



Hospital Reporting Rates of Adverse Pregnancy Outcomes in 2022 May 2024

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Adverse Pregnancy Outcomes Reporting System

PURPOSE

The Illinois Department of Public Health's (IDPH) regulations require hospitals to report adverse pregnancy outcomes identified in Illinois residents during the newborn hospital stay. In 2022, these included infants with birth defects, prematurity (less than 31 weeks), serious congenital infections, intrauterine growth restriction, retinopathy of prematurity, those who had other serious conditions, and those who died during the newborn stay. Additionally, effective March 1, 2022, new conditions were added to the Adverse Pregnancy Outcomes Reporting System's (APORS) reporting requirements, including prenatal exposure to marijuana, Hepatitis C disease or perinatal exposure, and HIV exposure (Appendix 1). Rates of adverse pregnancy outcome reporting are calculated by APORS to compare the number of adverse pregnancy outcomes each hospital reported to the number of live births at that hospital. The results are used to provide hospital-specific feedback to improve the completeness of case reporting.

METHODS

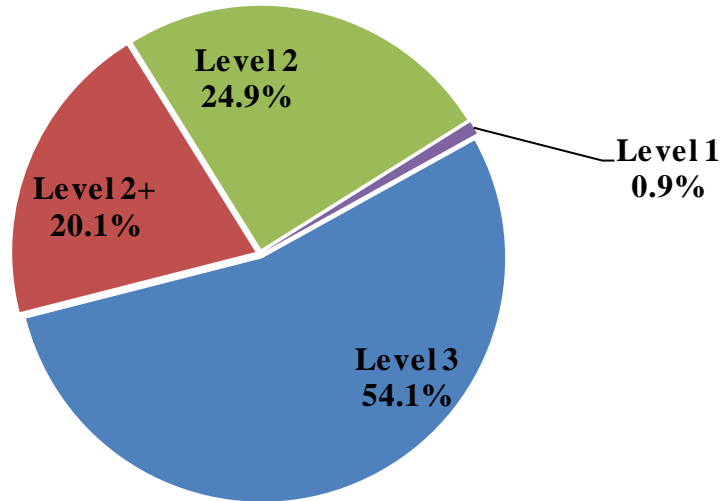
Three hospitals are excluded from this report because they provided services to newborns transferred from other hospitals, but deliveries did not take place at these locations. Data for 2022 shows that 122,574 births occurred at the 97 hospitals in the Illinois Perinatal Network. The

number of births is based on the 2022 birth certificates filed by hospitals with IDPH's Division of Vital Records. These 97 hospitals reported 13,600 cases to APORS electronically or on paper forms provided by IDPH. Each hospital's case reporting rate was calculated as the percentage of reported cases among the total number of births at that hospital. The reporting rate for a hospital-level was calculated as the number of cases reported by hospitals at that level divided by the total number of births at hospitals at that level.

RESULTS

Overall Case Reporting Rates. For 2022, case reporting rates among all hospitals ranged from 0.0% to 30.3% with an average of 11.1%, which was substantially higher than the 2021 average of 7.4%. In Illinois, hospitals are certified at one of four levels, depending on the services they offer. Level 3 facilities care for patients requiring the most complex care and operate a neonatal intensive care unit (NICU). Level 2+ hospitals provide care to newborns at moderate risk and operate a special care nursery (SCN), but not a NICU. Level 2 hospitals provide care to newborns at moderate risk and have intermediate care nurseries, but do not operate a NICU or a SCN. Level 1 hospitals provide care to low-risk newborns and have general care nurseries. Since mothers, whose babies have known or suspected adverse outcomes, are expected to deliver at Level 3 or 2+ hospitals to ensure their babies receive the appropriate care, the analyses of case completeness rates were reported separately for each care level. If a baby was transferred between hospitals, the highest-level facility was responsible for reporting the case. More than half of APORS cases were reported by Level 3 facilities (Figure 1).

Figure 1. Percentage of APORS Cases Reported by Hospital Level, 2022



Hospital Case Reporting Rates. When examining average reporting rates by level of care, Level 3 hospitals reported an average rate of 11.7% (Table 1), while the average reporting rate for Level 2 hospitals was 10.7% and Level 2+ hospitals was 10.1%, (Tables 2, and 3). Level 1 hospitals had the highest rate at 12.5% (Table 4).

For each level of hospital care, reporting rates varied. Among Level 3 hospitals, the reporting rates ranged from 1.7% to 30.3%. Among Level 2+ hospitals, rates ranged from 2.3% to 28.7%, while among Level 2 facilities, the range was 0.0% to 30.3%. Among the Level 1 hospitals, rates ranged from 0.0% to 28.2%.

