of Medicaid coverage. Respondents can be asked if they had Medicaid at a point in time (e.g., date of their survey interview), if they had Medicaid at any time over a certain period (e.g., the last 12 months or past year), or if they had Medicaid coverage for the actual birth or shortly before the birth.
- **Medicaid and related programs included.** Using Medicaid administrative data, some states include counts of births paid by separate State Children's Health Insurance Program (CHIP) in their estimates of Medicaid births; most do not. Other states include Medicaid expansion CHIP populations in their birth counts. Datasets not based on administrative data do not have the ability to distinguish CHIP programs.
- **Differential data quality or completeness.** Some states underreport Medicaid encounter data submitted by comprehensive Medicaid managed care plans, which would result in an undercount of all Medicaid births in those states. Other databases may have incomplete reporting for other reasons that may differ by state or vital statistics reporting area (for example, New York City and the rest of New York state are separate reporting areas). Some states that collect hospital discharge abstract data that can be used to count deliveries do not obtain data from all hospitals in the state.

There are several ways that Medicaid births can be identified in existing datasets. These include administrative databases of enrollment and claims data (e.g., the Medicaid Statistical Information System or MSIS database); hospital discharge abstract databases; birth certificate data collected by state vital statistics programs; surveys that ask about pregnancy and delivery; and databases that link data from at least two of the previous sources. The strengths and weaknesses of each type of data source are discussed below.

Medicaid Administrative/Claims Databases

Administrative data are used primarily for the day-to-day operation of a program. State Medicaid programs maintain enrollment and claims data used to determine eligibility for the program, and factors that may influence payment for services. Medicaid fee-for-service claims and managed care encounter data, which contain information about services submitted for payment, can also be classified as administrative data. While administrative data are not designed to address specific research questions, these data are often useful in determining what the program paid for, and information as available on the characteristics of individuals receiving services.

Counts of the annual number of births paid by the Medicaid program have been generated from Medicare Statistical Information System (MSIS) and Medicaid Analytic eXtract (MAX) datasets. These data are compiled by the Centers for Medicare & Medicaid Services (CMS) from detailed Medicaid eligibility and claims information reported on a quarterly basis by the 50 states and the District of Columbia since fiscal year 1999. The MSIS contains data used to determine eligibility and services provided for the Medicaid program. Medicaid Analytic eXtract (MAX) data files enhance MSIS files for research purposes.

Variables used to identify births. State Medicaid administrative systems identify pregnant women to determine eligibility based on pregnancy status, but typically do not include a specific data element or form that tracks women who become pregnant once enrolled. Inpatient hospital diagnosis and procedure codes can be used to determine information concerning the delivery (e.g. live birth versus stillborn, delivery by cesarean section, normal birth weight versus pre-maturity).

Utilization and expenditure data for maternal deliveries and newborn care are included in MSIS and MAX data (CMS 2013). When determining how to create this birth indicator in the MAX file, review of the literature indicated that the best way to identify deliveries is through diagnosis coding in inpatient hospital records (CMS 2013). Neither procedure coding in inpatient hospital records nor procedure (service) coding in physician records was determined to consistently identify maternal deliveries. However, a recent MACPAC analysis found that using both diagnosis and procedure codes increased the number of deliveries identified in MSIS data. The MACPAC analysis identified the number of births paid by Medicaid in 2008 using the following specific codes, listed on inpatient claims and inpatient encounter records:

- ICD-9-CM codes 650, 651-659, 660-669, 669.5x-669.7x,V27.x;
- DRG codes 370-371, 372-375, 765-766, 767-768, 774-775; and
- CPT codes 59514, 59620. 59409, 59612, 59515, 59622, 59410, 59614.

Alternatively, births could be identified from the newborn codes available on claims data, such as ICD-9-CM V30x codes that identify births by delivery method and birth status.

States may instruct Medicaid providers to code maternal deliveries using specific combinations of diagnosis and procedure codes, or to report births on forms not submitted to CMS to be included in

MSIS or MAX data. Therefore, analysts trying to identify births in MSIS or MAX data may have difficulty if claims have been submitted according to alternative reporting methods with insufficient documentation.

The number of Medicaid-covered births in a state is sometimes estimated by counting the number of children younger than 1 year of age who are enrolled in Medicaid. Since children can be enrolled at any point during their first year of life even if their births were not financed by Medicaid, this is not a particularly desirable method of counting births. In addition, in some states, there is a lag of several months after birth before newborns are enrolled in Medicaid. The number of Medicaid children younger than 1 year of age cannot be used to estimate the number of pregnant women because women can deliver more than one child during a year, and a single pregnancy can result in multiple births (Ellwood and Kenney 1995).

