

**Progress on the Implementation of IC 16-38-4-7 (Birth Problems Registry) as amended in First Regular Session 112th General Assembly (2001)
Reporting Period: July 2014 – June 2015**

The Indiana Birth Defects and Problems Registry (IBDPR) is a population-based surveillance system that seeks to promote fetal, infant, and child health. The purpose of the Registry is to prevent birth defects and childhood developmental disabilities and to enhance the quality of life of affected Indiana residents.

Birth defects are conditions present at birth that affect the structure or function of an infant's body. They can cause physical, mental, or medical problems. Birth defects affect about 1 in 33 babies born in Indiana each year. They are the leading cause of infant deaths, accounting for more than 20 percent of all infant deaths (National Vital Statistics Report, vol. 63, Number 3, 2015). Babies who survive and live with birth defects are more likely to have life-long physical and cognitive challenges. Annually in the United States, the total hospital costs of children with birth defects exceed \$2.6 billion (Healthcare Cost and Utilization Project statistical brief number 24, 2007). Some of these cases are entirely preventable, while others could be identified early and treated or managed in order to improve the quality of life of affected infants and their families.

The 1986 Indiana General Assembly enacted a law (IC 16-4-10-6) to establish the Birth Problems Registry by January 1, 1987. In 2001, the Indiana Birth Problems Registry law (IC 16-38-4-7; 410 IAC 21-3) was amended to allow additional data sources to be used to improve the quality of the data. Indiana Code 16-38-4-1 was amended in 2013 to include complications resulting from home deliveries. Data regarding homebirths can be found in Table 9 below. During the 2014 legislative session, House Enrolled Act (HEA) 1358 made an amendment to Indiana State Department of Health (ISDH) Birth Defects and Problems Registry, requiring it to collect data on autism spectrum disorders (referred to throughout the report as ASDs) for individuals at any age. Hospitals and other health care providers were informed about the new reporting requirement effective July 1, 2014.

Data from the Indiana Birth Defects and Problems Registry will be used to detect trends in birth defects and suggest areas for further study; to identify epidemiological factors associated with birth defects; to address community concerns about the environmental effects on birth outcomes; to evaluate education, screening, and prevention programs; and to establish efficient referral systems that provide special services for the children with identified birth defects and their families.

Case Ascertainment

IBDPR is considered a “passive” system because initial case determination is through the electronic submission of hospital discharge data (HDD), with defined ICD-9-CM codes that identify birth defects and problems. However, in the early stages of program development, it was determined that up to 25% of the HDD was invalid. Therefore, the program protocols were updated to include medical chart audits (indicative of an “active” birth defects registry) on 49 targeted birth defects as well as failed pulse oximetry screening for critical congenital heart defects (CCHD). The 49 targeted conditions include 47 conditions that are reportable to the CDC, plus autism spectrum disorders and fetal alcohol syndrome. These chart audits are utilized to improve the quality of data submitted to the CDC and to the Indiana State General Assembly.

Due to the legislative changes described above regarding autism spectrum disorders (ASDs), a change in the audit process for those individuals reported to IBDPR was implemented. Previously, if a child was reported through HDD with autism, a medical chart audit would be completed on that child’s medical records. Indiana Code 16-38-4-8 now requires confirmation of diagnosis of any ASD for children reported to IBDPR up to eight years of age. Therefore, medical chart audits are now completed on children up to eight years of age reported through HDD with an ASD. The tables below reflect the changes in legislation in regards to ASD. In previous years, autism and other ASDs were separated to reflect autism as a targeted condition (47 conditions reportable to the CDC) and other ASDs as reportable conditions (reportable to ISDH but not to the CDC). Because all ASDs are now targeted conditions, they are combined in a single category to reflect the total number of individuals reported with an ASD in the tables below. ASDs are described in all tables below as “Pervasive Developmental Disorders, including autism, childhood disintegrative disorder, Asperger’s syndrome, Rett syndrome and pervasive developmental disorders not otherwise specified.”

Hospital Reporting

Hospitals are required to report birth defects data to the IBDPR when coding of hospital discharge records is completed each month. Currently, all 115 reporting hospitals submit monthly discharge data using the ISDH State Health Gateway web portal. As of mid September 2015, 40 hospitals had completed reporting up to August, 46 hospitals had reported up to July, 16 hospitals up to June, seven hospitals up to April, two hospitals up to March, and two hospitals up to January of 2015. The remaining two hospitals have reported up to November 2014. Several

reasons exist for delays or irregularities in data reporting such as changes in data collection or recording systems and lack of resources at those facilities (including lack of health information management, medical records, and/or information technology staff).

Physician Reporting

In addition to hospital discharge data, the IBDPR uses an active Physician Reporting System to identify children with birth defects that may not be diagnosed at birth and may, therefore, be diagnosed in a doctor's office rather than a hospital. Since IBDPR staff consider a physician's submission to be confirmation of a diagnosis, no chart auditing is done for birth defects reported by the Physician Reporting System. If the IBDPR has received duplicate information from both a hospital and a physician's office, the physician's report will serve as confirmation of that birth defect and no chart audit will be done at the hospital. IBDPR staff expect that reports of children with autism spectrum disorders and fetal alcohol spectrum disorders will be determined primarily through physician reporting, since the diagnostic criteria for these conditions include developmental delays that are not detectable at birth.

In January 2015, an electronic information packet was sent to physicians in recognition of January being Birth Defects Awareness Month and to encourage the use of the web-based Physician Reporting Center within the ISDH State Health Gateway. The electronic packet included a letter from the State Health Commissioner reminding physicians of the legal requirement for reporting to the IBDPR with links to the ISDH State Health Gateway, a list of reportable conditions and instructions for accessing and creating an account within the ISDH State Health Gateway. This information packet was sent to statewide health care providers from the State Health Commissioner's e-mail account. Provider e-mail addresses were obtained by combining information from the Indiana Professional Licensing Agency and the Centers for Medicare and Medicaid Services.

During the current reporting period (July 2014 - June 2015), 408 reports representing 401 children with birth defects were reported by 40 physicians, six psychologists and three other authorized health care providers (such as osteopathic physicians and medical residents).

Application Development

Beginning in 2013, an initiative began to move the old IBDPR Chart Audit Stand Alone (CASA) software to a newer web-based application. The initiative took approximately one year to complete, and in July 2014, the IBDPR was functioning within the web-based application. As a precaution to preserve data integrity, chart auditors were not able to complete medical chart audits during this transition. When the project was complete in July 2014, chart auditors were trained to use the IBDPR module within the web-based application. Medical chart audits resumed after this training.

Some discrepancies have been observed between data collected by the CASA system and data collected by the newer web-based application system for the same year. However, data collection over a longer period of time is needed in order to assess how data integrity has been affected by this change. It is currently still too early to tell, but IBDPR staff expect that the current system is more accurate than the older CASA system, which is one explanation for observed differences.

Program Development

Each time a change occurs within the rules regarding case reporting and which conditions to target, IBDPR staff ensure that appropriate personnel, including health care providers and birthing facility staff, receive timely notification on legislative change. In response to the amendment of IC 16-38-4-8 regarding reporting of ASDs, hospitals and physicians were made aware of the change that took effect on July 1, 2014.

Due to the development and proceeding initial rollout of the IBDPR web-based application as described above, the number of individual completed chart audits was substantially less last year than in previous years. During that shortened audit period of only three months, auditing efforts were concentrated on larger birth facilities where most children are reported through HDD. Although this shortened chart auditing occurred during the reporting period for last year's report, there are four years of overlap between last year's report (covering births from 2007 through 2011) and this year's report (covering births from 2008 through 2012). IBDPR chart auditors therefore were further behind than normal and were unable to completely catch up before the reporting period ended. Lower percentages of confirmed or probable cases are reflected in Table 5 due to the decreased number of completed and reviewed audits. It is expected that the number of audited and reviewed medical chart audits will return to normal in 2016.

Although the initiative to move IBDPR into a web-based application created challenges such as the inability to complete all audits, the application now allows for an improved user-interface experience. The web-based application also allows for the appropriate linkage of data between programs. For example, the IBDPR is now able to link with pulse oximetry newborn screening data in order to verify if critical congenital heart disease (CCHD) was present when a baby did not pass the pulse oximetry screen. This allows for a more accurate assessment of false positives occurring with pulse oximetry in the state.

Because the current report covers a time period from 2008 through 2012, and state-wide implementation of mandatory newborn pulse oximetry screening began on January 1, 2012, so there is currently one year of data overlap of pulse oximetry data and reported birth defects data. As mentioned above, however, the chart auditing for 2012 was incomplete. It is expected that more complete data will be available in the 2016 report.

It is important to note that there were several staff changes during the reporting period as well that affected the ability to audit medical records and review the audits. Initially, two part-time staff members audited charts in hospitals in the northern region of the state, one full-time staff member audited charts in the central region of the state (focusing mostly on the Indianapolis area), and one part-time staff member audited charts in the western and southern regions of the state. However, the part-time auditor in the western and southern regions of the state left approximately halfway through the reporting period, and the program was unable to fill the position. Therefore, caution should be taken when comparing numbers of confirmed or probable birth defects for different geographic areas, since auditing did not occur evenly throughout the state. Additionally, there were multiple staff members who reviewed chart audits for validity (in order to confirm or invalidate audited birth defects). Slight differences in how these individuals reviewed cases could at least partially account for changes in the numbers of probable or confirmed cases for some of the disorders.

The change in IC 16-38-4-8 now requires the state department to provide information on autism spectrum disorders (ASD) resources to families of children or individuals reported to the IBDPR with an ASD. The program developed an ASD follow-up module within the application in early 2014 to comply with this requirement. The module is now used as a tool for the IBDPR program to send informational letters to families of children or individuals reported to the registry with an ASD over the age of eight years. The program also worked very closely

with the Children's Special Health Care Services program at ISDH to perform verbal follow-up with families of children reported to the registry with an ASD under the age of eight.

National Meetings Attended

The annual meeting of the National Birth Defects Prevention Network (NBDPN) was not held during the reporting period of July 2014-June 2015. The Centers for Disease Control and Prevention (CDC) held this meeting in October of 2015. It is designed to enhance relationships between federal, state, and professional organizations that are working towards common goals, and provided an opportunity to discuss successful efforts related to reducing and preventing birth defects. One ISDH IBDPR staff member attended this meeting.

Statute Requisites

As the IBDPR collects data daily on children from birth to three years of age (or five for FASDs or any age for ASDs), the same report for the same time period compiled on different dates may indicate different values. The data for this report was compiled on 9/30/2015. Due to the small numbers of birth defects per year, data will be grouped in multiple years, as is required by the CDC for the national publication. This report includes Indiana data available for the five years from 2008 through 2012. According to Vital Records data, 423,347 live births occurred during these five years.

Not only was the IBDPR redesigned and moved into a web-based application as discussed above, the data was also transferred from an older data model to a new, more modernized data model. During the data transfer and analysis, some discrepancies were observed for confirmed and probable cases for certain conditions compared to previous years' reports. The program is currently investigating those discrepancies. It is presumed that the discrepancies in data can be attributed to one or more of the following potential causes: a change in reviewer personnel who make the determination as to the validity of a particular case; duplicate records created by multiple data sources which have since merged together as one report since the 2013 report; or unknown data transfer-related issues.

The following paragraphs explain the attached tables in more detail:

Table 1 shows the number of unduplicated children reported through hospital discharge data and the Physician Reporting System for each reportable condition category. Since many children with birth defects or problems have more than one defect, some children may be included in multiple condition categories. These numbers do not reflect confirmation of the defect, merely reporting by hospitals and physicians' offices.

Table 2 shows the number of unduplicated children who were reported with one reportable condition; **Table 3** shows the number of unduplicated children reported with more than one reportable condition. These tables are subsets of Table 1, and again, do not reflect whether there is a confirmed diagnosis that supports the reported condition.

Tables 4A and **4B** reflect the sources of case ascertainment for targeted and non-targeted, reportable conditions. According to these tables, physician reporting was the sole source of information for 15% of reports of fetal alcohol syndrome (FAS), and 11% of reports of ASDs (as indicated in the tables as pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome and pervasive developmental disorders not otherwise specified), illustrating the necessity of direct physician reporting for accurate reporting of the prevalence of these conditions. Validation by a chart audit reviewer of cases of ASDs reported in Table 4A only occurs for children up to age eight (8).

Table 5 outlines the targeted condition categories reported by hospital discharge data where the condition was determined to be confirmed or probable based on information obtained during a chart audit. The ICD-9-CM codes listed on the hospital discharge data often represent conditions that may possibly be present, but require additional testing or information to accurately confirm or rule out. The final column "Confirmed/Probable Percentage" reflects the validity of the hospital discharge data reported by the hospitals by calculating how many of the reported conditions were determined to be confirmed or probable after a chart audit was performed. From 2008-2012, only three conditions, genitourinary anomalies, fetal alcohol syndrome (FAS), and chromosomal anomalies, demonstrated over 50% confirmed or probable cases out of all reported cases of the condition. Lower percentages of confirmed or probable cases can be explained due the low numbers of audited and reviewed conditions during the reporting period of July 2014-June

2015. A detailed description of the reason for these lower percentages can be found in the Program Development section of this report.

Table 6 includes the counts and rates (listed by race; rates calculated per 10,000 births) of confirmed and probable targeted conditions for children born to Indiana mothers from 2008 through 2012. The overall prevalence of birth defects in Indiana as presented in this table is an underrepresentation due to the same reason given under **Table 5**.

Table 7 indicates the counts and rates (rates calculated per 10,000 births) sorted by maternal age by delivery of confirmed and probable cases of children with a missing, extra, or irregular portion of chromosomal DNA or with an atypical number of chromosomes who were born to Indiana mothers from 2008 through 2012. Children with trisomy conditions have three, rather than the expected two, copies of a chromosome—for example, children born with a third copy of chromosome 21 have Down syndrome, also called trisomy 21.

Table 8 shows the counts and rates (rates calculated per 10,000 births) of confirmed and probable conditions for children born to Indiana women from 2008 through 2012 for each county of Indiana. Within this table, any count less than or equal to five is indicated with an asterisk (*). Because chart audits were completed disproportionately throughout the state, caution should be taken in interpreting differences among counties.

Table 9 shows the total number of children born to Indiana women in a homebirth setting based on birth certificate data. This table also includes the total number of infant deaths that occurred in the homebirth population and the number of children from homebirth population that were reported with a birth defect for each specific birth year.

Use of Indiana Birth Defects and Problems Registry Data

Annual data for births to Indiana mothers that occurred during the reporting period specified by the CDC (2008 – 2012) contained in Table 6 is typically submitted annually to the National Birth Defects Prevention Network (NBDPN), where the data is published in *Birth Defects Research Part A: Clinical and Molecular Teratology*. However, due to program and personnel changes that occurred during the reporting period as discussed above, new annual data was not sent to the NBDPN in 2015. Last year's version of this report was posted on the ISDH Genomics and Newborn Screening website; since it is publically available, it is

unknown whether data from that report was utilized by any researchers during this time. Additional data beyond previous versions of this report (including any access to confidential information) was not utilized by any researchers during this reporting period.