Table 1. Case Reporting Rates in 2022 for Level 3 Hospitals

Hospital	Cases	Rate	Hospital	Cases	Rate
3-1	506	17.8%	3-14	521	23.4%
3-2	653	16.2%	3-15	144	18.0%
3-3	319	9.3%	3-16	76	9.9%
3-4	174	16.0%	3-17	92	6.1%
3-5	353	10.8%	3-18	76	4.8%
3-6	248	7.8%	3-19	1,131	9.8%
3-7	127	5.2%	3-20	439	18.1%
3-8	193	7.1%	3-21	34	4.4%
3-9	247	7.2%	3-22	425	16.3%
3-10	118	7.1%	3-23	227	12.1%
3-11	165	6.5%	3-24	10	1.7%
3-12	286	10.8%	3-25	97	20.4%
3-13	694	30.3%	<i>Combined</i>	<i>7,355</i>	<i>11.7%</i>

Table 2. Case Reporting Rates in 2022 for Level 2+ Hospitals

Hospital	Cases	Rate	Hospital	Cases	Rate
2+-1	41	28.7%	2+-11	29	2.3%
2+-2	89	20.0%	2+-12	97	5.9%
2+-3	66	10.0%	2+-13	124	7.3%
2+-4	69	10.3%	2+-14	294	17.0%
2+-5	105	12.3%	2+-15	146	7.3%
2+-6	34	3.8%	2+-16	375	18.2%
2+-7	139	14.9%	2+-17	193	6.6%
2+-8	116	12.1%	2+-18	554	18.7%
2+-9	32	3.2%	2+-19	175	5.6%
2+-10	58	5.2%	<i>Combined</i>	<i>2,736</i>	<i>10.1%</i>

Table 3. Case Reporting Rates in 2022 for Level 2 Hospitals

Hospital	Cases	Rate	Hospital	Cases	Rate	Hospital	Cases	Rate
2-1	187	24.3%	2-17	36	3.4%	2-33	35	14.2%
2-2	89	6.6%	2-18	61	3.2%	2-34	18	2.6%
2-3	6	1.5%	2-19	137	16.6%	2-35	40	7.9%
2-4	51	23.5%	2-20	32	5.8%	2-36	55	8.5%
2-5	35	13.7%	2-21	147	18.9%	2-37	87	5.9%
2-6	252	18.4%	2-22	20	2.5%	2-38	162	17.1%
2-7	104	11.9%	2-23	17	2.7%	2-39	67	17.4%
2-8	65	5.9%	2-24	36	8.9%	2-40	0	0.0%
2-9	43	16.9%	2-25	119	11.8%	2-41	31	10.2%
2-10	72	26.6%	2-26	85	11.1%	2-42	22	9.9%
2-11	71	15.4%	2-27	0	0.0%	2-43	123	7.1%
2-12	35	5.7%	2-28	6	2.2%	2-44	306	24.0%
2-13	82	25.2%	2-29	3	0.4%	2-45	65	9.0%
2-14	33	14.8%	2-30	15	6.0%	2-46	128	21.4%
2-15	37	30.3%	2-31	70	12.8%	2-47	103	18.9%
2-16	94	17.3%	2-32	110	8.7%	<i>Combined</i>	3,392	10.7%

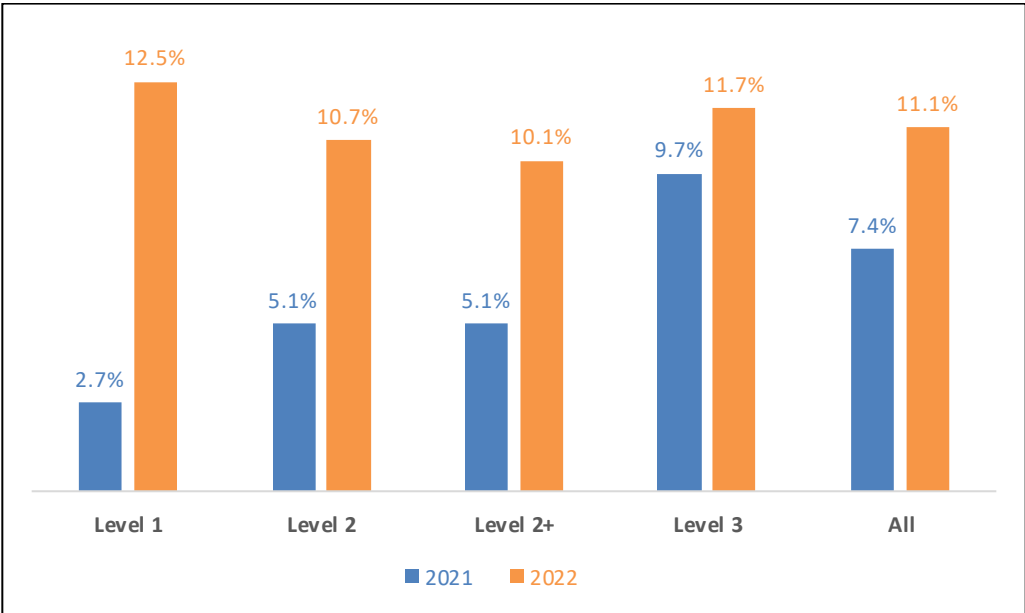
Table 4. Case Reporting Rates in 2022 for Level 1 Hospitals