How Medicaid is defined. The specific programs included in any count of Medicaid births must be clearly defined when comparing birth counts across states. Because CHIP also covers some pregnant women and unborn children, some states or entities that count Medicaid births include CHIP and other state Medicaid expansion programs.

States count births paid by the Medicaid program, which may occur in another state if the woman was covered in her state of residence (e.g., residence of birth state vs. residence of mother). States are required to pay for out-of-state care, although some do not. In those states births would be undercounted if the mother delivered out-of-state (FamiliesUSA 2002).

Issues causing undercount or overcount of number and percentage of Medicaid births. The total number of delivery records in the MSIS or MAX may produce imprecise counts of actual deliveries due to both over- and under-reporting. Over-reporting may occur because there may be more than one stay record for the same maternal delivery (e.g., stays for false labor or stays for delivery-related complications). This can occur when maternal stays that do not result in a delivery are coded incorrectly as deliveries.

On the other hand, counts of newborn delivery stays in the MSIS or MAX data may undercount actual deliveries (or children born under Medicaid) if claims or encounter data are not submitted. Most states with managed care report at least some encounter data in MSIS, but births may be undercounted in states whose encounter data are incomplete or of low quality (Byrd and Verdier 2011). For example, in 2009, 30 states met the comprehensive managed care enrollment threshold for their adult Medicaid population. Of those 30, 7 did not submit more than 200 occupational therapy (OT) claims; one state submitted more than 200 claims, but those claims did not meet completeness and quality thresholds; and 22 states submitted OT encounters that met completeness and quality thresholds and were deemed usable for research (Byrd and Dodd 2012).

Because Medicaid administrative databases only contain information on enrolled individuals, percentages of all births under the Medicaid program cannot be generated from MSIS or MAX data.

To generate percentages population data must be obtained from a different data source. Typically birth certificate vital statistics data are used as the denominator when computing percentages of Medicaid births per population.

Medicaid Administrative/Claims Data

Strengths:
> ▶ Has most accurate information on Medicaid program characteristics (basis of eligibility, type of benefit, etc.) not found in any other national data source containing birth counts
> ▶ Has diagnosis and procedures that can identify births and pregnancy
> ▶ Sub-state analyses can be conducted

Limitations:
> ▶ Only counts can be computed, not percentages (requires a population data source for the denominator)
> ▶ Only has Medicaid population; no comparison groups
> ▶ State practices for coding and reporting vary
> ▶ Encounter data are not reported or underreported in some states, causing underestimates of birth counts
> ▶ Women go on and off Medicaid; may have prenatal care but no delivery care and vice versa while enrolled in Medicaid
> ▶ Depending on which databases are used, may include CHIP or waiver data that are not comparable to what other data sources consider Medicaid coverage, or that enrollees may not consider or report as Medicaid coverage

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Hospital Discharge Abstract Databases

Databases containing hospital discharge abstracts—which include information on a limited number of patient characteristics, diagnoses and procedures—can be used to identify births occurring in hospitals. Nearly all states currently collect hospital discharge data in some form. Differences among the states exist with regard to the specific data elements collected, how they are defined, data completeness, voluntary vs. mandatory data submission, and policies regarding data release (Schoenman et al. 2005). States collect this information for a variety of purposes, including public health and disease surveillance, public safety and injury surveillance, comparative purchasing reports, quality improvement initiatives, and other statistical needs. Other organizations such as hospital associations and some private vendors also collect hospital discharge and other hospital data. At the national level, the Healthcare Cost and Utilization Project (HCUP) is a family of health care databases and related software tools and products developed through a federal, state, and industry partnership and sponsored by the Agency for Healthcare Research and Quality (AHRQ). HCUP

databases bring together the data collection efforts of state data organizations, hospital associations, private data organizations, and the federal government to create a national information resource of patient-level health care data. The Nationwide Inpatient Sample (NIS) contains data from approximately 8 million hospital stays from roughly 1,000 hospitals; this approximates a stratified sample of 20 percent of U.S. community hospitals. The State Inpatient Databases (SID) contains the universe of inpatient discharge abstracts from data organizations. Currently 46 states participate in the SID. Not all states allow their data to be made available to the public but national estimates are generated by AHRQ (AHRQ 2013).

Variables used to identify births. As with claims data, births occurring in hospitals can be identified either through diagnosis and procedure codes associates with newborns (e.g., V30x ICD-9-CM codes) or diagnosis and procedure codes associated with the mother indicating a delivery.

How Medicaid is defined. Insurance status information in HCUP, and on hospital discharge-level databases in general, is based on primary expected source of payment reported on the discharge abstract. For statistics reported at the national level, available data in the NIS are weighted to obtain a nationally representative estimate of all discharges from community hospitals.