Proposals for Prevention of Birth Defects and Problems in Indiana

Currently the IBDPR contains a total of ten years worth of information on birth rates within the state. Having enough chart auditors located throughout the state, in addition to data collected over a longer period of time, is necessary in order to be able to adequately confirm or invalidate the presence of a reported defect by HDD, and to accurately evaluate the presence of trends and/or clusters, and therefore, the need for specific prevention campaigns.

Table 1: Number of Children* Reported to IBDPR by Birth Year**

Condition Name / Category	ICD-9-CM Codes	2008	2009	2010	2011	2012
Adenoma of lung or bronchus	212.30	2		1		
Anomalies of jaw	524.00 - 524.10	76	85	69	85	76
Anterior horn cell disease	335.00 - 335.99	15	3	3	8	3
Cardiovascular anomalies (Congenital)	745.00 - 747.99	2295	2339	2336	2374	2338
Central nervous system anomalies (Congenital)	740.00 - 742.99	453	425	392	372	339
Cerebral degenerations usually manifesting in childhood	330.00 - 330.99	7	3	7	10	2
Chromosomal anomalies	758.00 - 758.99	330	284	332	313	263
Coagulation defects	286.00 - 286.99	105	114	58	44	36
Congenital infections	771.0 - 771.99	611	605	543	529	581
Congenital nystagmus	379.51	15	6	6	8	7
Constitutional aplastic anemia	284.00 - 284.09	2	1	1	4	1
Cortical blindness	377.75	7	4	2	5	1
Diabetes mellitus	250.00 - 250.99	188	91	75	65	42
Dyshormonogenic goiter	246.10		1	1		
Fetal alcohol syndrome	760.71	39	26	19	13	19
Fetus or newborn affected by maternal anticonvulsants	760.77	2		1		1
Fetus or newborn affected by maternal infection	760.20	7	8	2	3	7

*Whose mothers were Indiana residents at the time of child's birth

**Includes hospital discharge data and physician reports

Data compiled on 9/30/2015 3:31:47 PM

Condition Name / Category	ICD-9-CM Codes	2008	2009	2010	2011	2012
Gastrointestinal anomalies (Congenital)	750.30 - 751.99	515	543	523	504	507
Genitourinary anomalies (Congenital)	752.00 - 753.99	1735	1698	1745	1742	1655
Glaucoma of childhood	365.14			1		
Hearing loss	389.00 - 389.99	910	952	894	827	757
Hereditary hemolytic anemias	282.00 - 282.99	247	211	206	229	218
Hereditary retinal dystrophies	362.70 - 362.74				1	1
Immune mechanism disorders	279.00 - 279.99	85	102	96	80	56
Inguinal hernia	550.00 - 550.99	119	102	143	161	172
Integument anomalies (Congenital)	757.00 - 757.99	2196	2331	2118	1833	2065
Mesothelioma of peritoneum	211.80	1	1	1		
Mucopolysaccharidoses	277.50	2			2	
Muscular dystrophies	359.00 - 359.99	47	27	20	38	15
Musculoskeletal anomalies (Congenital)	754.00 - 756.99	2139	2202	2153	2194	2087
Neoplasms	140.00 - 208.99, 216.00 - 216.99, 230.00 - 239.99	531	596	550	471	446
Orofacial anomalies (Congenital)	743.00 - 744.99, 749.00 - 750.29	1148	1193	1216	1238	1307
Other & unspecified anomalies (Congenital)	759.00 - 759.99	330	309	312	263	239
Other specified diseases of blood and blood-forming organs	289.80 - 289.89	23	31	15	23	33

*Whose mothers were Indiana residents at the time of child's birth

**Includes hospital discharge data and physician reports

Data compiled on 9/30/2015 3:31:47 PM

Condition Name / Category	ICD-9-CM Codes	2008	2009	2010	2011	2012
Paraproteinemias, other	273.20	1				
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified	299.00 - 299.99	516	417	313	203	113
Primary thrombocytopenia	287.30	4	6	2	1	2
Respiratory anomalies (Congenital)	748.00 - 748.99	526	531	485	449	479
Retrolental fibroplasia	362.21	116	51	2	7	43
Strabismus & other disorders of binocular eye movement	378.00 - 378.99	155	146	133	141	93
Testicular dysfunction, other	257.80	1				
Thyroid-binding globulin deficiency	246.80			1	1	
Torsion of testes	608.20 - 608.24	5	3	2	6	7
Umbilical hernia	553.10	72	74	91	83	128
Visual impairment	368.00 - 368.45	7	5	7	7	3
White blood cell diseases	288.00 - 288.99	996	923	921	786	685

*Whose mothers were Indiana residents at the time of child's birth

**Includes hospital discharge data and physician reports

Data compiled on 9/30/2015 3:31:47 PM

Table 2: Number of Children* Reported ** to IBDPR with Only One Reportable Condition by Birth Year

Condition Name / Category	ICD-9-CM Codes	2008	2009	2010	2011	2012
Anomalies of jaw	524.00 - 524.10	16	7	10	9	15
Anterior horn cell disease	335.00 - 335.99	4	1	1	1	2
Cardiovascular anomalies (Congenital)	745.00 - 747.99	717	722	783	762	752
Central nervous system anomalies (Congenital)	740.00 - 742.99	116	124	113	118	110
Cerebral degenerations usually manifesting in childhood	330.00 - 330.99	1	1	2	4	
Chromosomal anomalies	758.00 - 758.99	58	48	45	48	43
Coagulation defects	286.00 - 286.99	18	14	15	9	10
Congenital infections	771.0 - 771.99	7	5		16	98
Congenital nystagmus	379.51	6	1	4	1	3
Constitutional aplastic anemia	284.00 - 284.09			1	2	
Diabetes mellitus	250.00 - 250.99	118	58	42	41	18
Fetal alcohol syndrome	760.71	21	8	4	4	9
Gastrointestinal anomalies (Congenital)	750.30 - 751.99	242	274	250	281	289
Genitourinary anomalies (Congenital)	752.00 - 753.99	820	875	995	1026	935
Hearing loss	389.00 - 389.99	490	518	512	463	446
Hereditary hemolytic anemias	282.00 - 282.99	133	121	131	126	131
Immune mechanism disorders	279.00 - 279.99	34	31	28	20	20

*Whose mothers were Indiana residents at the time of child's birth

**Includes hospital discharge data and physician reports

Data compiled on 9/30/2015 3:33:17 PM

Condition Name / Category	ICD-9-CM Codes	2008	2009	2010	2011	2012
Inguinal hernia	550.00 - 550.99	2	11	21	39	42
Integument anomalies (Congenital)	757.00 - 757.99	1676	1686	1675	1426	1629
Muscular dystrophies	359.00 - 359.99	6	5	5	4	7
Musculoskeletal anomalies (Congenital)	754.00 - 756.99	1188	1245	1259	1267	1260
Neoplasms	140.00 - 208.99, 216.00 - 216.99, 230.00 - 239.99	225	225	245	173	190
Orofacial anomalies (Congenital)	743.00 - 744.99, 749.00 - 750.29	720	710	783	838	925
Other & unspecified anomalies (Congenital)	759.00 - 759.99	81	83	92	66	54
Other specified diseases of blood and blood-forming organs	289.80 - 289.89	11	9	7	8	12
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified	299.00 - 299.99	292	231	185	121	64
Primary thrombocytopenia	287.30	4	2	1		1
Respiratory anomalies (Congenital)	748.00 - 748.99	179	169	173	170	174
Retrolental fibroplasia	362.21	16			1	2
Strabismus & other disorders of binocular eye movement	378.00 - 378.99	68	71	50	60	41
Torsion of testes	608.20 - 608.24				1	1

*Whose mothers were Indiana residents at the time of child's birth

**Includes hospital discharge data and physician reports

Data compiled on 9/30/2015 3:33:17 PM

Condition Name / Category	ICD-9-CM Codes	2008	2009	2010	2011	2012
Umbilical hernia	553.10	1	6	11	15	49
Visual impairment	368.00 - 368.45		1			1
White blood cell diseases	288.00 - 288.99	608	530	579	479	441

*Whose mothers were Indiana residents at the time of child's birth

**Includes hospital discharge data and physician reports

Data compiled on 9/30/2015 3:33:17 PM

Table 3: Number of Children* Reported** to IBDPR with More Than One Reportable Condition by Birth Year

Condition Name / Category	ICD-9-CM Codes	2008	2009	2010	2011	2012
Adenoma of lung or bronchus	212.30	2		1		
Anomalies of jaw	524.00 - 524.10	60	78	59	76	61
Anterior horn cell disease	335.00 - 335.99	11	2	2	7	1
Cardiovascular anomalies (Congenital)	745.00 - 747.99	1578	1617	1552	1612	1586
Central nervous system anomalies (Congenital)	740.00 - 742.99	337	301	279	254	229
Cerebral degenerations usually manifesting in childhood	330.00 - 330.99	6	2	5	6	2
Chromosomal anomalies	758.00 - 758.99	272	236	287	265	220
Coagulation defects	286.00 - 286.99	87	100	43	35	26
Congenital infections	771.0 - 771.99	604	600	543	513	483
Congenital nystagmus	379.51	9	5	2	7	4
Constitutional aplastic anemia	284.00 - 284.09	2	1		2	1
Cortical blindness	377.75	7	4	2	5	1
Diabetes mellitus	250.00 - 250.99	70	33	33	24	24
Dyshormonogenic goiter	246.10		1	1		
Fetal alcohol syndrome	760.71	18	18	15	9	10
Fetus or newborn affected by maternal anticonvulsants	760.77	2		1		1
Fetus or newborn affected by maternal infection	760.20	7	8	2	3	7

*Whose mothers were Indiana residents at the time of child's birth

**Includes hospital discharge data and physician reports

Data compiled on 9/30/2015 3:34:25 PM

Condition Name / Category	ICD-9-CM Codes	2008	2009	2010	2011	2012
Gastrointestinal anomalies (Congenital)	750.30 - 751.99	272	269	273	223	218
Genitourinary anomalies (Congenital)	752.00 - 753.99	915	823	750	716	720
Glaucoma of childhood	365.14			1		
Hearing loss	389.00 - 389.99	420	434	382	364	311
Hereditary hemolytic anemias	282.00 - 282.99	114	90	75	103	87
Hereditary retinal dystrophies	362.70 - 362.74				1	1
Immune mechanism disorders	279.00 - 279.99	51	71	68	60	36
Inguinal hernia	550.00 - 550.99	117	91	122	122	129
Integument anomalies (Congenital)	757.00 - 757.99	520	645	443	407	436
Mesothelioma of peritoneum	211.80	1	1	1		
Mucopolysaccharidoses	277.50	2			2	
Muscular dystrophies	359.00 - 359.99	41	22	15	34	8
Musculoskeletal anomalies (Congenital)	754.00 - 756.99	951	957	894	927	827
Neoplasms	140.00 - 208.99, 216.00 - 216.99, 230.00 - 239.99	306	371	305	298	256
Orofacial anomalies (Congenital)	743.00 - 744.99, 749.00 - 750.29	428	483	433	400	382
Other & unspecified anomalies (Congenital)	759.00 - 759.99	249	226	220	197	185
Other specified diseases of blood and blood-forming organs	289.80 - 289.89	12	22	8	15	21

*Whose mothers were Indiana residents at the time of child's birth

**Includes hospital discharge data and physician reports

Data compiled on 9/30/2015 3:34:25 PM

Condition Name / Category	ICD-9-CM Codes	2008	2009	2010	2011	2012
Paraproteinemias, other	273.20	1				
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified	299.00 - 299.99	224	186	128	82	49
Primary thrombocytopenia	287.30		4	1	1	1
Respiratory anomalies (Congenital)	748.00 - 748.99	347	362	312	279	305
Retrolental fibroplasia	362.21	100	51	2	6	41
Strabismus & other disorders of binocular eye movement	378.00 - 378.99	87	75	83	81	52
Testicular dysfunction, other	257.80	1				
Thyroid-binding globulin deficiency	246.80			1	1	
Torsion of testes	608.20 - 608.24	5	3	2	5	6
Umbilical hernia	553.10	71	68	80	68	79
Visual impairment	368.00 - 368.45	7	4	7	7	2
White blood cell diseases	288.00 - 288.99	388	393	342	307	244

*Whose mothers were Indiana residents at the time of child's birth

**Includes hospital discharge data and physician reports

Data compiled on 9/30/2015 3:34:25 PM

Table 4A: Sources of Case Ascertainment Data for Targeted Conditions of 2008 - 2012 Births to Indiana Women

Condition Name / Category	Reported by Physician Only	Reported by Hospital Only	Reported by Physician and Hospital	Total
Anencephaly	2	23	0	25
Anophthalmia/microphthalmia	2	58	0	60
Anotia/microtia	3	48	2	53
Aortic valve stenosis	0	135	0	135
Atrial septal defect	6	6553	1	6560
Atrioventricular septal defect	12	282	0	294
Biliary atresia	0	36	0	36
Bladder exstrophy	0	21	0	21
Choanal atresia	1	124	0	125
Cleft lip only (without cleft palate)	5	209	2	216
Cleft lip with cleft palate	8	469	6	483
Cleft palate only (without cleft lip)	4	483	6	493
Cloacal exstrophy	0	290	0	290
Clubfoot	2	937	2	941
Coarctation of aorta	0	377	1	378
Common truncus	0	26	1	27
Congenital cataract	1	53	0	54
Congenital posterior urethral valves	1	91	0	92
Craniosynostosis	14	2940	20	2974
Deletion 22 q11.2	1	39	1	41
Diaphragmatic hernia	0	173	0	173

Data compiled on 9/30/2015 3:35:18 PM

Condition Name / Category	Reported by Physician Only	Reported by Hospital Only	Reported by Physician and Hospital	Total
Double outlet right ventricle (DORV)	0	126	0	126
Ebstein's anomaly	0	41	0	41
Encephalocele	1	54	2	57
Esophageal atresia/tracheoesophageal fistula	0	144	2	146
Fetal alcohol syndrome	17	90	9	116
Gastroschisis	2	269	0	271
Holoprosencephaly	5	323	4	332
Hypoplastic left heart syndrome	0	135	0	135
Hypospadias	2	1779	5	1786
Interrupted aortic arch (IAA)	0	33	1	34
Limb deficiencies (reduction defects)	12	300	2	314
Omphalocele	1	45	1	47
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified	185	1418	77	1680
Pulmonary valve atresia and stenosis	0	776	1	777
Rectal and large intestinal atresia/stenosis	0	239	0	239
Renal agenesis/hypoplasia	0	237	2	239
Single ventricle	0	74	0	74
Small intestinal atresia/stenosis	0	213	0	213
Spina bifida without anencephaly	10	487	11	508
Tetralogy of Fallot (TOF)	0	195	0	195