Hospital	Cases	Rate	Hospital	Cases	Rate
1-1	8	4.9%	1-5	24	20.3%
1-2	26	10.1%	1-6	24	12.7%
1-3	0	0.0%	<i>Combined</i>	<i>117</i>	<i>12.5%</i>
1-4	35	28.2%			

DISCUSSION

The APORS case definition was modified on March 1, 2022, to include prenatal exposure to marijuana. As a result, APORS received more than 4,000 reports of marijuana exposure statewide in 2022. Largely due to this reporting, the overall number of cases reported to APORS increased by 46.2% in 2022 compared with 2021 (13,600 and 9,303 respectively). Combined reporting rates for all hospital levels increased with the most dramatic combined rate increases observed among Level 1, 2, and 2+ hospitals (see Table 5). While Level 3 hospitals continue to report the most cases among all hospital levels, the proportion of cases reported decreased to 54.1% in 2022 compared with 66.3% in 2021. The proportions reported by all other levels have increased.

Table 5. Case Reporting Rates by Hospital Level, Illinois, 2021 and 2022



APORS did examine rates in 2022 excluding marijuana exposure reports and found that the rates for all hospital levels were generally more comparable to those in 2021. The new reporting requirements have changed the dynamics of reporting.

As discussed in previous reports, variability persists in case reporting rates among hospitals providing the same level of care. These variations may be due to differences in populations served, transfer protocols between hospitals, and types of specialty care offered. Identification of drug exposure in babies may depend on the women who are selected for drug screening and testing during pregnancy or at delivery. It is also possible that not all cases are identified and reported to APORS, which may be more pronounced during times of staff turnover or shortages.

APORS strives to maximize case identification by providing training, education, and support to hospitals. Hospitals have a dedicated online SharePoint site where they can access manuals, training videos, webinar recordings, and other materials. APORS also provides prompt follow-up to hospital inquiries using a dedicated email address hospitals utilize to communicate with the APORS team. Finally, quality control reports are provided periodically to hospitals throughout the year to assist with an assessment of timely and complete reporting. APORS will maintain these supports and develop new approaches to assist with case identification so babies and families are provided the assistance needed after leaving the hospital.

Appendix 1
Conditions for APORS Hospital Nursery Reporting

Gestational age less than 31 completed weeks (based on physician's assessment)			
Multiple births, triplets, or higher-order			
Infant death (before discharge from the newborn stay) Expiration after showing signs of life, including breathing, heartbeat, pulsation of the umbilical cord, or definite movement of voluntary muscles. May have a zero APGAR score. A birth certificate should be issued.			
Prenatal drug exposure			
Diagnosis of a positive toxicology for any drug (except drugs administered during labor and delivery).			
Signs of drug toxicity or withdrawal (in the infant).			
Children of mothers who admit to illicit drug use during pregnancy (except marijuana).			
Birth defector congenital anomaly (except as listed below)			
Congenital pigment anomalies (stork bites, Mongolian spots, etc.)	Peripheral pulmonary stenosis (PPS)	Skin tag	
Dacryostenosis	Persistent fetal circulation	Syndactyly	
Incomplete or redundant penile foreskin	Polydactyly	Tongue tie	
Isolated choroid plexus cyst	Preauricular sinus	Two-vessel cord	
Isolated simian crease	Prenatal diagnosis of hydronephrosis, caliectasis, or pelviectasis	Umbilical hernia	
Patent ductus arteriosus (PDA)	Sacral dimple with visualized base or post-natal imaging ruling out problem	Undescended testes	
Patent foramen ovale (PFO)		Vascular hamartomas (small or insignificant birth marks, port wine stains, strawberry nevi, etc.)	
Serious congenital infections (Excludes: neonatal candidiasis (thrush), conjunctivitis, dacrocystitis, infective mastitis, and omphalitis)			
Chlamydia	Hepatitis B or C (disease or prenatal exposure)	Rubella	
Confirmed septicemia (sepsis)	Herpes	Syphilis (disease or exposure to active disease)	
Cytomegalovirus	Listeriosis	Tetanus neonatorum	
Gonococcal conjunctivitis neonatorum	Meningitis	HIV	
Group B streptococcus	Necrotizing enterocolitis leading to surgery		
Endocrine, metabolic, or immune disorders			
Combined immunity deficiency	Hypothyroidism		
Blood disorder			
Coagulation defects	Constitutional aplastic anemia	Hereditary hemolytic anemia	Leukemia
Other conditions			
Bronchopulmonary dysplasia	Endocardial fibroelastosis	IVH grade III or IV	
Cerebral lipidoses	Erb's palsy	Neurofibromatosis	
Chorioretinitis	Fetal alcohol syndrome	Occlusion of cerebral arteries	
Conditions leading to ECMO	HIE leading to cooling treatment	Retinopathy of prematurity	
Conditions leading to >72 hours on a ventilator	Intrauterine growth restriction leading to SGA	Strabismus	
		Seizures	