Hospital Discharge Abstract Data

Strengths:
> ► Contains births from all payers that allows comparison of populations
> ► Contains hospital characteristics
> ► Contains diagnoses and procedures associated with the delivery
> ► Can be used to compute both counts of births and percentage of births for Medicaid and other payers

Limitations:
> ► Includes only hospital births; omits births at birth centers, at home, and other places
> ► Identification of payer is not necessarily accurate because it is self-reported and is expected source of payment, not who actually pays
> ► CHIP is not a payer type option so hospitalization paid by CHIP may or may not be included in with Medicaid hospitalizations
> ► Hospitals may choose not to submit data or may provide incomplete data
> ► Has limited sociodemographic information
> ► Public use files cannot be used for sub-state analyses

Issues causing undercount or overcount of number or percentage of Medicaid births.
Several states have non-reporting hospitals, making their estimates lower than they would be if complete data were available. States with the highest underreporting (compared to American

Hospital Association data) are Minnesota (14.1 percent), Tennessee (8.5 percent), Kansas (6.3 percent) and Nebraska (4.6 percent) (Andrews 2013).

Patients covered by CHIP may be included under Medicaid, private insurance or other insurance, depending on the structure of the state program. Because most state hospitals do not identify CHIP source of payment in their discharge datasets specifically, it is not possible to present this information separately using HCUP data.

Because CHIP may be counted as Medicaid coverage by the hospital, estimates of Medicaid birth counts may be overestimated. Alternatively, because only expected primary source of payment is included on hospital discharge abstracts provided to HCUP, Medicaid may be not be recorded when it is a payer, or may be identified as the expected source of payment and not ultimately pay, due to ineligibility of the patient or other reasons.

Vital Statistics Databases

State laws require birth certificates to be completed for all births, and federal law mandates national collection and publication of births and other vital statistics data (NCHS 2013). At the national level, the National Center for Health Statistics through its National Vital Statistics System (NVSS) collaborates with states and data organizations to compile selected items from the birth certificate from all states and other reporting areas to produce national vital statistics on births, including comparisons of birth counts, rates and characteristics by state.

Variables used to identify births. Birth certificate data is considered the gold standard in counting the number of unique births in each state, and as collected by NCHS, nationally. Birth records contain a range of demographic data including conditions at birth, race, ethnicity, age of mother, residence of mother, birthweight of baby, prematurity, obstetric care, and infant death.

How Medicaid is defined. Because birth registration is required, birth records including insurance data provide a good ongoing population-based source of information on third-party coverage for maternity care at the state and county levels. Prior to use of the 2003 certificate of live birth, the birth certificate did not contain information on payment for the birth. The 2003 birth certificate contains a new checkbox with information on principal source of payment for the delivery. This format is being phased in as of January 1, 2011; 36 states had implemented the new certificate by then (Hamilton et al. 2012; Osterman et al. 2011).

Issues causing undercount or overcount of Medicaid births. Vital statistics are the best source for counting the number of births in the national and sub-national levels. As birth certificate data become available with the source of payment checkbox, they may increasingly be used to count the number of births to women on Medicaid. Even so the check box for insurance coverage is reported either by the mother or hospital representative, and may not be accurate due to misclassification by the reporting entity, or by failure to check a box at all. Reporting entities that are familiar with

CHIP, for example, may classify their coverage as "other", while some respondents may classify it as Medicaid. One study comparing birth certificate data in two states to hospital medical record data found that 73 percent and 79 percent of cases had the same Medicaid status, and there was wide variation across hospitals in congruence of Medicaid status (Sutton 2012). The study did not compare these data with Medicaid administrative data, and so did not determine which source had accurately recorded Medicaid status.

Miscounts may also occur when the mother's state of residence and the state of the actual birth differ. States register births in the state where the birth occurred. This is not necessarily the state that the mother resided or was enrolled in Medicaid. This may result in an undercount of births in states where many women give birth elsewhere, and an overcount in the states that attract births from other states.

Vital Statistics/Birth Certificate Data

Strengths:
  ▶ Contains all births in the U.S.; state and local analyses possible
  ▶ Source of payment is included on the 2003 Live Certificate of Birth but is not available on public use files or included in NVSS reports and is difficult to obtain (expected to be released in fall 2013 for 2011 data)

Limitations:
  ▶ Insurance status is self-reported by mother or reported by medical practitioner
  ▶ Checkbox on birth certificate only lists Medicaid; does not list CHIP on birth certificate

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Survey Databases

Several nationally representative health surveys collect data on pregnancy status and births to respondents. Because a survey by definition is a sample of the target population where everyone in the target population has a known probability of being sampled, surveys can be used to obtain the percentage, but not the number, of births to Medicaid enrolled mothers or infants for the nation, states, or sub-state areas. Counts must be obtained by weighting the sample to some control total, usually taken from NVSS birth certificate counts.