Data compiled on 9/30/2015 3:35:18 PM

Condition Name / Category	Reported by Physician Only	Reported by Hospital Only	Reported by Physician and Hospital	Total
Total anomalous pulmonary venous connection	0	46	0	46
Transposition of the great arteries	0	188	0	188
Tricuspid valve atresia and stenosis	0	58	0	58
Trisomy 13 (Patau syndrome)	0	44	1	45
Trisomy 18 (Edwards syndrome)	0	72	5	77
Trisomy 21 (Down syndrome)	5	533	69	607
Turner syndrome	1	40	1	42
Ventricular septal defect	4	2402	8	2414

Table 4B: Sources of Case Ascertainment Data for Reportable Conditions* of 2008 - 2012 Births to Indiana Women

Condition Name / Category	Reported by Physician Only	Reported by Hospital Only	Reported by Physician and Hospital	Total
Adenoma of lung or bronchus	0	3	0	3
Anomalies of jaw	5	455	1	461
Anterior horn cell disease	0	42	1	43
Cardiovascular anomalies (Congenital)	16	10369	6	10391
Central nervous system anomalies (Congenital)	28	1775	12	1815
Cerebral degenerations usually manifesting in childhood	1	29	0	30
Chromosomal anomalies	192	894	32	1118
Coagulation defects	0	389	0	389
Congenital infections	0	3133	0	3133
Congenital nystagmus	3	38	1	42
Constitutional aplastic anemia	0	9	0	9
Cortical blindness	0	19	0	19
Diabetes mellitus	0	587	0	587
Dyshormonogenic goiter	1	1	0	2
Fetus or newborn affected by maternal anticonvulsants	0	4	0	4
Fetus or newborn affected by maternal infection	0	27	0	27
Gastrointestinal anomalies (Congenital)	2	2026	4	2032
Genitourinary anomalies (Congenital)	6	8862	7	8875

*Excludes targeted conditions

Condition Name / Category	Reported by Physician Only	Reported by Hospital Only	Reported by Physician and Hospital	Total
Glaucoma of childhood	1	0	0	1
Hearing loss	14	4985	5	5004
Hereditary hemolytic anemias	4	1379	0	1383
Hereditary retinal dystrophies	0	2	0	2
Immune mechanism disorders	4	494	2	500
Inguinal hernia	0	763	0	763
Integument anomalies (Congenital)	10	10997	2	11009
Mesothelioma of peritoneum	0	3	0	3
Mucopolysaccharidoses	0	4	0	4
Muscular dystrophies	4	176	1	181
Musculoskeletal anomalies (Congenital)	55	8514	29	8598
Neoplasms	4	3481	0	3485
Orofacial anomalies (Congenital)	45	5618	6	5669
Other & unspecified anomalies (Congenital)	62	1540	26	1628
Other specified diseases of blood and blood-forming organs	1	124	0	125
Paraproteinemias, other	1	0	0	1
Primary thrombocytopenia	0	15	0	15
Respiratory anomalies (Congenital)	5	2482	4	2491
Retrolental fibroplasia	0	228	0	228
Strabismus & other disorders of binocular eye movement	7	769	0	776
Testicular dysfunction, other	0	1	0	1

*Excludes targeted conditions

Data compiled on 9/30/2015 3:36:32 PM

Condition Name / Category	Reported by Physician Only	Reported by Hospital Only	Reported by Physician and Hospital	Total
Thyroid-binding globulin deficiency	0	2	0	2
Torsion of testes	0	23	0	23
Umbilical hernia	0	448	0	448
Visual impairment	0	29	0	29
White blood cell diseases	0	4643	0	4643

*Excludes targeted conditions

Data compiled on 9/30/2015 3:36:32 PM

Table 5: Targeted Conditions Reported to IB DPR via Hospital Discharge Data for Children Born in 2008 - 2012 which are Confirmed or Determined as Probable by Medical Chart Audits or Physician Reports

Condition Name / Category	Number of Children Reported	Targeted Conditions Reported	Conditions per Child	Confirmed or Probable Conditions	Confirmed or Probable Percentage
Cardiovascular anomalies (Congenital)	8369	11610	1	3729	32.12
Central nervous system anomalies (Congenital)	610	904	1	292	32.30
Chromosomal anomalies	795	805	1	430	53.42
Fetal alcohol syndrome	99	99	1	55	55.56
Gastrointestinal anomalies (Congenital)	792	924	1	357	38.64
Genitourinary anomalies (Congenital)	2103	2135	1	1211	56.72
Musculoskeletal anomalies (Congenital)	4385	4706	1	963	20.46
Orofacial anomalies (Congenital)	844	1337	2	535	40.01
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified	1398	1495	1	563	37.66
Respiratory anomalies (Congenital)	124	124	1	52	41.94

Table 6: Confirmed and Probable Counts and Rates by Race of the Targeted Conditions for 2008 - 2012 Births to Indiana Women

Defect	Non-Hispanic White	Non-Hispanic Black	Hispanic	Asian or Pacific Islander	American Indian or Alaskan Native	Other / Unknown	Total
Anencephaly	3	2	0	0	0	0	5
	0.09	0.42	0	0	0	0	0.12
Anophthalmia/microphthalmia	20	1	1	2	0	0	24
	0.62	0.21	0.28	2.42	0	0	0.57
Anotia/microtia	25	1	4	1	0	1	32
	0.77	0.21	1.13	1.21	0	1.19	0.76
Aortic valve stenosis	43	1	7	0	0	2	53
	1.33	0.21	1.98	0	0	2.39	1.25
Atrial septal defect	1093	185	109	28	0	28	1443
	33.87	38.45	30.77	33.88	0	33.40	34.09
Atrioventricular septal defect	104	13	4	3	0	3	127
	3.22	2.70	1.13	3.63	0	3.58	3
Biliary atresia	9	7	2	1	0	2	21
	0.28	1.45	0.56	1.21	0	2.39	0.50
Bladder exstrophy	9	1	1	0	1	1	13
	0.28	0.21	0.28	0	21.37	1.19	0.31
Choanal atresia	47	2	3	1	0	0	53
	1.46	0.42	0.85	1.21	0	0	1.25
Cleft lip only (without cleft palate)	88	3	7	0	0	0	98
	2.73	0.62	1.98	0	0	0	2.31
Cleft lip with cleft palate	141	15	25	4	0	6	191
	4.37	3.12	7.06	4.84	0	7.16	4.51
Cleft palate only (without cleft lip)	156	21	12	4	0	4	197
	4.83	4.36	3.39	4.84	0	4.77	4.65
Cloacal exstrophy	35	3	4	1	0	1	44
	1.08	0.62	1.13	1.21	0	1.19	1.04
Clubfoot	214	33	18	1	1	4	271
	6.63	6.86	5.08	1.21	21.37	4.77	6.40
Coarctation of aorta	124	7	15	2	0	2	150

Note 1—Rates based on fewer than 20 cases are unstable and are not comparable.

Note 2—Race is assigned to the child based on the mother's reporting about herself.

Note 3—Rates per 10,000 live births displayed in shaded area.

Defect	Non-Hispanic White	Non-Hispanic Black	Hispanic	Asian or Pacific Islander	American Indian or Alaskan Native	Other / Unknown	Total
	3.84	1.45	4.23	2.42	0	2.39	3.54
Common truncus	10	2	1	0	0	0	13
	0.31	0.42	0.28	0	0	0	0.31
Congenital cataract	19	4	2	0	0	1	26
	0.59	0.83	0.56	0	0	1.19	0.61
Congenital posterior urethral valves	22	4	1	0	0	0	27
	0.68	0.83	0.28	0	0	0	0.64
Craniosynostosis	271	26	26	6	0	7	336
	8.40	5.40	7.34	7.26	0	8.35	7.94
Deletion 22 q11.2	10	0	3	0	0	0	13
	0.31	0	0.85	0	0	0	0.31
Diaphragmatic hernia	75	8	12	2	0	0	97
	2.32	1.66	3.39	2.42	0	0	2.29
Double outlet right ventricle (DORV)	51	7	2	0	0	1	61
	1.58	1.45	0.56	0	0	1.19	1.44
Ebstein's anomaly	20	0	1	0	0	0	21
	0.62	0	0.28	0	0	0	0.50
Encephalocele	20	2	2	2	0	0	26
	0.62	0.42	0.56	2.42	0	0	0.61
Esophageal atresia/tracheoesophageal fistula	65	6	8	0	0	1	80
	2.01	1.25	2.26	0	0	1.19	1.89
Fetal alcohol syndrome	59	13	4	0	0	2	78
	1.83	2.70	1.13	0	0	2.39	1.84
Gastroschisis	125	11	15	0	0	5	156
	3.87	2.29	4.23	0	0	5.96	3.68
Holoprosencephaly	113	18	11	2	0	1	145
	3.50	3.74	3.11	2.42	0	1.19	3.43
Hypoplastic left heart syndrome	54	4	7	3	0	3	71
	1.67	0.83	1.98	3.63	0	3.58	1.68
Hypospadias	890	91	44	11	0	18	1054

Note 1—Rates based on fewer than 20 cases are unstable and are not comparable.
Note 2—Race is assigned to the child based on the mother's reporting about herself.
Note 3—Rates per 10,000 live births displayed in shaded area.

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Defect	Non-Hispanic White	Non-Hispanic Black	Hispanic	Asian or Pacific Islander	American Indian or Alaskan Native	Other / Unknown	Total
	27.58	18.91	12.42	13.31	0	21.47	24.90
Interrupted aortic arch (IAA)	9	0	1	0	0	1	11
	0.28	0	0.28	0	0	1.19	0.26
Limb deficiencies (reduction defects)	102	11	9	1	1	1	125
	3.16	2.29	2.54	1.21	21.37	1.19	2.95
Omphalocele	16	4	1	1	0	2	24
	0.50	0.83	0.28	1.21	0	2.39	0.57
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified	648	88	47	10	0	14	807
	20.08	18.29	13.27	12.10	0	16.70	19.06
Pulmonary valve atresia and stenosis	203	40	22	2	0	5	272
	6.29	8.31	6.21	2.42	0	5.96	6.42
Rectal and large intestinal atresia/stenosis	101	12	14	2	1	1	131
	3.13	2.49	3.95	2.42	21.37	1.19	3.09
Renal agenesis/hypoplasia	95	11	12	2	0	2	122
	2.94	2.29	3.39	2.42	0	2.39	2.88
Single ventricle	12	3	0	1	0	0	16
	0.37	0.62	0	1.21	0	0	0.38
Small intestinal atresia/stenosis	61	8	10	1	0	1	81
	1.89	1.66	2.82	1.21	0	1.19	1.91
Spina bifida without anencephaly	120	16	8	0	1	3	148
	3.72	3.33	2.26	0	21.37	3.58	3.50
Tetralogy of Fallot (TOF)	72	16	9	2	1	4	104
	2.23	3.33	2.54	2.42	21.37	4.77	2.46
Total anomalous pulmonary venous connection	17	2	3	0	0	2	24

Note 1—Rates based on fewer than 20 cases are unstable and are not comparable.

Note 2—Race is assigned to the child based on the mother's reporting about herself.

Note 3—Rates per 10,000 live births displayed in shaded area.

Data compiled on 9/30/2015 3:38:12 PM

Defect	Non-Hispanic White	Non-Hispanic Black	Hispanic	Asian or Pacific Islander	American Indian or Alaskan Native	Other / Unknown	Total
	0.53	0.42	0.85	0	0	2.39	0.57
Transposition of the great arteries	67	8	7	1	0	1	84
	2.08	1.66	1.98	1.21	0	1.19	1.98
Tricuspid valve atresia and stenosis	22	4	1	1	0	0	28
	0.68	0.83	0.28	1.21	0	0	0.66
Trisomy 13 (Patau syndrome)	11	3	2	0	0	0	16
	0.34	0.62	0.56	0	0	0	0.38
Trisomy 18 (Edwards syndrome)	25	10	5	0	0	1	41
	0.77	2.08	1.41	0	0	1.19	0.97
Trisomy 21 (Down syndrome)	293	33	37	10	1	7	381
	9.08	6.86	10.45	12.10	21.37	8.35	9
Turner syndrome	9	2	1	0	0	0	12
	0.28	0.42	0.28	0	0	0	0.28
Ventricular septal defect	968	122	103	24	1	28	1246
	30	25.36	29.08	29.04	21.37	33.40	29.43
All Defects	6766	884	643	132	8	166	8599
	209.67	183.73	181.54	159.71	170.94	198	203.12
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Total Live Births	322695	48115	35420	8265	468	8384	423347

Note 1—Rates based on fewer than 20 cases are unstable and are not comparable.
Note 2—Race is assigned to the child based on the mother's reporting about herself.
Note 3—Rates per 10,000 live births displayed in shaded area.

Data compiled on 9/30/2015 3:38:12 PM

Table 7: Confirmed and Probable Counts and Rates of **Chromosomal Anomalies** by Maternal Age for 2008 - 2012 Births to Indiana Women (Rates per 10,000 live births displayed in the shaded area.)

Defect	< 20	20-24	25-29	30-34	35-39	40+	Unknown	Total
Deletion 22 q11.2	0	4	7	2	0	0	0	13
	0	0.35	0.54	0.22	0	0	0	0.31
Trisomy 13 (Patau syndrome)	0	3	3	8	2	0	0	16
	0	0.26	0.23	0.87	0.54	0	0	0.38
Trisomy 21 (Down syndrome)	18	44	65	103	80	71	0	381
	4.24	3.86	5.06	11.26	21.56	73.20	0	9
Turner syndrome	4	0	4	2	2	0	0	12
	0.94	0	0.31	0.22	0.54	0	0	0.28
Trisomy 18 (Edwards syndrome)	3	3	7	11	8	9	0	41
	0.71	0.26	0.54	1.20	2.16	9.28	0	0.97
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Total Live Births	42419	113959	128519	91514	37110	9699	127	423347

Note—Rates based on fewer than 20 cases are unstable and are not comparable.