Variables used to identify births. Surveys identify births either by asking respondents if they have given birth over some specified time period, or by identifying survey participants from another source that identifies births. The Pregnancy Risk Assessment Monitoring System (PRAMS) of the Centers for Disease Control and Prevention (CDC) samples women who have had a recent live birth using data from the state's birth certificate file. Other surveys such as the American Community Survey (ACS) and the Current Population Survey (CPS) conducted by the United States Census Bureau ask women respondents if they gave birth in the past year.

How Medicaid is defined. Several surveys such as the ACS and CPS include questions on insurance status including Medicaid coverage (Dye 2008).[2] Because specific questions are not asked about Medicaid status at the time of the pregnancy or delivery, however, these datasets cannot be used to produce estimates of the percentage of Medicaid births. State-level estimates of coverage for maternity care are available for approximately 22 states that participate in the ongoing PRAMS which includes the question: "Just before you got pregnant, were you on Medicaid?" (CDC 2013). The sampling used in PRAMS does not allow for reliable county-level or small subgroup analyses.

Survey Databases

Strengths:
- ▶ Comparison groups available
- ▶ Detailed sociodemographic and other survey-obtained information

Limitations:
- ▶ Self-reported insurance coverage; often point in time
- ▶ No ability to generate counts, only percentages
- ▶ Limited clinical information/comorbid conditions
- ▶ Small sample sizes; sub-state analyses not usually possible

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Issues causing undercount or overcount of Medicaid births. As mentioned for other data sources, respondent-reported Medicaid coverage is not always accurate and can result in under- or over-counts of Medicaid births.   In addition, because surveys interview respondents over some time period, questions about whether births occurred in the past year make it difficult to count births for an annual time period that may not correspond to a calendar year. The PRAMS is the most useful survey dataset for counting births because it uses actual birth certificate data to select respondents, but it also cannot be used to accurately assess the percentage of women with a Medicaid-paid birth in a calendar year. PRAMS can be used to assess the percentage of women in a state who reported that Medicaid paid for their birth for a given data collection period.

Linked Databases

Linking the most accurate and complete data on birth counts in general (from vital statistics) and the most granular and accurate information on Medicaid coverage (from Medicaid administrative data) is one way to take advantage of the strengths of different sources. Such linkages can also be helpful in characterizing the pregnancy risks and birth outcomes in Medicaid covered populations, assessing whether Medicaid program innovations have an identifiable impact on these risks and outcomes, and linking expenditure studies to clinical information on mothers and infants.

Variables used to identify births. Births are identified according to how the data sources being linked define them. In most cases birth certificate data are linked to another source and used for defining births.

How Medicaid is defined. Medicaid is also defined by the data source being used. Medicaid administrative data are the best source for identification of Medicaid payment.

Issues causing undercount or overcount of Medicaid births. Data collection affects usability of personally identifiable information for linkage. Respondents in some data sources may refuse to provide permission to link their data, or may not provide identifiers necessary for linkage. Formal names (Deborah) and informal names (Debbie) can be hard to link. Naming conventions may lead to different PII on each source. Typically, states that have conducted Medicaid claims birth/certificate linkages report a 90 to 93 percent match between indicators of a delivery paid by Medicaid and a birth certificate (Bronstein et al. 2009). Linkage success depends on the availability and quality of common identifiers in the two sources, and various procedures are used to validate the match between identifiers.

Once the matching is completed, it is important to identify any biases that have occurred which might have excluded a subpopulation with specific characteristics from the linked data set, because the records were systematically less likely to match across the source data sets. Two types of selection bias may occur in matching: bias in selecting records from claims data to match with vital records, and bias because some of the selected records from claims do not successfully match to vital records. Using only Medicaid claims for delivery procedures, rather than any indication in claims of a pregnancy, as the basis for matching with vital records excludes some pregnancies with early terminations and pregnancies where deliveries were irregularly billed. Matching where vital records are typically incomplete for a subpopulation or geographic area will yield a matched file that under-represents that population (Bronstein et al. 2009).

Linked Datasets

Strengths:
- ▶ Yields information about incomplete pregnancies in the population
- ▶ More completely accounts for Medicaid expenditures on pregnant recipients
- ▶ Reduces the selection bias that occurs if only Medicaid beneficiaries with paid claims for deliveries are included in the analysis file.

Limitations:
- ▶ Not all records may link due to lack of suitable identifiers, causing incomplete counts that may affect some subpopulations more than others
- ▶ Requires cooperation between the data source owners

For example, one analysis that was conducted using Florida PRAMS and birth certificate data compared reporting of Medicaid payment for deliveries, using these two sources for the same birth (Watson and Sappenfield 2013). The birth certificate only identified 78 percent of all the women whose delivery was paid for by Medicaid and identified almost all of the women whose delivery was not paid for by Medicaid. The birth certificate was correct 97 percent of the time when identifying a delivery paid for by Medicaid, but the birth certificate data was correct only 78 percent of the time when identifying a delivery was not paid for by Medicaid. In the latter case, the birth certificate was incorrect about one out of four times, suggesting these data are biased. Therefore although the birth certificate does not seem to identify all Medicaid births, the ones identified as Medicaid births appear to be correctly classified as such.

Comparison of Annual Medicaid Birth Counts and Percentages from Different Data Sources

MACPAC compared estimates of the annual number of births (Table 1) and annual percentage of Medicaid births (Table 2) across several data sources. Data represent the latest year available for each data source. Columns representing data provided to the National Governor's Association (NGA) in their annual Maternal and Child Health Survey update are based on each state's methodology and are described in notes to the tables.[3] Several states do not report to the NGA, and several states either do not participate in HCUP or do not allow their data to be used as part of the public use Statewide Inpatient Sample which was used to generate the estimates in the tables presented here. When neither HCUP nor NGA data were available to compare with MSIS estimates, we attempted to find another data source to be used for comparison purposes. These are listed in the other data categories of the tables, and include the year of data and the data source used. In some cases 2009 data were not submitted to NGA but data were submitted in earlier years that are included in the tables.

For some states, data sources are remarkably consistent in their estimates, whereas in others there are wide divergences, for the reasons described above. For example, Arizona, Arkansas, Colorado, Iowa, Kentucky, Maine, Maryland, Missouri, Oklahoma, Oregon, South Dakota, and Wyoming have estimates that differ by only a few thousand births between HCUP and MSIS estimates, which could be due to different years of data and the omission of non-hospital births from HCUP. For some states, however—for example Hawaii, Nebraska and West Virginia—estimates from HCUP are double or even triple those from the MSIS. This may be due in part to underreporting of encounter data in these states or some other reporting issue in MSIS. When comparing estimates for Minnesota, HCUP and MSIS estimates are quite close but the data submitted to NGA include expansion program counts, which make the NGA estimate of the number of Medicaid births substantially higher than for the other two sources.

When examining the percentage of births to Medicaid, this same pattern holds. Some states have estimates that vary little across data sources, while others have estimates differing by 10 or more

percentage points. Because of the large difference between HCUP, NGA and MSIS counts in many states, we did not compute the percentage of Medicaid births using the total number of births in 2010 as the denominator. It is important to note that, because MSIS appears to undercount births in some states, the percentage of Medicaid births estimate will differ considerably from estimates taken from HCUP or other data sources.

Discussion

Although it might appear to be simple to count the number and percentage of births paid for by the Medicaid program over the course of one year in a consistent manner across states, this does not appear to be the case. States compute these statistics using different data sources and methodologies, and each data source has different strengths and limitations. Depending on the data source, variable definitions, and methodology, estimates can be vastly different. Policy analysts and researchers interested in comparing Medicaid birth counts or percentages across states and localities should be aware of these differences when evaluating the importance of providing services for, or paying for, these births.

Table 1: Annual Total and State Medicaid Birth Counts

	Vital Statistics Total Births in U.S. (2010)	HCUP(2010)		NGA (2009)	MSIS (2008)	Other Medicaid births	Other Year for data	Other source
		HCUP Total births	HCUP Medicaid births	NGA Medicaid births	MSIS Medicaid births			Other Source of other data
United States	3,999,386	3,905,481	1,812,129		1,577,433			
Alabama	60,050				27,570	30,701	2010	http://www.adph.org/healthstats/assets/CHP2010.pdf
Alaska	11,471			5,891	3,609			
Arizona	87,477	84,805	43,505	49,538	52,137	48,006	FY2012	http://www.azahcccs.gov/reporting/Downloads/AHCCCSBirths/AHCCCSBirthsSept2012.pdf
Arkansas	38,540	37,235	20,763	25,337	20,125			
California	510,198	495,252	244,358		215,704	232,241	2006	http://www.dhcs.ca.gov/dataandstats/statistics/Documents/Medi-Cal%20Births%20-%20CY%202006%20(Web%201-12-2011).pdf
Colorado	66,355	60,266	23,761	26,101	22,731			
Connecticut	37,708			14,500	5,822	14,485	2010	http://www.ctvoices.org/sites/default/files/h13birthsreport10.pdf
Delaware	11,364			6,202	2,561	6,439	2008	NGA 2010
DC	9,165				1,771	3,321	2010	http://www.medicaid.gov/State-Resource-Center/Events-and-Announcements/Downloads/Quality-Conference-2011/Ann-Page-Measure_Birth_Outcomes_Admin_Data.pdf
Florida	214,590	209,525	115,145		69,570	108,836	2012	http://www.floridacharts.com/charts/DataViewer/BirthViewer/BirthViewer.aspx?cid=595
Georgia	133,947				66,607	84,535	2006	http://www.marchofdimes.com/peristats/ViewSubtopic.aspx?reg=13&top=11&stop=154&lev=1&slev=4&obj=1&dv=cr (taken from NGA survey)
Hawaii	18,988	15,804	6,609		2,310		2006	http://www.marchofdimes.com/peristats/ViewSubtopic.aspx?reg=15&top=11&stop=154&lev=1&slev=4&obj=1&dv=cr
Idaho	23,198				9,618	9,760	2008	NGA 2008
Illinois	165,200	157,019	67,524	81,104	58,844			
Indiana	83,940			41,793	36,861			
Iowa	38,719	38,043	15,282	15,732	14,228	15,357	2011	http://www.idph.state.ia.us/hpcdp/common/pdf/family_health/2011_medicaid_certificate.pdf