Data compiled on 9/30/2015 3:38:59 PM

Table 8: Confirmed and Probable Counts and Rates of Targeted Conditions for 2008 - 2012 Births to Indiana Women by County (rates per 10,000 births)

County	Live Births	Total	Rate	County	Live Births	Total	Rate
Defect				Defect			
ADAMS	3319			ADAMS	3319		
All Defects		84	253.09	Pulmonary valve atresia and stenosis		*	
Atrial septal defect		13	39.17	Small intestinal atresia/stenosis		*	
Atrioventricular septal defect		*		Spina bifida without anencephaly		*	
Choanal atresia		*		Tricuspid valve atresia and stenosis		*	
Cleft lip with cleft palate		*		Trisomy 21 (Down syndrome)	5		15.06
Cleft palate only (without cleft lip)		*		Turner syndrome		*	
Cloacal exstrophy		*		Ventricular septal defect	12		36.16
Clubfoot		5	15.06				
Coarctation of aorta		*					
Common truncus		*					
Craniosynostosis		6	18.08				
Diaphragmatic hernia		*					
Esophageal atresia/tracheoesophageal fistula		*					
Hypospadias		10	30.13				
Interrupted aortic arch (IAA)		*					
Limb deficiencies (reduction defects)		*					
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		9	27.12				

Note 1—* indicates < 5 in number occurred.

Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
ALLEN	26796			ALLEN	26796		
All Defects		664	247.8	Hypospadias		100	37.32
Anophthalmia/microphthalmia		*		Limb deficiencies (reduction defects)		7	2.61
Anotia/microtia		*		Omphalocele		*	
Aortic valve stenosis		*		Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		105	39.18
Atrial septal defect		91	33.96	Pulmonary valve atresia and stenosis		27	10.08
Atrioventricular septal defect		7	2.61	Rectal and large intestinal atresia/stenosis		9	3.36
Choanal atresia		*		Renal agenesis/hypoplasia		7	2.61
Cleft lip only (without cleft palate)		*		Single ventricle		*	
Cleft lip with cleft palate		11	4.11	Small intestinal atresia/stenosis		*	
Cleft palate only (without cleft lip)		17	6.34	Spina bifida without anencephaly		6	2.24
Cloacal exstrophy		8	2.99	Tetralogy of Fallot (TOF)		5	1.87
Clubfoot		14	5.22	Total anomalous pulmonary venous connection		*	
Coarctation of aorta		7	2.61	Transposition of the great arteries		9	3.36
Congenital posterior urethral valves		5	1.87	Tricuspid valve atresia and stenosis		*	
Craniosynostosis		48	17.91	Trisomy 13 (Patau syndrome)		*	
Diaphragmatic hernia		*		Trisomy 21 (Down syndrome)		21	7.84
Double outlet right ventricle (DORV)		*		Turner syndrome		*	
Ebstein's anomaly		*		Ventricular septal defect		80	29.86
Encephalocele		*					
Esophageal atresia/tracheoesophageal fistula		8	2.99				
Fetal alcohol syndrome		16	5.97				
Gastroschisis		5	1.87				
Holoprosencephaly		11	4.11				
Hypoplastic left heart syndrome		6	2.24				

Note 1—* indicates < 5 in number occurred.

Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

Data compiled on 9/30/2015 3:39:48 PM

County	Live Births	Total	Rate	County	Live Births	Total	Rate
Defect				Defect			
BARTHOLOMEW	5225			BARTHOLOMEW	5225		
All Defects		73	139.71	Pulmonary valve atresia and stenosis		*	
Anencephaly		*		Rectal and large intestinal atresia/stenosis		*	
Aortic valve stenosis		*		Renal agenesis/hypoplasia		*	
Atrial septal defect		9	17.22	Spina bifida without anencephaly		*	
Bladder exstrophy		*		Tetralogy of Fallot (TOF)		*	
Choanal atresia		*		Total anomalous pulmonary venous connection		*	
Cleft lip only (without cleft palate)		*		Tricuspid valve atresia and stenosis		*	
Cleft lip with cleft palate		*		Trisomy 13 (Patau syndrome)		*	
Cloacal exstrophy		*		Trisomy 21 (Down syndrome)		*	
Clubfoot		*		Ventricular septal defect		10	19.14
Coarctation of aorta		*					
Craniosynostosis		*		BENTON	505		
Diaphragmatic hernia		*		All Defects		11	217.82
Ebstein's anomaly		*		Atrial septal defect		*	
Esophageal atresia/tracheoesophageal fistula		*		Atrioventricular septal defect		*	
Gastroschisis		*		Clubfoot		*	
Holoprosencephaly		*		Hypospadias		*	
Hypospadias		*		Limb deficiencies (reduction defects)		*	
Limb deficiencies (reduction defects)		*		Pulmonary valve atresia and stenosis		*	
Omphalocele		*		Ventricular septal defect		*	
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		5	9.57				

Note 1—* indicates < 5 in number occurred.

Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
BLACKFORD	727						
All Defects		18	247.59				
Atrial septal defect		6	82.53				
Cleft lip with cleft palate		*					
Diaphragmatic hernia		*					
Hypoplastic left heart syndrome		*					
Hypospadias		*					
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*					
Renal agenesis/hypoplasia		*					
Ventricular septal defect		6	82.53				

Note 1—* indicates < 5 in number occurred.

Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
BOONE	3539			BOONE	3539		
All Defects		73	206.27	Trisomy 21 (Down syndrome)		*	
Atrial septal defect		8	22.61	Ventricular septal defect		9	25.43
Atrioventricular septal defect		*		BROWN	620		
Cleft lip with cleft palate		*		All Defects		8	129.03
Cleft palate only (without cleft lip)		*		Anophthalmia/microphthalmia		*	
Cloacal exstrophy		*		Atrial septal defect		*	
Clubfoot		*		Diaphragmatic hernia		*	
Coarctation of aorta		*		Trisomy 21 (Down syndrome)		*	
Craniosynostosis		*		Ventricular septal defect		*	
Deletion 22 q11.2		*					
Encephalocele		*					
Esophageal atresia/tracheoesophageal fistula		*					
Holoprosencephaly		*					
Hypoplastic left heart syndrome		*					
Hypospadias		18	50.86				
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		9	25.43				
Pulmonary valve atresia and stenosis		*					
Renal agenesis/hypoplasia		*					
Tetralogy of Fallot (TOF)		*					
Total anomalous pulmonary venous connection		*					

Note 1—* indicates < 5 in number occurred.

Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
CARROLL	1105						
All Defects		28	253.39				
Aortic valve stenosis		*					
Atrial septal defect		5	45.25				
Atrioventricular septal defect		*					
Cleft lip only (without cleft palate)		*					
Clubfoot		*					
Coarctation of aorta		*					
Ebstein's anomaly		*					
Gastroschisis		*					
Hypospadias		*					
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*					
Spina bifida without anencephaly		*					
Tetralogy of Fallot (TOF)		*					
Ventricular septal defect		8	72.4				

Note 1—* indicates < 5 in number occurred.

Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
CASS	2578			CASS	2578		
All Defects		64	248.25	Spina bifida without anencephaly		*	
Atrial septal defect		7	27.15	Transposition of the great arteries		*	
Choanal atresia		*		Trisomy 21 (Down syndrome)		*	
Cleft lip only (without cleft palate)		*		Ventricular septal defect		15	58.18
Cleft palate only (without cleft lip)		*					
Clubfoot		*		CLARK	7295		
Coarctation of aorta		*		All Defects		47	64.43
Common truncus		*		Atrial septal defect		18	24.67
Craniosynostosis		*		Cleft lip with cleft palate		*	
Diaphragmatic hernia		*		Common truncus		*	
Double outlet right ventricle (DORV)		*		Hypospadias		6	8.22
Gastroschisis		*		Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		5	6.85
Holoprosencephaly		*					
Hypospadias		*		Pulmonary valve atresia and stenosis		*	
Limb deficiencies (reduction defects)		*		Rectal and large intestinal atresia/stenosis		*	
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*		Ventricular septal defect		12	16.45
Pulmonary valve atresia and stenosis		*					
Rectal and large intestinal atresia/stenosis		*					
Small intestinal atresia/stenosis		*					

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
CLAY	1583			CLINTON	2337		
All Defects		41	259	All Defects		51	218.23
Atrial septal defect		6	37.9	Anophthalmia/microphthalmia		*	
Cleft lip only (without cleft palate)		*		Atrial septal defect		11	47.07
Cleft lip with cleft palate		*		Cleft lip with cleft palate		*	
Cleft palate only (without cleft lip)		*		Clubfoot		*	
Coarctation of aorta		*		Coarctation of aorta		*	
Diaphragmatic hernia		*		Diaphragmatic hernia		*	
Gastroschisis		*		Esophageal atresia/tracheoesophageal fistula		*	
Hypospadias		7	44.22	Gastroschisis		*	
Omphalocele		*		Hypospadias		8	34.23
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*		Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		5	21.39
Renal agenesis/hypoplasia		*		Pulmonary valve atresia and stenosis		*	
Tetralogy of Fallot (TOF)		*		Rectal and large intestinal atresia/stenosis		*	
Ventricular septal defect		10	63.17	Renal agenesis/hypoplasia		*	
				Small intestinal atresia/stenosis		*	
				Total anomalous pulmonary venous connection		*	
				Trisomy 13 (Patau syndrome)		*	
				Trisomy 21 (Down syndrome)		*	
				Ventricular septal defect		8	34.23

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
CRAWFORD	588			DAVIESS	2646		
All Defects		*		All Defects		46	173.85
Atrial septal defect		*		Aortic valve stenosis		*	
Common truncus		*		Atrial septal defect		8	30.23
Ventricular septal defect		*		Atrioventricular septal defect		*	
				Bladder exstrophy		*	
				Cleft lip with cleft palate		*	
				Cleft palate only (without cleft lip)		*	
				Clubfoot		*	
				Coarctation of aorta		*	
				Hypoplastic left heart syndrome		*	
				Hypospadias		*	
				Interrupted aortic arch (IAA)		*	
				Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*	
				Rectal and large intestinal atresia/stenosis		*	
				Renal agenesis/hypoplasia		*	
				Spina bifida without anencephaly		*	
				Transposition of the great arteries		*	
				Tricuspid valve atresia and stenosis		*	
				Trisomy 21 (Down syndrome)		*	
				Ventricular septal defect		9	34.01

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
DEARBORN	1791			DE KALB	2604		
All Defects		10	55.83	All Defects		70	268.82
Atrioventricular septal defect		*		Anophthalmia/microphthalmia		*	
Cleft lip only (without cleft palate)		*		Atrial septal defect		8	30.72
Cleft palate only (without cleft lip)		*		Cleft lip with cleft palate		*	
Clubfoot		*		Cleft palate only (without cleft lip)		*	
Hypospadias		*		Cloacal exstrophy		*	
Turner syndrome		*		Clubfoot		7	26.88
Ventricular septal defect		*		Coarctation of aorta		*	
DECATUR	1613			Craniosynostosis		11	42.24
All Defects		19	117.79	Fetal alcohol syndrome		*	
Atrial septal defect		5	31	Holoprosencephaly		*	
Atrioventricular septal defect		*		Hypospadias		8	30.72
Choanal atresia		*		Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		16	61.44
Craniosynostosis		*		Pulmonary valve atresia and stenosis		*	
Encephalocele		*		Rectal and large intestinal atresia/stenosis		*	
Gastroschisis		*		Spina bifida without anencephaly		*	
Holoprosencephaly		*		Tricuspid valve atresia and stenosis		*	
Hypospadias		*		Ventricular septal defect		*	
Rectal and large intestinal atresia/stenosis		*					
Ventricular septal defect		*					

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect	Total	Rate		Defect	Total	Rate	
DELAWARE	6359			DELAWARE	6359		
All Defects	189	297.22		Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified	10	15.73	
Anencephaly	*			Pulmonary valve atresia and stenosis	*		
Atrial septal defect	59	92.78		Rectal and large intestinal atresia/stenosis	*		
Atrioventricular septal defect	*			Renal agenesis/hypoplasia	*		
Biliary atresia	*			Small intestinal atresia/stenosis	*		
Bladder exstrophy	*			Spina bifida without anencephaly	*		
Choanal atresia	*			Total anomalous pulmonary venous connection	*		
Cleft lip with cleft palate	*			Transposition of the great arteries	*		
Cleft palate only (without cleft lip)	*			Tricuspid valve atresia and stenosis	*		
Clubfoot	7	11.01		Trisomy 21 (Down syndrome)	7	11.01	
Coarctation of aorta	*			Turner syndrome	*		
Craniosynostosis	*			Ventricular septal defect	28	44.03	
Diaphragmatic hernia	*						
Ebstein's anomaly	*						
Esophageal atresia/tracheoesophageal fistula	*						
Fetal alcohol syndrome	*						
Gastroschisis	*						
Holoprosencephaly	*						
Hypoplastic left heart syndrome	*						
Hypospadias	19	29.88					
Limb deficiencies (reduction defects)	7	11.01					
Omphalocele	*						

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
DUBOIS	2616						
All Defects		30	114.68				
Anotia/microtia		*					
Aortic valve stenosis		*					
Atrial septal defect		*					
Cleft lip with cleft palate		*					
Cleft palate only (without cleft lip)		*					
Craniosynostosis		*					
Deletion 22 q11.2		*					
Holoprosencephaly		*					
Hypoplastic left heart syndrome		*					
Hypospadias		5	19.11				
Limb deficiencies (reduction defects)		*					
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*					
Rectal and large intestinal atresia/stenosis		*					
Renal agenesis/hypoplasia		*					
Spina bifida without anencephaly		*					
Tetralogy of Fallot (TOF)		*					
Trisomy 21 (Down syndrome)		*					
Turner syndrome		*					
Ventricular septal defect		*					

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
ELKHART	15605			ELKHART	15605		
All Defects		347	222.36	Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		38	24.35
Anotia/microtia		*		Pulmonary valve atresia and stenosis		11	7.05
Atrial septal defect		47	30.12	Rectal and large intestinal atresia/stenosis		*	
Atrioventricular septal defect		*		Renal agenesis/hypoplasia		5	3.2
Biliary atresia		*		Single ventricle		*	
Choanal atresia		*		Small intestinal atresia/stenosis		*	
Cleft lip only (without cleft palate)		6	3.84	Spina bifida without anencephaly		11	7.05
Cleft lip with cleft palate		7	4.49	Tetralogy of Fallot (TOF)		6	3.84
Cleft palate only (without cleft lip)		11	7.05	Total anomalous pulmonary venous connection		*	
Cloacal exstrophy		*		Transposition of the great arteries		*	
Clubfoot		16	10.25	Trisomy 13 (Patau syndrome)		*	
Coarctation of aorta		9	5.77	Trisomy 18 (Edwards syndrome)		*	
Congenital cataract		*		Trisomy 21 (Down syndrome)		12	7.69
Craniosynostosis		25	16.02	Turner syndrome		*	
Diaphragmatic hernia		5	3.2	Ventricular septal defect		37	23.71
Double outlet right ventricle (DORV)		*					
Encephalocele		*					
Fetal alcohol syndrome		*					
Gastroschisis		7	4.49				
Holoprosencephaly		8	5.13				
Hypoplastic left heart syndrome		*					
Hypospadias		42	26.91				
Limb deficiencies (reduction defects)		6	3.84				
Omphalocele		*					