State							Year	Source
Kansas	40,649	38,951	12,023		14,429		2006	http://www.marchofdimes.com/peristats/ViewSubtopic.aspx?dv=rdo&reg=20&top=11&stop=154&lev=1&cmp=41&slev=4&eny=&sty=&chy=&obj=8
Kentucky	55,784	50,343	24,900	24,604	28,739			
Louisiana	62,379				37,722	82,052	FY 2011-12	http://dhh.louisiana.gov/assets/medicaid/AnnualReports/Medicaid_10_11_fnl.pdf f
Maine	12,970	12,463	5,322	5,400	6,252			
Maryland	73,801	68,089	29,638	30,267	28,285			
Massachusetts	72,865	71,810	23,573	12,913	7,725			
Michigan	114,531	112,481	51,630		28,197			http://datacenter.kidscount.org/data/bystate/Rankings.aspx?state=MI&ind=1716
Minnesota	68,610	63,563	12,454	31,209	12,484			NGA 2010
Mississippi	40,036				27,142	28,319 26,689	2007 2010	NGA 2010 http://www.medicaid.ms.gov/Documents/TotalDeliveries.pdf
Missouri	76,759	75,278	35,750	31,326	34,994	35,424	2004	http://health.mo.gov/data/focus/pdf/FOCUS_Mar06.pdf
Montana	12,060		12,076		4,098			
Nebraska	25,918	25,667	9,710	11,668	2,922			
Nevada	35,934	34,458	12,922	17,753	6,602			
New Hampshire	12,874			3,912	3,726			
New Jersey	106,922	103,130	25,444		14,941			
New Mexico	27,850	24,917	15,037		17,691	19,863	2010	http://www.nmlegis.gov/lcs/lfc/lfcdocs/perfaudit/Human%20Services%20Department%20-%20Improving%20Outcomes%20for%20Pregnant%20Women%20and%20Infants%20Through%20Medicaid.pdf
New York	244,375	239,999	104,641		116,913	106,676	2007	NGA 2010
North Carolina	122,350	116,184	59,800	64,439	65,701			
North Dakota	9,104				2,424	2,864	2007	NGA 2010
Ohio	139,128				10,391	61,091	2007	http://jfs.ohio.gov/ohp/bhpp/reports/mic2009.pdf (reported to NGA 2007)
Oklahoma	53,238	48,758	29,590	33,898	30,399			
Oregon	45,540	43,538	19,851	19,664	18,119			
Pennsylvania	143,321		57,371		17,479		2008	NGA 2010
Rhode Island	11,177	11,815	5,341		3,947			
South Carolina	58,342	54,510	25,102		26,467		2007	PRAMS: http://www.scdhec.gov/co/phsis/biostatistics/index.asp?page=bio
South Dakota	11,811		4,662		4,459			
Tennessee	79,495	73,816	38,462	43,000	36,277			

State						Year	Source
Texas	386,118	369,475	191,496	216,452		2009	http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Waivers/1115/downloads/tx-womens-health-waiver-pa.pdf
Utah	52,258	51,941	17,581	15,045	15,615		
Vermont	6,223	5,630	2,594	2,827	2,642		
Virginia	103,002		28,047	31,193		2007-2008	http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2971635/
Washington	86,539	79,463	31,482		20,607	42,891	2010	http://www.medicaid.gov/State-Resource-Center/Events-and-Announcements/Downloads/Quality-Conference-2011/Laurie-Cawthon-Records_Linkage_WA.pdf
West Virginia	20,470	19,753	11,653	12,001	2,415	about 10,000	2010	http://www.wvpolicy.org/downloads/WVCBP_Medicaid_Made_Simple101211.pdf
Wisconsin	68,487	66,037	24,954		19,031		2006	http://www.marchofdimes.com/peristats/ViewSubtopic.aspx?reg=55&top=11&stop=154&lev=4&slev=4&obj=1&dv=cr
Wyoming	7,556	6,234	2,045	3,401	3,222		2011	http://datacenter.kidscount.org/data/bystate/Rankings.aspx?state=WY&ind=3504

Notes: See text for additional methodological information.