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
FAYETTE	1163			FLOYD	4458		
All Defects		23	197.76	All Defects		33	74.02
Aortic valve stenosis		*		Atrial septal defect		9	20.19
Atrial septal defect		*		Cleft palate only (without cleft lip)		*	
Atrioventricular septal defect		*		Clubfoot		*	
Cleft lip with cleft palate		*		Hypospadias		*	
Cleft palate only (without cleft lip)		*		Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*	
Clubfoot		*		Pulmonary valve atresia and stenosis		5	11.22
Diaphragmatic hernia		*		Rectal and large intestinal atresia/stenosis		*	
Esophageal atresia/tracheoesophageal fistula		*		Trisomy 21 (Down syndrome)		*	
Fetal alcohol syndrome		*		Ventricular septal defect		8	17.95
Gastroschisis		*					
Holoprosencephaly		*					
Hypospadias		5	42.99				
Limb deficiencies (reduction defects)		*					
Pulmonary valve atresia and stenosis		*					
Rectal and large intestinal atresia/stenosis		*					
Renal agenesis/hypoplasia		*					
Trisomy 21 (Down syndrome)		*					

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
FOUNTAIN	954			FRANKLIN	661		
All Defects		31	324.95	All Defects		11	166.41
Aortic valve stenosis		*		Atrial septal defect		*	
Atrial septal defect		6	62.89	Coarctation of aorta		*	
Craniosynostosis		*		Gastroschisis		*	
Gastroschisis		*		Hypospadias		*	
Holoprosencephaly		*		Transposition of the great arteries		*	
Hypoplastic left heart syndrome		*		Tricuspid valve atresia and stenosis		*	
Hypospadias		5	52.41	Ventricular septal defect		*	
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		5	52.41				
Pulmonary valve atresia and stenosis		*					
Rectal and large intestinal atresia/stenosis		*					
Small intestinal atresia/stenosis		*					
Trisomy 21 (Down syndrome)		*					
Ventricular septal defect		*					

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
FULTON	1296						
All Defects		35	270.06				
Atrial septal defect		*					
Biliary atresia		*					
Cleft lip with cleft palate		*					
Clubfoot		*					
Coarctation of aorta		*					
Craniosynostosis		*					
Fetal alcohol syndrome		*					
Hypospadias		*					
Limb deficiencies (reduction defects)		*					
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		8	61.73				
Pulmonary valve atresia and stenosis		*					
Rectal and large intestinal atresia/stenosis		*					
Renal agenesis/hypoplasia		*					
Small intestinal atresia/stenosis		*					
Spina bifida without anencephaly		*					
Trisomy 18 (Edwards syndrome)		*					
Trisomy 21 (Down syndrome)		*					
Ventricular septal defect		*					

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births	Total	Rate	County	Live Births	Total	Rate
Defect				Defect			
GIBSON	2016			GIBSON	2016		
All Defects		32	158.73	Spina bifida without anencephaly		*	
Anophthalmia/microphthalmia		*		Ventricular septal defect		*	
Atrial septal defect		*					
Atrioventricular septal defect		*					
Choanal atresia		*					
Cleft lip only (without cleft palate)		*					
Cleft lip with cleft palate		*					
Clubfoot		*					
Coarctation of aorta		*					
Double outlet right ventricle (DORV)		*					
Esophageal atresia/tracheoesophageal fistula		*					
Gastroschisis		*					
Hypoplastic left heart syndrome		*					
Hypospadias		*					
Limb deficiencies (reduction defects)		*					
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*					
Pulmonary valve atresia and stenosis		*					
Rectal and large intestinal atresia/stenosis		*					
Renal agenesis/hypoplasia		*					

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
GRANT	3990			GRANT	3990		
All Defects		79	197.99	Rectal and large intestinal atresia/stenosis		5	12.53
Anophthalmia/microphthalmia		*		Renal agenesis/hypoplasia		*	
Aortic valve stenosis		*		Small intestinal atresia/stenosis		*	
Atrial septal defect		9	22.56	Spina bifida without anencephaly		*	
Cleft lip with cleft palate		*		Tetralogy of Fallot (TOF)		*	
Cleft palate only (without cleft lip)		*		Trisomy 21 (Down syndrome)		*	
Cloacal exstrophy		*		Ventricular septal defect		8	20.05
Clubfoot		*					
Coarctation of aorta		*					
Craniosynostosis		*					
Diaphragmatic hernia		*					
Esophageal atresia/tracheoesophageal fistula		*					
Fetal alcohol syndrome		*					
Gastroschisis		*					
Holoprosencephaly		*					
Hypoplastic left heart syndrome		*					
Hypospadias		8	20.05				
Omphalocele		*					
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		8	20.05				
Pulmonary valve atresia and stenosis		*					

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
GREENE	1816						
All Defects		39	214.76				
Atrial septal defect		5	27.53				
Atrioventricular septal defect		*					
Choanal atresia		*					
Cleft lip with cleft palate		*					
Cleft palate only (without cleft lip)		*					
Cloacal exstrophy		*					
Craniosynostosis		*					
Double outlet right ventricle (DORV)		*					
Holoprosencephaly		*					
Hypospadias		9	49.56				
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*					
Pulmonary valve atresia and stenosis		*					
Rectal and large intestinal atresia/stenosis		*					
Small intestinal atresia/stenosis		*					
Tetralogy of Fallot (TOF)		*					
Trisomy 21 (Down syndrome)		*					
Ventricular septal defect		5	27.53				

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
HAMILTON	19145			HAMILTON	19145		
All Defects		429	224.08	Interrupted aortic arch (IAA)		*	
Anophthalmia/microphthalmia		*		Limb deficiencies (reduction defects)		8	4.18
Anotia/microtia		*		Omphalocele		*	
Aortic valve stenosis		*		Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		40	20.89
Atrial septal defect		57	29.77	Pulmonary valve atresia and stenosis		11	5.75
Atrioventricular septal defect		10	5.22	Rectal and large intestinal atresia/stenosis		*	
Bladder exstrophy		*		Renal agenesis/hypoplasia		5	2.61
Choanal atresia		*		Small intestinal atresia/stenosis		*	
Cleft lip only (without cleft palate)		9	4.7	Spina bifida without anencephaly		7	3.66
Cleft lip with cleft palate		5	2.61	Tetralogy of Fallot (TOF)		7	3.66
Cleft palate only (without cleft lip)		11	5.75	Transposition of the great arteries		*	
Cloacal exstrophy		*		Tricuspid valve atresia and stenosis		*	
Clubfoot		7	3.66	Trisomy 13 (Patau syndrome)		*	
Coarctation of aorta		*		Trisomy 21 (Down syndrome)		28	14.63
Congenital cataract		*		Ventricular septal defect		59	30.82
Craniosynostosis		19	9.92				
Diaphragmatic hernia		7	3.66				
Double outlet right ventricle (DORV)		5	2.61				
Encephalocele		*					
Esophageal atresia/tracheoesophageal fistula		*					
Gastroschisis		*					
Holoprosencephaly		6	3.13				
Hypoplastic left heart syndrome		6	3.13				
Hypospadias		86	44.92				

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
HANCOCK	3958			HANCOCK	3958		
All Defects		88	222.33	Pulmonary valve atresia and stenosis		*	
Atrial septal defect		17	42.95	Rectal and large intestinal atresia/stenosis		*	
Atrioventricular septal defect		*		Renal agenesis/hypoplasia		*	
Choanal atresia		*		Small intestinal atresia/stenosis		*	
Cleft lip only (without cleft palate)		*		Spina bifida without anencephaly		*	
Cleft palate only (without cleft lip)		*		Tetralogy of Fallot (TOF)		*	
Clubfoot		5	12.63	Total anomalous pulmonary venous connection		*	
Coarctation of aorta		*		Trisomy 18 (Edwards syndrome)		*	
Craniosynostosis		*		Trisomy 21 (Down syndrome)	6		15.16
Diaphragmatic hernia		*		Ventricular septal defect	15		37.9
Double outlet right ventricle (DORV)		*					
Ebstein's anomaly		*		HARRISON	2137		
Encephalocele		*		All Defects		17	79.55
Esophageal atresia/tracheoesophageal fistula		*		Atrial septal defect		*	
Gastroschisis		*		Cleft lip only (without cleft palate)		*	
Hypoplastic left heart syndrome		*		Cleft lip with cleft palate		*	
Hypospadias		7	17.69	Hypospadias		*	
Limb deficiencies (reduction defects)		*		Pulmonary valve atresia and stenosis		*	
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*		Renal agenesis/hypoplasia		*	
				Ventricular septal defect	7		32.76

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County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
HENDRICKS	8831			HENDRICKS	8831		
All Defects		196	221.95	Pulmonary valve atresia and stenosis		8	9.06
Aortic valve stenosis		*		Rectal and large intestinal atresia/stenosis		5	5.66
Atrial septal defect		34	38.5	Renal agenesis/hypoplasia		*	
Atrioventricular septal defect		*		Single ventricle		*	
Choanal atresia		*		Small intestinal atresia/stenosis		7	7.93
Cleft lip only (without cleft palate)		*		Spina bifida without anencephaly		*	
Cleft lip with cleft palate		*		Tetralogy of Fallot (TOF)		*	
Cleft palate only (without cleft lip)		*		Total anomalous pulmonary venous connection		*	
Cloacal exstrophy		*		Transposition of the great arteries		*	
Clubfoot		*		Trisomy 18 (Edwards syndrome)		*	
Coarctation of aorta		*		Trisomy 21 (Down syndrome)		14	15.85
Congenital posterior urethral valves		*		Ventricular septal defect		32	36.24
Craniosynostosis		7	7.93				
Diaphragmatic hernia		*					
Double outlet right ventricle (DORV)		5	5.66				
Gastroschisis		7	7.93				
Holoprosencephaly		*					
Hypospadias		21	23.78				
Limb deficiencies (reduction defects)		*					
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		15	16.99				

Note 1—* indicates < 5 in number occurred.

Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

Data compiled on 9/30/2015 3:39:48 PM

County	Live Births	Total	Rate	County	Live Births	Total	Rate
Defect				Defect			
HENRY	2466			HENRY	2466		
All Defects		65	263.58	Renal agenesis/hypoplasia		*	
Aortic valve stenosis		*		Spina bifida without anencephaly		*	
Atrial septal defect		12	48.66	Tricuspid valve atresia and stenosis		*	
Atrioventricular septal defect		*		Trisomy 18 (Edwards syndrome)		*	
Biliary atresia		*		Ventricular septal defect	12		48.66
Cleft lip only (without cleft palate)		*					
Cleft lip with cleft palate		*					
Cleft palate only (without cleft lip)		*					
Clubfoot		*					
Coarctation of aorta		*					
Deletion 22 q11.2		*					
Double outlet right ventricle (DORV)		*					
Encephalocele		*					
Gastroschisis		*					
Holoprosencephaly		*					
Hypoplastic left heart syndrome		*					
Hypospadias		8	32.44				
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*					
Pulmonary valve atresia and stenosis		*					
Rectal and large intestinal atresia/stenosis		*					

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
HOWARD	5141			HOWARD	5141		
All Defects		166	322.89	Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		15	29.18
Anotia/microtia		*		Pulmonary valve atresia and stenosis		*	
Aortic valve stenosis		*		Rectal and large intestinal atresia/stenosis		*	
Atrial septal defect		27	52.52	Small intestinal atresia/stenosis		5	9.73
Atrioventricular septal defect		*		Spina bifida without anencephaly		9	17.51
Choanal atresia		*		Transposition of the great arteries		*	
Cleft lip only (without cleft palate)		*		Tricuspid valve atresia and stenosis		*	
Cleft lip with cleft palate		*		Trisomy 18 (Edwards syndrome)		*	
Cleft palate only (without cleft lip)		*		Trisomy 21 (Down syndrome)		7	13.62
Cloacal exstrophy		*		Ventricular septal defect		26	50.57
Clubfoot		11	21.4				
Coarctation of aorta		*					
Craniosynostosis		*					
Deletion 22 q11.2		*					
Diaphragmatic hernia		*					
Double outlet right ventricle (DORV)		*					
Esophageal atresia/tracheoesophageal fistula		*					
Fetal alcohol syndrome		*					
Gastroschisis		*					
Holoprosencephaly		*					
Hypospadias		22	42.79				
Limb deficiencies (reduction defects)		*					
Omphalocele		*					

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect	Total	Rate		Defect	Total	Rate	
HUNTINGTON	2145			JACKSON	2825		
All Defects	71	331		All Defects	44	155.75	
Atrial septal defect	15	69.93		Atrial septal defect	14	49.56	
Cleft lip only (without cleft palate)	*			Choanal atresia	*		
Cleft lip with cleft palate	*			Cleft lip with cleft palate	*		
Clubfoot	6	27.97		Cleft palate only (without cleft lip)	*		
Congenital posterior urethral valves	*			Craniosynostosis	*		
Craniosynostosis	7	32.63		Diaphragmatic hernia	*		
Diaphragmatic hernia	*			Double outlet right ventricle (DORV)	*		
Esophageal atresia/tracheoesophageal fistula	*			Gastroschisis	*		
Gastroschisis	*			Holoprosencephaly	*		
Hypoplastic left heart syndrome	*			Hypospadias	5	17.7	
Hypospadias	9	41.96		Limb deficiencies (reduction defects)	*		
Limb deficiencies (reduction defects)	*			Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified	*		
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified	13	60.61		Pulmonary valve atresia and stenosis	*		
Renal agenesis/hypoplasia	*			Renal agenesis/hypoplasia	*		
Spina bifida without anencephaly	*			Small intestinal atresia/stenosis	*		
Ventricular septal defect	5	23.31		Total anomalous pulmonary venous connection	*		
				Trisomy 21 (Down syndrome)	*		
				Ventricular septal defect	*		

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
JASPER	1969			JAY	1484		
All Defects		59	299.64	All Defects		35	235.85
Atrial septal defect		9	45.71	Aortic valve stenosis		*	
Atrioventricular septal defect		*		Atrial septal defect		13	87.6
Cleft lip only (without cleft palate)		*		Atrioventricular septal defect		*	
Cleft palate only (without cleft lip)		*		Cleft palate only (without cleft lip)		*	
Clubfoot		*		Coarctation of aorta		*	
Craniosynostosis		5	25.39	Ebstein's anomaly		*	
Gastroschisis		*		Hypospadias		*	
Holoprosencephaly		*		Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*	
Hypospadias		8	40.63	Pulmonary valve atresia and stenosis		*	
Limb deficiencies (reduction defects)		*		Rectal and large intestinal atresia/stenosis		*	
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*		Transposition of the great arteries		*	
Pulmonary valve atresia and stenosis		*		Trisomy 21 (Down syndrome)		*	
Rectal and large intestinal atresia/stenosis		*		Ventricular septal defect		5	33.69
Renal agenesis/hypoplasia		*					
Small intestinal atresia/stenosis		*					
Tetralogy of Fallot (TOF)		*					
Transposition of the great arteries		*					
Trisomy 21 (Down syndrome)		*					
Ventricular septal defect		10	50.79				

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
JEFFERSON	1884			JENNINGS	1765		
All Defects		29	153.93	All Defects		35	198.3
Atrial septal defect		*		Anophthalmia/microphthalmia		*	
Cleft lip only (without cleft palate)		*		Atrial septal defect		7	39.66
Cleft lip with cleft palate		*		Atrioventricular septal defect		*	
Craniosynostosis		*		Cleft lip with cleft palate		*	
Encephalocele		*		Coarctation of aorta		*	
Gastroschisis		*		Double outlet right ventricle (DORV)		*	
Hypoplastic left heart syndrome		*		Ebstein's anomaly		*	
Hypospadias		5	26.54	Esophageal atresia/tracheoesophageal fistula		*	
Limb deficiencies (reduction defects)		*		Gastroschisis		*	
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*		Hypospadias		*	
Pulmonary valve atresia and stenosis		*		Pulmonary valve atresia and stenosis		*	
Renal agenesis/hypoplasia		*		Rectal and large intestinal atresia/stenosis		*	
Spina bifida without anencephaly		*		Renal agenesis/hypoplasia		*	
Trisomy 21 (Down syndrome)		*		Total anomalous pulmonary venous connection		*	
Ventricular septal defect		5	26.54	Transposition of the great arteries		*	
				Trisomy 21 (Down syndrome)		*	
				Ventricular septal defect		5	28.33

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County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
JOHNSON	9280			JOHNSON	9280		
All Defects		147	158.41	Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		15	16.16
Anotia/microtia		*		Rectal and large intestinal atresia/stenosis		*	
Aortic valve stenosis		*		Renal agenesis/hypoplasia		*	
Atrial septal defect		38	40.95	Small intestinal atresia/stenosis		*	
Atrioventricular septal defect		*		Spina bifida without anencephaly		*	
Bladder exstrophy		*		Tetralogy of Fallot (TOF)		*	
Cleft lip only (without cleft palate)		*		Transposition of the great arteries		*	
Cleft lip with cleft palate		8	8.62	Trisomy 13 (Patau syndrome)		*	
Cleft palate only (without cleft lip)		*		Trisomy 18 (Edwards syndrome)		*	
Cloacal exstrophy		*		Trisomy 21 (Down syndrome)		8	8.62
Clubfoot		*		Ventricular septal defect		21	22.63
Coarctation of aorta		*					
Craniosynostosis		*					
Diaphragmatic hernia		*					
Double outlet right ventricle (DORV)		*					
Encephalocele		*					
Esophageal atresia/tracheoesophageal fistula		*					
Fetal alcohol syndrome		*					
Gastroschisis		*					
Holoprosencephaly		*					
Hypoplastic left heart syndrome		*					
Hypospadias		10	10.78				
Limb deficiencies (reduction defects)		*					

Note 1—* indicates < 5 in number occurred.

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
KNOX	2325						
All Defects		35	150.54				
Anotia/microtia		*					
Atrial septal defect		9	38.71				
Cleft lip with cleft palate		*					
Coarctation of aorta		*					
Craniosynostosis		*					
Gastroschisis		*					
Hypospadias		*					
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*					
Pulmonary valve atresia and stenosis		*					
Rectal and large intestinal atresia/stenosis		*					
Renal agenesis/hypoplasia		*					
Single ventricle		*					
Spina bifida without anencephaly		*					
Transposition of the great arteries		*					
Ventricular septal defect		6	25.81				

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
KOSCIUSKO	5177			KOSCIUSKO	5177		
All Defects		149	287.81	Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		8	15.45
Atrial septal defect		22	42.5	Pulmonary valve atresia and stenosis		*	
Atrioventricular septal defect		*		Rectal and large intestinal atresia/stenosis		*	
Choanal atresia		*		Renal agenesis/hypoplasia		*	
Cleft lip only (without cleft palate)		*		Small intestinal atresia/stenosis		*	
Cleft lip with cleft palate		6	11.59	Spina bifida without anencephaly		*	
Cleft palate only (without cleft lip)		*		Tetralogy of Fallot (TOF)		*	
Cloacal exstrophy		*		Transposition of the great arteries		*	
Clubfoot		*		Trisomy 18 (Edwards syndrome)		*	
Coarctation of aorta		*		Trisomy 21 (Down syndrome)		7	13.52
Congenital posterior urethral valves		*		Ventricular septal defect		22	42.5
Craniosynostosis		10	19.32				
Diaphragmatic hernia		*					
Double outlet right ventricle (DORV)		*					
Encephalocele		*					
Esophageal atresia/tracheoesophageal fistula		*					
Fetal alcohol syndrome		*					
Gastroschisis		*					
Holoprosencephaly		*					
Hypoplastic left heart syndrome		*					
Hypospadias		23	44.43				
Interrupted aortic arch (IAA)		*					

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
LAGRANGE	3726			LAGRANGE	3726		
All Defects		62	166.4	Single ventricle		*	
Atrial septal defect		5	13.42	Spina bifida without anencephaly		*	
Bladder exstrophy		*		Transposition of the great arteries		*	
Choanal atresia		*		Tricuspid valve atresia and stenosis		*	
Cleft lip with cleft palate		*		Trisomy 13 (Patau syndrome)		*	
Cleft palate only (without cleft lip)		*		Trisomy 21 (Down syndrome)		*	
Clubfoot		*		Ventricular septal defect		9	24.15
Coarctation of aorta		*					
Congenital posterior urethral valves		*					
Craniosynostosis		9	24.15				
Diaphragmatic hernia		*					
Fetal alcohol syndrome		*					
Hypospadias		10	26.84				
Limb deficiencies (reduction defects)		*					
Omphalocele		*					
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*					
Pulmonary valve atresia and stenosis		*					
Rectal and large intestinal atresia/stenosis		*					
Renal agenesis/hypoplasia		*					

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
LAKE	31189			LAKE	31189		
All Defects		594	190.45	Holoprosencephaly		8	2.57
Anencephaly		*		Hypoplastic left heart syndrome		*	
Anophthalmia/microphthalmia		*		Hypospadias		76	24.37
Anotia/microtia		7	2.24	Limb deficiencies (reduction defects)		7	2.24
Aortic valve stenosis		*		Omphalocele		*	
Atrial septal defect		96	30.78	Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		48	15.39
Atrioventricular septal defect		14	4.49	Pulmonary valve atresia and stenosis		15	4.81
Biliary atresia		*		Rectal and large intestinal atresia/stenosis		6	1.92
Choanal atresia		5	1.6	Renal agenesis/hypoplasia		*	
Cleft lip only (without cleft palate)		11	3.53	Single ventricle		*	
Cleft lip with cleft palate		20	6.41	Small intestinal atresia/stenosis		*	
Cleft palate only (without cleft lip)		17	5.45	Spina bifida without anencephaly		10	3.21
Cloacal exstrophy		*		Tetralogy of Fallot (TOF)		*	
Clubfoot		25	8.02	Transposition of the great arteries		7	2.24
Coarctation of aorta		8	2.57	Tricuspid valve atresia and stenosis		*	
Common truncus		*		Trisomy 13 (Patau syndrome)		*	
Congenital cataract		*		Trisomy 18 (Edwards syndrome)		*	
Congenital posterior urethral valves		*		Trisomy 21 (Down syndrome)		40	12.83
Craniosynostosis		15	4.81	Ventricular septal defect		100	32.06
Deletion 22 q11.2		*					
Diaphragmatic hernia		8	2.57				
Esophageal atresia/tracheoesophageal fistula		*					
Fetal alcohol syndrome		*					
Gastroschisis		7	2.24				

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
LA PORTE	6699			LA PORTE	6699		
All Defects		140	208.99	Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		13	19.41
Anophthalmia/microphthalmia		*		Pulmonary valve atresia and stenosis		*	
Anotia/microtia		*		Renal agenesis/hypoplasia		*	
Aortic valve stenosis		*		Small intestinal atresia/stenosis		*	
Atrial septal defect		19	28.36	Spina bifida without anencephaly		*	
Choanal atresia		*		Tetralogy of Fallot (TOF)		*	
Cleft lip with cleft palate		*		Transposition of the great arteries		*	
Cleft palate only (without cleft lip)		*		Trisomy 18 (Edwards syndrome)		*	
Clubfoot		8	11.94	Trisomy 21 (Down syndrome)		5	7.46
Coarctation of aorta		*		Ventricular septal defect		22	32.84
Congenital posterior urethral valves		*					
Craniosynostosis		7	10.45				
Diaphragmatic hernia		*					
Double outlet right ventricle (DORV)		*					
Encephalocele		*					
Esophageal atresia/tracheoesophageal fistula		*					
Fetal alcohol syndrome		*					
Gastroschisis		*					
Holoprosencephaly		*					
Hypospadias		21	31.35				
Limb deficiencies (reduction defects)		*					

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
LAWRENCE	2505			LAWRENCE	2505		
All Defects		56	223.55	Trisomy 21 (Down syndrome)		*	
Aortic valve stenosis		*		Ventricular septal defect		6	23.95
Atrial septal defect		10	39.92				
Atrioventricular septal defect		*					
Cleft palate only (without cleft lip)		*					
Clubfoot		*					
Coarctation of aorta		*					
Craniosynostosis		*					
Deletion 22 q11.2		*					
Double outlet right ventricle (DORV)		*					
Ebstein's anomaly		*					
Hypospadias		10	39.92				
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*					
Pulmonary valve atresia and stenosis		*					
Rectal and large intestinal atresia/stenosis		*					
Single ventricle		*					
Spina bifida without anencephaly		*					
Tetralogy of Fallot (TOF)		*					
Transposition of the great arteries		*					
Trisomy 18 (Edwards syndrome)		*					

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
MADISON	7856			MADISON	7856		
All Defects		158	201.12	Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		14	17.82
Aortic valve stenosis		*		Pulmonary valve atresia and stenosis		*	
Atrial septal defect		20	25.46	Rectal and large intestinal atresia/stenosis		*	
Atrioventricular septal defect		*		Renal agenesis/hypoplasia		*	
Bladder exstrophy		*		Small intestinal atresia/stenosis		*	
Cleft lip only (without cleft palate)		5	6.36	Spina bifida without anencephaly		*	
Cleft lip with cleft palate		*		Tetralogy of Fallot (TOF)		*	
Cleft palate only (without cleft lip)		*		Trisomy 21 (Down syndrome)		8	10.18
Cloacal exstrophy		*		Turner syndrome		*	
Clubfoot		6	7.64	Ventricular septal defect		21	26.73
Coarctation of aorta		*					
Congenital cataract		*					
Craniosynostosis		*					
Diaphragmatic hernia		*					
Ebstein's anomaly		*					
Esophageal atresia/tracheoesophageal fistula		*					
Gastroschisis		*					
Holoprosencephaly		*					
Hypoplastic left heart syndrome		*					
Hypospadias		27	34.37				
Limb deficiencies (reduction defects)		5	6.36				

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
MARION	74618			MARION	74618		
All Defects		1345	180.25	Encephalocele		*	
Anencephaly		*		Esophageal atresia/tracheoesophageal fistula		17	2.28
Anophthalmia/microphthalmia		6	.8	Fetal alcohol syndrome		15	2.01
Anotia/microtia		*		Gastroschisis		30	4.02
Aortic valve stenosis		10	1.34	Holoprosencephaly		31	4.15
Atrial septal defect		280	37.52	Hypoplastic left heart syndrome		14	1.88
Atrioventricular septal defect		19	2.55	Hypospadias		143	19.16
Biliary atresia		*		Limb deficiencies (reduction defects)		10	1.34
Bladder exstrophy		*		Omphalocele		7	.94
Choanal atresia		9	1.21	Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		127	17.02
Cleft lip only (without cleft palate)		9	1.21	Pulmonary valve atresia and stenosis		43	5.76
Cleft lip with cleft palate		28	3.75	Rectal and large intestinal atresia/stenosis		21	2.81
Cleft palate only (without cleft lip)		28	3.75	Renal agenesis/hypoplasia		15	2.01
Cloacal exstrophy		*		Single ventricle		*	
Clubfoot		27	3.62	Small intestinal atresia/stenosis		13	1.74
Coarctation of aorta		23	3.08	Spina bifida without anencephaly		12	1.61
Common truncus		*		Tetralogy of Fallot (TOF)		21	2.81
Congenital cataract		*		Total anomalous pulmonary venous connection		*	
Congenital posterior urethral valves		5	.67	Transposition of the great arteries		12	1.61
Craniosynostosis		33	4.42				
Deletion 22 q11.2		*					
Diaphragmatic hernia		17	2.28				
Double outlet right ventricle (DORV)		8	1.07				
Ebstein's anomaly		*					

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect	Total	Rate		Defect	Total	Rate	
MARION	74618						
Tricuspid valve atresia and stenosis	5	.67					
Trisomy 13 (Patau syndrome)	5	.67					
Trisomy 18 (Edwards syndrome)	10	1.34					
Trisomy 21 (Down syndrome)	62	8.31					
Turner syndrome	*						
Ventricular septal defect	191	25.6					

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
MARSHALL	3016			MARSHALL	3016		
All Defects		50	165.78	Spina bifida without anencephaly		*	
Atrial septal defect		*		Trisomy 21 (Down syndrome)		*	
Choanal atresia		*		Ventricular septal defect		6	19.89
Cleft lip only (without cleft palate)		*		MARTIN	648		
Cloacal exstrophy		*		All Defects		9	138.89
Clubfoot		*		Aortic valve stenosis		*	
Coarctation of aorta		*		Coarctation of aorta		*	
Congenital posterior urethral valves		*		Gastroschisis		*	
Craniosynostosis		*		Holoprosencephaly		*	
Diaphragmatic hernia		*		Hypospadias		*	
Ebstein's anomaly		*		Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*	
Esophageal atresia/tracheoesophageal fistula		*		Spina bifida without anencephaly		*	
Gastroschisis		*		Ventricular septal defect		*	
Holoprosencephaly		*					
Hypoplastic left heart syndrome		*					
Hypospadias		*					
Omphalocele		*					
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		9	29.84				
Pulmonary valve atresia and stenosis		*					
Renal agenesis/hypoplasia		*					

Note 1—* indicates < 5 in number occurred.

Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

Data compiled on 9/30/2015 3:39:48 PM

County	Live Births	Total	Rate	County	Live Births	Total	Rate
Defect				Defect			
MIAMI	1944			MIAMI	1944		
All Defects		53	272.63	Trisomy 21 (Down syndrome)		*	
Atrial septal defect		12	61.73	Ventricular septal defect		6	30.86
Cleft lip with cleft palate		*					
Cleft palate only (without cleft lip)		*					
Clubfoot		*					
Coarctation of aorta		*					
Craniosynostosis		*					
Double outlet right ventricle (DORV)		*					
Fetal alcohol syndrome		*					
Gastroschisis		*					
Hypoplastic left heart syndrome		*					
Hypospadias		5	25.72				
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*					
Pulmonary valve atresia and stenosis		*					
Rectal and large intestinal atresia/stenosis		*					
Spina bifida without anencephaly		*					
Tetralogy of Fallot (TOF)		*					
Total anomalous pulmonary venous connection		*					
Transposition of the great arteries		*					

Note 1—* indicates < 5 in number occurred.

Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

Data compiled on 9/30/2015 3:39:48 PM

County	Live Births	Total	Rate	County	Live Births	Total	Rate
Defect				Defect			
MONROE	6488			MONROE	6488		
All Defects		128	197.29	Rectal and large intestinal atresia/stenosis		*	
Anotia/microtia		*		Renal agenesis/hypoplasia		*	
Atrial septal defect		25	38.53	Single ventricle		*	
Atrioventricular septal defect		*		Small intestinal atresia/stenosis		*	
Cleft lip only (without cleft palate)		*		Tetralogy of Fallot (TOF)		*	
Cleft lip with cleft palate		*		Transposition of the great arteries		*	
Cleft palate only (without cleft lip)		6	9.25	Trisomy 18 (Edwards syndrome)		*	
Clubfoot		*		Trisomy 21 (Down syndrome)		9	13.87
Coarctation of aorta		*		Ventricular septal defect		21	32.37
Congenital posterior urethral valves		*					
Craniosynostosis		*					
Ebstein's anomaly		*					
Encephalocele		*					
Esophageal atresia/tracheoesophageal fistula		*					
Gastroschisis		*					
Holoprosencephaly		*					
Hypoplastic left heart syndrome		*					
Hypospadias		12	18.5				
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		12	18.5				
Pulmonary valve atresia and stenosis		*					

Note 1—* indicates < 5 in number occurred.

Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
MONTGOMERY	2367			MONTGOMERY	2367		
All Defects		79	333.76	Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		7	29.57
Anotia/microtia		*		Pulmonary valve atresia and stenosis		*	
Aortic valve stenosis		*		Renal agenesis/hypoplasia		*	
Atrial septal defect		14	59.15	Single ventricle		*	
Atrioventricular septal defect		*		Small intestinal atresia/stenosis		*	
Cleft lip only (without cleft palate)		*		Total anomalous pulmonary venous connection		*	
Cleft lip with cleft palate		*		Tricuspid valve atresia and stenosis		*	
Cleft palate only (without cleft lip)		*		Turner syndrome		*	
Clubfoot		*		Ventricular septal defect		12	50.7
Coarctation of aorta		*					
Craniosynostosis		*					
Double outlet right ventricle (DORV)		*					
Esophageal atresia/tracheoesophageal fistula		*					
Fetal alcohol syndrome		*					
Gastroschisis		*					
Holoprosencephaly		*					
Hypoplastic left heart syndrome		*					
Hypospadias		12	50.7				
Interrupted aortic arch (IAA)		*					
Limb deficiencies (reduction defects)		*					

Note 1—* indicates < 5 in number occurred.

Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
MORGAN	4016			MORGAN	4016		
All Defects		70	174.3	Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*	
Aortic valve stenosis		*		Pulmonary valve atresia and stenosis		*	
Atrial septal defect		18	44.82	Rectal and large intestinal atresia/stenosis		*	
Atrioventricular septal defect		*		Renal agenesis/hypoplasia		*	
Biliary atresia		*		Small intestinal atresia/stenosis		*	
Bladder exstrophy		*		Spina bifida without anencephaly		*	
Choanal atresia		*		Tetralogy of Fallot (TOF)		*	
Cleft lip only (without cleft palate)		*		Tricuspid valve atresia and stenosis		*	
Cleft palate only (without cleft lip)		*		Trisomy 21 (Down syndrome)		*	
Cloacal exstrophy		*		Ventricular septal defect	5		12.45
Coarctation of aorta		*					
Common truncus		*					
Craniosynostosis		*					
Diaphragmatic hernia		*					
Double outlet right ventricle (DORV)		*					
Encephalocele		*					
Esophageal atresia/tracheoesophageal fistula		*					
Gastroschisis		*					
Holoprosencephaly		*					
Hypospadias		6	14.94				
Interrupted aortic arch (IAA)		*					

Note 1—* indicates < 5 in number occurred.

Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
NEWTON	736						
All Defects		11	149.46				
Atrial septal defect		*					
Biliary atresia		*					
Cleft palate only (without cleft lip)		*					
Coarctation of aorta		*					
Congenital posterior urethral valves		*					
Gastroschisis		*					
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*					
Trisomy 18 (Edwards syndrome)		*					
Ventricular septal defect		*					

Note 1—* indicates < 5 in number occurred.

Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

Data compiled on 9/30/2015 3:39:48 PM

County	Live Births	Total	Rate	County	Live Births	Total	Rate
Defect				Defect			
NOBLE	3102			NOBLE	3102		
All Defects		94	303.03	Rectal and large intestinal atresia/stenosis		*	
Aortic valve stenosis		*		Renal agenesis/hypoplasia		*	
Atrial septal defect		11	35.46	Spina bifida without anencephaly		*	
Atrioventricular septal defect		*		Trisomy 21 (Down syndrome)		*	
Choanal atresia		*		Ventricular septal defect	12		38.68
Cleft lip with cleft palate		*					
Cloacal exstrophy		*					
Clubfoot		*					
Coarctation of aorta		*					
Craniosynostosis		6	19.34				
Double outlet right ventricle (DORV)		*					
Ebstein's anomaly		*					
Esophageal atresia/tracheoesophageal fistula		*					
Fetal alcohol syndrome		*					
Gastroschisis		*					
Holoprosencephaly		*					
Hypoplastic left heart syndrome		*					
Hypospadias		12	38.68				
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		12	38.68				
Pulmonary valve atresia and stenosis		5	16.12				

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
ORANGE	1129			OWEN	1179		
All Defects		23	203.72	All Defects		28	237.49
Atrial septal defect		*		Atrial septal defect		8	67.85
Cleft lip only (without cleft palate)		*		Choanal atresia		*	
Cleft lip with cleft palate		*		Cleft lip only (without cleft palate)		*	
Cloacal exstrophy		*		Cleft lip with cleft palate		*	
Coarctation of aorta		*		Cleft palate only (without cleft lip)		*	
Diaphragmatic hernia		*		Clubfoot		*	
Double outlet right ventricle (DORV)		*		Coarctation of aorta		*	
Esophageal atresia/tracheoesophageal fistula		*		Diaphragmatic hernia		*	
Hypospadias		*		Hypospadias		5	42.41
Pulmonary valve atresia and stenosis		*		Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*	
Rectal and large intestinal atresia/stenosis		*		Spina bifida without anencephaly		*	
Renal agenesis/hypoplasia		*		Transposition of the great arteries		*	
Small intestinal atresia/stenosis		*		Ventricular septal defect		*	
Tetralogy of Fallot (TOF)		*					
Trisomy 21 (Down syndrome)		*		PARKE	956		
Ventricular septal defect		5	44.29	All Defects		11	115.06
				Atrial septal defect		*	
				Atrioventricular septal defect		*	
				Pulmonary valve atresia and stenosis		*	
				Trisomy 21 (Down syndrome)		*	
				Ventricular septal defect		*	

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
PERRY	1070			PIKE	718		
All Defects		15	140.19	All Defects		12	167.13
Atrial septal defect		*		Atrial septal defect		*	
Atrioventricular septal defect		*		Atrioventricular septal defect		*	
Choanal atresia		*		Clubfoot		*	
Coarctation of aorta		*		Coarctation of aorta		*	
Craniosynostosis		*		Congenital cataract		*	
Holoprosencephaly		*		Double outlet right ventricle (DORV)		*	
Hypospadias		*		Esophageal atresia/tracheoesophageal fistula		*	
Total anomalous pulmonary venous connection		*		Gastroschisis		*	
Trisomy 18 (Edwards syndrome)		*		Limb deficiencies (reduction defects)		*	
Trisomy 21 (Down syndrome)		*		Ventricular septal defect		*	
Ventricular septal defect		*					

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Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
PORTER	8710			PORTER	8710		
All Defects		127	145.81	Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		11	12.63
Anophthalmia/microphthalmia		*		Pulmonary valve atresia and stenosis		*	
Aortic valve stenosis		*		Renal agenesis/hypoplasia		*	
Atrial septal defect		23	26.41	Spina bifida without anencephaly		*	
Atrioventricular septal defect		*		Tetralogy of Fallot (TOF)		*	
Biliary atresia		*		Trisomy 18 (Edwards syndrome)		*	
Cleft lip only (without cleft palate)		*		Trisomy 21 (Down syndrome)		12	13.78
Cleft lip with cleft palate		*		Ventricular septal defect		16	18.37
Cleft palate only (without cleft lip)		*					
Cloacal exstrophy		*					
Clubfoot		5	5.74				
Coarctation of aorta		*					
Congenital cataract		*					
Craniosynostosis		*					
Diaphragmatic hernia		*					
Encephalocele		*					
Fetal alcohol syndrome		*					
Gastroschisis		*					
Holoprosencephaly		*					
Hypoplastic left heart syndrome		*					
Hypospadias		12	13.78				
Limb deficiencies (reduction defects)		8	9.18				
Omphalocele		*					

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
POSEY	1413			PUTNAM	1829		
All Defects		19	134.47	All Defects		47	256.97
Atrial septal defect		*		Anotia/microtia		*	
Cleft lip with cleft palate		*		Aortic valve stenosis		*	
Cleft palate only (without cleft lip)		*		Atrial septal defect		9	49.21
Clubfoot		*		Biliary atresia		*	
Coarctation of aorta		*		Cleft palate only (without cleft lip)		*	
Ebstein's anomaly		*		Clubfoot		*	
Hypospadias		5	35.39	Craniosynostosis		*	
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*		Esophageal atresia/tracheoesophageal fistula		*	
Renal agenesis/hypoplasia		*		Gastroschisis		*	
Tetralogy of Fallot (TOF)		*		Holoprosencephaly		*	
Transposition of the great arteries		*		Hypospadias		*	
Ventricular septal defect		*		Limb deficiencies (reduction defects)		6	32.8
PULASKI	728			Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*	
All Defects		11	151.1	Renal agenesis/hypoplasia		*	
Aortic valve stenosis		*		Spina bifida without anencephaly		*	
Atrial septal defect		*		Tetralogy of Fallot (TOF)		*	
Cleft palate only (without cleft lip)		*		Ventricular septal defect		7	38.27
Clubfoot		*					
Hypospadias		*					
Ventricular septal defect		*					

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
RANDOLPH	1516			RANDOLPH	1516		
All Defects		55	362.8	Spina bifida without anencephaly		*	
Atrial septal defect		11	72.56	Tetralogy of Fallot (TOF)		*	
Atrioventricular septal defect		*		Transposition of the great arteries		*	
Choanal atresia		*		Trisomy 21 (Down syndrome)		*	
Cleft lip only (without cleft palate)		*		Ventricular septal defect	7		46.17
Cleft lip with cleft palate		*					
Cleft palate only (without cleft lip)		*		RIPLEY	1650		
Cloacal exstrophy		*		All Defects		9	54.55
Clubfoot		*		Atrial septal defect		*	
Coarctation of aorta		*		Cleft palate only (without cleft lip)		*	
Craniosynostosis		*		Diaphragmatic hernia		*	
Deletion 22 q11.2		*		Gastroschisis		*	
Diaphragmatic hernia		*		Holoprosencephaly		*	
Ebstein's anomaly		*		Pulmonary valve atresia and stenosis		*	
Gastroschisis		*		Renal agenesis/hypoplasia		*	
Holoprosencephaly		*		Spina bifida without anencephaly		*	
Hypospadias		5	32.98	Trisomy 21 (Down syndrome)		*	
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		6	39.58				
Pulmonary valve atresia and stenosis		*					
Rectal and large intestinal atresia/stenosis		*					
Renal agenesis/hypoplasia		*					

Note 1—* indicates < 5 in number occurred.

Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
RUSH	907						
All Defects		15	165.38				
Aortic valve stenosis		*					
Atrial septal defect		*					
Atrioventricular septal defect		*					
Craniosynostosis		*					
Holoprosencephaly		*					
Hypospadias		*					
Small intestinal atresia/stenosis		*					
Trisomy 21 (Down syndrome)		*					

Note 1—* indicates < 5 in number occurred.

Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
ST. JOSEPH	17894			ST. JOSEPH	17894		
All Defects		406	226.89	Hypoplastic left heart syndrome		*	
Anotia/microtia		*		Hypospadias		34	19
Aortic valve stenosis		*		Limb deficiencies (reduction defects)		10	5.59
Atrial septal defect		31	17.32	Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		49	27.38
Atrioventricular septal defect		6	3.35	Pulmonary valve atresia and stenosis		12	6.71
Biliary atresia		*		Rectal and large intestinal atresia/stenosis		10	5.59
Choanal atresia		*		Renal agenesis/hypoplasia		9	5.03
Cleft lip only (without cleft palate)		5	2.79	Small intestinal atresia/stenosis		8	4.47
Cleft lip with cleft palate		8	4.47	Spina bifida without anencephaly		11	6.15
Cleft palate only (without cleft lip)		16	8.94	Tetralogy of Fallot (TOF)		8	4.47
Cloacal exstrophy		*		Total anomalous pulmonary venous connection		*	
Clubfoot		26	14.53	Transposition of the great arteries		*	
Coarctation of aorta		*		Tricuspid valve atresia and stenosis		*	
Common truncus		*		Trisomy 18 (Edwards syndrome)		*	
Congenital cataract		5	2.79	Trisomy 21 (Down syndrome)		26	14.53
Congenital posterior urethral valves		*		Ventricular septal defect		38	21.24
Craniosynostosis		32	17.88				
Diaphragmatic hernia		*					
Double outlet right ventricle (DORV)		*					
Encephalocele		*					
Esophageal atresia/tracheoesophageal fistula		5	2.79				
Fetal alcohol syndrome		5	2.79				
Gastroschisis		12	6.71				
Holoprosencephaly		5	2.79				

Note 1—* indicates < 5 in number occurred.

Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
SCOTT	1475						
All Defects		8	54.24				
Atrial septal defect		*					
Coarctation of aorta		*					
Pulmonary valve atresia and stenosis		*					
Ventricular septal defect		*					

Note 1—* indicates < 5 in number occurred.

Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
SHELBY	2598			SHELBY	2598		
All Defects		52	200.15	Trisomy 21 (Down syndrome)		*	
Anophthalmia/microphthalmia		*		Ventricular septal defect		12	46.19
Aortic valve stenosis		*					
Atrial septal defect		11	42.34	SPENCER	1131		
Clubfoot		*		All Defects		11	97.26
Coarctation of aorta		*		Anotia/microtia		*	
Diaphragmatic hernia		*		Atrial septal defect		*	
Ebstein's anomaly		*		Craniosynostosis		*	
Encephalocele		*		Hypospadias		*	
Esophageal atresia/tracheoesophageal fistula		*		Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*	
Holoprosencephaly		*					
Hypoplastic left heart syndrome		*		Pulmonary valve atresia and stenosis		*	
Hypospadias		*		Trisomy 21 (Down syndrome)		*	
Limb deficiencies (reduction defects)		*					
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*					
Pulmonary valve atresia and stenosis		*					
Rectal and large intestinal atresia/stenosis		*					
Renal agenesis/hypoplasia		*					
Trisomy 18 (Edwards syndrome)		*					

Note 1—* indicates < 5 in number occurred.

Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
STARKE	1403			STEUBEN	1786		
All Defects		15	106.91	All Defects		71	397.54
Atrial septal defect		*		Anotia/microtia		*	
Cleft palate only (without cleft lip)		*		Aortic valve stenosis		*	
Craniosynostosis		*		Atrial septal defect		7	39.19
Encephalocele		*		Atrioventricular septal defect		*	
Hypospadias		*		Biliary atresia		*	
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*		Cleft lip with cleft palate		*	
Spina bifida without anencephaly		*		Cleft palate only (without cleft lip)		*	
Trisomy 18 (Edwards syndrome)		*		Clubfoot		*	
Trisomy 21 (Down syndrome)		*		Coarctation of aorta		*	
Turner syndrome		*		Craniosynostosis		5	28
Ventricular septal defect		*		Diaphragmatic hernia		*	
				Fetal alcohol syndrome		*	
				Gastroschisis		*	
				Hypoplastic left heart syndrome		*	
				Hypospadias		13	72.79
				Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		16	89.59
				Pulmonary valve atresia and stenosis		*	
				Tetralogy of Fallot (TOF)		*	
				Trisomy 21 (Down syndrome)		5	28
				Ventricular septal defect		5	28

Note 1—* indicates < 5 in number occurred.

Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
SULLIVAN	1151						
All Defects		20	173.76				
Atrial septal defect		*					
Cleft lip only (without cleft palate)		*					
Hypoplastic left heart syndrome		*					
Hypospadias		*					
Limb deficiencies (reduction defects)		*					
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*					
Pulmonary valve atresia and stenosis		*					
Rectal and large intestinal atresia/stenosis		*					
Spina bifida without anencephaly		*					
Tetralogy of Fallot (TOF)		*					
Trisomy 21 (Down syndrome)		*					
Ventricular septal defect		*					
SWITZERLAND	614						
All Defects		*					
Hypospadias		*					
Trisomy 21 (Down syndrome)		*					
Ventricular septal defect		*					

Note 1—* indicates < 5 in number occurred.

Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
TIPPECANOE	11190			TIPPECANOE	11190		
All Defects		324	289.54	Hypospadias		28	25.02
Anophthalmia/microphthalmia		*		Interrupted aortic arch (IAA)		*	
Anotia/microtia		*		Limb deficiencies (reduction defects)		*	
Aortic valve stenosis		5	4.47	Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		16	14.3
Atrial septal defect		63	56.3	Pulmonary valve atresia and stenosis		12	10.72
Atrioventricular septal defect		6	5.36	Rectal and large intestinal atresia/stenosis		8	7.15
Biliary atresia		*		Renal agenesis/hypoplasia		*	
Bladder exstrophy		*		Small intestinal atresia/stenosis		*	
Choanal atresia		*		Spina bifida without anencephaly		5	4.47
Cleft lip only (without cleft palate)		*		Tetralogy of Fallot (TOF)		*	
Cleft lip with cleft palate		7	6.26	Total anomalous pulmonary venous connection		*	
Cleft palate only (without cleft lip)		*		Transposition of the great arteries		*	
Cloacal exstrophy		*		Tricuspid valve atresia and stenosis		*	
Clubfoot		12	10.72	Trisomy 21 (Down syndrome)		10	8.94
Coarctation of aorta		*		Ventricular septal defect		76	67.92
Congenital cataract		6	5.36				
Craniosynostosis		15	13.4				
Diaphragmatic hernia		*					
Double outlet right ventricle (DORV)		*					
Encephalocele		*					
Esophageal atresia/tracheoesophageal fistula		*					
Fetal alcohol syndrome		*					
Gastroschisis		5	4.47				
Holoprosencephaly		5	4.47				

Note 1—* indicates < 5 in number occurred.

Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

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County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
TIPTON	731			UNION	144		
All Defects		28	383.04	All Defects		*	
Anotia/microtia		*		Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*	
Aortic valve stenosis		*					
Atrial septal defect		*					
Atrioventricular septal defect		*					
Choanal atresia		*					
Cleft lip only (without cleft palate)		*					
Cleft palate only (without cleft lip)		*					
Coarctation of aorta		*					
Congenital cataract		*					
Gastroschisis		*					
Hypospadias		6	82.08				
Interrupted aortic arch (IAA)		*					
Limb deficiencies (reduction defects)		*					
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*					
Spina bifida without anencephaly		*					
Trisomy 21 (Down syndrome)		*					
Ventricular septal defect		5	68.4				

Note 1—* indicates < 5 in number occurred.

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County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
VANDERBURGH	11630			VANDERBURGH	11630		
All Defects		159	136.72	Pulmonary valve atresia and stenosis		9	7.74
Atrial septal defect		19	16.34	Rectal and large intestinal atresia/stenosis		*	
Atrioventricular septal defect		*		Renal agenesis/hypoplasia		6	5.16
Cleft lip only (without cleft palate)		*		Single ventricle		*	
Cleft lip with cleft palate		*		Small intestinal atresia/stenosis		*	
Cleft palate only (without cleft lip)		*		Spina bifida without anencephaly		*	
Clubfoot		7	6.02	Tetralogy of Fallot (TOF)		6	5.16
Coarctation of aorta		*		Total anomalous pulmonary venous connection		*	
Common truncus		*		Transposition of the great arteries		*	
Deletion 22 q11.2		*		Tricuspid valve atresia and stenosis		*	
Diaphragmatic hernia		*		Trisomy 18 (Edwards syndrome)		*	
Double outlet right ventricle (DORV)		5	4.3	Trisomy 21 (Down syndrome)		*	
Esophageal atresia/tracheoesophageal fistula		*		Ventricular septal defect		28	24.08
Fetal alcohol syndrome		*					
Gastroschisis		*					
Hypoplastic left heart syndrome		*					
Hypospadias		19	16.34				
Limb deficiencies (reduction defects)		5	4.3				
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		10	8.6				

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County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
VERMILLION	820						
All Defects		18	219.51				
Atrial septal defect		6	73.17				
Cleft lip with cleft palate		*					
Cleft palate only (without cleft lip)		*					
Clubfoot		*					
Gastroschisis		*					
Hypospadias		*					
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*					
Pulmonary valve atresia and stenosis		*					
Tetralogy of Fallot (TOF)		*					

Note 1—* indicates < 5 in number occurred.

Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

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County	Live Births			County	Live Births		
Defect	Total	Rate		Defect	Total	Rate	
VIGO	6493			VIGO	6493		
All Defects	178	274.14		Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified	25	38.5	
Aortic valve stenosis	*			Pulmonary valve atresia and stenosis	8	12.32	
Atrial septal defect	28	43.12		Rectal and large intestinal atresia/stenosis	6	9.24	
Atrioventricular septal defect	*			Renal agenesis/hypoplasia	*		
Cleft lip only (without cleft palate)	*			Single ventricle	*		
Cleft lip with cleft palate	5	7.7		Small intestinal atresia/stenosis	*		
Cleft palate only (without cleft lip)	*			Spina bifida without anencephaly	*		
Cloacal exstrophy	*			Tetralogy of Fallot (TOF)	*		
Clubfoot	6	9.24		Transposition of the great arteries	*		
Coarctation of aorta	*			Tricuspid valve atresia and stenosis	*		
Congenital cataract	*			Trisomy 21 (Down syndrome)	*		
Craniosynostosis	*			Ventricular septal defect	32	49.28	
Diaphragmatic hernia	*						
Double outlet right ventricle (DORV)	*						
Ebstein's anomaly	*						
Fetal alcohol syndrome	*						
Gastroschisis	*						
Holoprosencephaly	5	7.7					
Hypoplastic left heart syndrome	*						
Hypospadias	11	16.94					
Limb deficiencies (reduction defects)	6	9.24					

Note 1—* indicates < 5 in number occurred.

Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

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County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
WABASH	1791			WARREN	463		
All Defects		35	195.42	All Defects		11	237.58
Atrial septal defect		5	27.92	Atrial septal defect		*	
Clubfoot		*		Clubfoot		*	
Coarctation of aorta		*		Hypospadias		*	
Craniosynostosis		*		Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*	
Diaphragmatic hernia		*		Pulmonary valve atresia and stenosis		*	
Esophageal atresia/tracheoesophageal fistula		*		Renal agenesis/hypoplasia		*	
Fetal alcohol syndrome		*		Ventricular septal defect		*	
Hypospadias		6	33.5				
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*					
Pulmonary valve atresia and stenosis		*					
Small intestinal atresia/stenosis		*					
Spina bifida without anencephaly		*					
Tetralogy of Fallot (TOF)		*					
Trisomy 21 (Down syndrome)		*					
Ventricular septal defect		*					

Note 1—* indicates < 5 in number occurred.

Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
WARRICK	3344			WASHINGTON	1552		
All Defects		53	158.49	All Defects		17	109.54
Atrial septal defect		8	23.92	Atrial septal defect		*	
Atrioventricular septal defect		*		Cleft lip only (without cleft palate)		*	
Choanal atresia		*		Cleft palate only (without cleft lip)		*	
Cleft lip only (without cleft palate)		*		Hypospadias		*	
Cleft lip with cleft palate		*		Limb deficiencies (reduction defects)		*	
Cleft palate only (without cleft lip)		*		Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*	
Clubfoot		*		Trisomy 21 (Down syndrome)		*	
Coarctation of aorta		*		Ventricular septal defect		5	32.22
Diaphragmatic hernia		*					
Encephalocele		*					
Gastroschisis		*					
Hypospadias		12	35.89				
Omphalocele		*					
Pulmonary valve atresia and stenosis		*					
Rectal and large intestinal atresia/stenosis		*					
Renal agenesis/hypoplasia		*					
Spina bifida without anencephaly		*					
Transposition of the great arteries		*					
Trisomy 18 (Edwards syndrome)		*					
Trisomy 21 (Down syndrome)		*					
Ventricular septal defect		9	26.91				

Note 1—* indicates < 5 in number occurred.

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County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
WAYNE	4117			WAYNE	4117		
All Defects		72	174.88	Transposition of the great arteries	*		
Anotia/microtia		*		Trisomy 18 (Edwards syndrome)	*		
Atrial septal defect		15	36.43	Trisomy 21 (Down syndrome)	*		
Atrioventricular septal defect		*		Ventricular septal defect		12	29.15
Cleft lip with cleft palate		*					
Cleft palate only (without cleft lip)		*					
Clubfoot		*					
Coarctation of aorta		*					
Craniosynostosis		*					
Double outlet right ventricle (DORV)		*					
Encephalocele		*					
Gastroschisis		*					
Holoprosencephaly		*					
Hypoplastic left heart syndrome		*					
Hypospadias		*					
Interrupted aortic arch (IAA)		*					
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		8	19.43				
Pulmonary valve atresia and stenosis		*					
Single ventricle		*					
Spina bifida without anencephaly		*					
Tetralogy of Fallot (TOF)		*					

Note 1—* indicates < 5 in number occurred.

Note 2—Rates based on fewer than 20 cases are unstable and are not comparable.

Data compiled on 9/30/2015 3:39:48 PM

County	Live Births			County	Live Births		
Defect		Total	Rate	Defect		Total	Rate
WELLS	1746			WELLS	1746		
All Defects		64	366.55	Ventricular septal defect		13	74.46
Atrial septal defect		8	45.82	WHITE	1495		
Atrioventricular septal defect		*		All Defects		40	267.56
Cleft lip with cleft palate		*		Atrial septal defect		5	33.44
Cleft palate only (without cleft lip)		*		Atrioventricular septal defect		*	
Clubfoot		*		Cleft palate only (without cleft lip)		*	
Coarctation of aorta		*		Clubfoot		*	
Craniosynostosis		5	28.64	Coarctation of aorta		*	
Diaphragmatic hernia		*		Craniosynostosis		*	
Double outlet right ventricle (DORV)		*		Diaphragmatic hernia		*	
Esophageal atresia/tracheoesophageal fistula		*		Gastroschisis		*	
Gastroschisis		*		Hypospadias		*	
Hypospadias		8	45.82	Limb deficiencies (reduction defects)		*	
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		7	40.09	Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		*	
Pulmonary valve atresia and stenosis		*		Pulmonary valve atresia and stenosis		*	
Rectal and large intestinal atresia/stenosis		*		Single ventricle		*	
Tetralogy of Fallot (TOF)		*		Tetralogy of Fallot (TOF)		*	
Transposition of the great arteries		*		Trisomy 21 (Down syndrome)		*	
Trisomy 21 (Down syndrome)		*		Ventricular septal defect		11	73.58

Note 1—* indicates < 5 in number occurred.

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Data compiled on 9/30/2015 3:39:48 PM

County	Live Births	Total	Rate	County	Live Births	Total	Rate
Defect				Defect			
WHITLEY	1955			UNKNOWN	539		
All Defects		43	219.95	All Defects		24	445.27
Atrial septal defect		8	40.92	Anencephaly		*	
Cleft lip only (without cleft palate)		*		Atrial septal defect		*	
Clubfoot		*		Atrioventricular septal defect		*	
Craniosynostosis		*		Cleft palate only (without cleft lip)		*	
Deletion 22 q11.2		*		Fetal alcohol syndrome		7	129.87
Fetal alcohol syndrome		*		Hypospadias		*	
Gastroschisis		*		Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		5	92.76
Hypospadias		6	30.69	Pulmonary valve atresia and stenosis		*	
Limb deficiencies (reduction defects)		*		Rectal and large intestinal atresia/stenosis		*	
Pervasive developmental disorders, including autism, childhood disintegrative disorder, Asperger's syndrome, Rett syndrome, & pervasive developmental disorders not otherwise specified		5	25.58	Trisomy 21 (Down syndrome)		*	
Pulmonary valve atresia and stenosis		*		Ventricular septal defect		*	
Spina bifida without anencephaly		*					
Tetralogy of Fallot (TOF)		*					
Trisomy 21 (Down syndrome)		6	30.69				
Ventricular septal defect		*					

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Table 9: 2008-2012 Homebirths to Indiana Women

Birth Year	Total Births	Deaths in First Year of Life	Births with at Least One Reportable
2008	1195	9	43
2009	1098	7	42
2010	1342	7	61
2011	1375	13	50
2012	1350	11	56