Vital Statistics: Total births in U.S.: Martin J.A., B.E. Hamilton , S.J. Ventura, et al. 2012. Births: Final data for 2010. *National vital statistics reports*, 61 no 1. Hyattsville, MD: National Center for Health Statistics. http://www.cdc.gov/nchs/data/nvsr/nvsr61_01.pdf.

HCUP: HealthCare Cost and Utilization Project, Nationwide Inpatient Sample and State Inpatient Databases. Medicaid is based on primary expected source of payment reported on the discharge abstract. Several states have non-reporting hospitals which makes their estimates underreports. States with the highest underreporting (compared to American Hospital Association data) are Minnesota (14.1%), Tennessee (8.5%), Kansas (6.3%) and Nebraska (4.6%). Estimates from the Nationwide Inpatient Sample are weighted to reflect all discharges from community hospitals.

NGA: National Governor's Association. The 2010 Maternal and Child Health Update published by the NGA presents 2010 data gathered from U.S. states and territories in the annual maternal and child health survey conducted by the National Governors Association Center for Best Practices (NGA Center).

1 For Colorado data are from the Inpatient Utilization Reports created by the Colorado Foundation of Medical Care. Colorado's total births are from the U.S. Census Bureau, State Population Estimates by Component of Change.

2 Connecticut calendar year matches Department of Social Services claims data with Department of Public Health Vital Records. 2009 data is an estimate.

3 Massachusetts' birth data include CHIP births.

5 Medicaid births for Minnesota include births in Minnesota's 1115 Medicaid expansion program (MinnesotaCare).

6 Montana's definition of a Medicaid birth is any child that had a paid Medicaid claim indicating delivery or a paid Medicaid claim in the first month of life, or a child that has been matched to a mother eligible for Medicaid and the mother had a paid Medicaid claim indicating a delivery.

7 Oregon bases the number and percentage of Medicaid births on Medicaid claims data.

8 Virginia data are based on the state fiscal year and are derived from the Virginia Department of Health, Office of Vital Statistics.

MSIS: Medicaid Statistical Information System. Includes Medicaid-expansion CHIP enrollees and excludes separate CHIP program enrollees. Low numbers of births in some states may indicate that the state has incomplete reporting of managed care encounter data.

Table 2: Annual Total and State Medicaid Birth Percentages

	HCUP Percent Medicaid births (2010)	NGA Percent Medicaid births (2009)	Other source Percent Medicaid births	Year for other source	Source for other sources
United States (number)	46%				
Alabama			53%	2010	http://www.adph.org/healthstats/assets/CHP2010.pdf
Alaska		53%			
Arizona	51%	54%			
Arkansas	56%	64%	66%	2011	http://humanservices.arkansas.gov/reportDocuments/Medicaid%20Program%20Overview.pdf
California	49%		41%	2006	http://www.dhcs.ca.gov/dataandstats/statistics/Documents/Medi-Cal%20Births%20-%20CY%202006%20(Web%201-12-2011).pdf
Colorado	39%	38%			
Connecticut			38%	2010	http://www.ctvoices.org/sites/default/files/h13birthsreport10.pdf
Delaware			54%	2008	NGA 2010
DC			42%	2006	http://www.marchofdimes.com/peristats/ViewSubtopic.aspx?reg=11&top=11&stop=154&lev=1&slev=4&obj=1&dv=cr
Florida	55%		51%	2012	http://www.floridacharts.com/charts/DataViewer/BirthViewer/BirthViewer.aspx?cid=595
Georgia			57%	2006	http://www.marchofdimes.com/peristats/ViewSubtopic.aspx?reg=13&top=11&stop=154&lev=1&slev=4&obj=1&dv=cr
Hawaii	42%		36%	2006	http://www.marchofdimes.com/peristats/ViewSubtopic.aspx?reg=15&top=11&stop=154&lev=1&slev=4&obj=1&dv=cr
Idaho			39%	2008	NGA 2010
Illinois	43%		53%	2012	http://www2.illinois.gov/hfs/agency/Documents/Medicaid101.pdf

State				Year	Source
Indiana	40%		45%	2006	NGA 2010
Iowa			40%	2011	http://www.idph.state.ia.us/hpcdp/common/pdf/family_health/2011_medicaid_certificate.pdf
Kansas	31%		43%	2006	http://www.marchofdimes.com/peristats/ViewSubtopic.aspx?dv=rdo&reg=20&top=11&stop=154&lev=1&cmp=41&slev=4&ceny=&&sty=&&chy=&&obj=8
Kentucky	50%	44%			
Louisiana			65%	2006	http://www.marchofdimes.com/peristats/ViewSubtopic.aspx?dv=rdo&reg=22&top=11&stop=154&lev=1&cmp=30&slev=4&ceny=&&sty=&&chy=&&obj=8
Maine	43%	40%			
Maryland	44%	40%			
Massachusetts	33%				
Michigan	46%		46%	2008	NGA 2010
Minnesota	20%		42%	2008	NGA 2010
Mississippi			61%	2007	NGA 2010
Mississippi			72%	2008	http://msdh.ms.gov/msdhsite/_static/resources/5078.pdf
Missouri	48%	48%			
Montana			35%	2008	NGA 2010
Nebraska	38%	43%			
Nevada	38%	48%			
New Hampshire		32%			
New Jersey	25%				
New Mexico	60%		71%	2010	http://www.nmlegis.gov/lcs/lfc/lfcdocs/perfaudit/Human%20Services%20Department%20-%20Improving%20Outcomes%20for%20Pregnant%20Women%20and%20Infants%20Through%20Medicaid.pdf
New York	44%		48%	2008	http://www.health.ny.gov/statistics/chac/birth/medslf65.htm

State				Year	Source
North Carolina	52%	51%			
North Dakota			30%	2007	NGA 2010
Ohio	61%		40%	2007	http://jfs.ohio.gov/ohp/bhpp/reports/mic2009.pdf (reported to NGA 2007)
Oklahoma		64%			
Oregon	46%	43%			
Pennsylvania			39%	2008	NGA 2010
Rhode Island	45%				
South Carolina	46%		55%	2007	PRAMS: http://www.scdhec.gov/co/phsis/biostatistics/index.asp?page=bio
South Dakota		39%			
Tennessee	52%	49%			
Texas	52%	34%	56%	2009	http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Waivers/1115/downloads/tx/tx-womens-health-waiver-pa.pdf
Utah	34%	34%			
Vermont	46%	44%			
Virginia		27%	27%	2007–2008	http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2971635/
Washington	40%		50%	2010	http://www.medicaid.gov/State-Resource-Center/Events-and-Announcements/Downloads/Quality-Conference-2011/Laurie-Cawthon-Records_Linkage_WA.pdf
West Virginia	59%		49%	2010	http://www.wvpolicy.org/downloads/WVCBP_Medicaid_Made_Simple101211.pdf
Wisconsin	38%		44%	2006	http://www.marchofdimes.com/peristats/ViewSubtopic.aspx?reg=55&top=11&stop=154&lev=1&slev=4&obj=1&dv=cr
Wyoming	33%	43%	37%	2011	http://datacenter.kidscount.org/data/bystate/Rankings.aspx?state=WY&ind=3504

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HCUP: HealthCare Cost and Utilization Project, Nationwide Inpatient Sample and State Inpatient Databases. Medicaid is based on primary expected source of payment reported on the discharge abstract. Several states have non-reporting hospitals which makes their estimates underreported. States with the highest underreporting (compared to American Hospital Association data) are Minnesota (14.1%), Tennessee (8.5%), Kansas (6.3%) and Nebraska (4.6%). Estimates from the Nationwide Inpatient Sample are weighted to reflect all discharges from community hospitals.

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Endnotes

[1] This report does not include stillbirths or fetal deaths when attempting to count births. Fetal deaths, including stillbirths, must be recorded on a certificate of fetal death that are collected by states.

[2] The CPS question used to obtain information on Medicaid coverage is:
At any time in [Year], (were you/was anyone in this household) covered by Medicaid/(state name)?
READ IF NECESSARY: Medicaid/(state name) is the government assistance program that pays for health care. The American Community Survey, starting in 2008, asks respondents if they had seven different types of coverage (or "other") as of the date of the survey, including "Medicaid, Medical Assistance, or any kind of government-assistance plan for those with low incomes or a disability (e.g., a point in time estimate) (Databases for Estimating Health Insurance Coverage for Children: A Workshop Summary (2010))
http://www.nap.edu/openbook.php?record_id=13024&page=14 and
http://www.census.gov/acs/www/Downloads/QbyQfact/health_insurance.pdf).

[3] The NGA annual Maternal and Child Health update can be found at
http://www.nga.org/files/live/sites/NGA/files/pdf/MCHUPDATE2010.PDF.