



Neonatal Abstinence Syndrome Advisory Committee

Final Report to the General Assembly

3/31/2019

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Executive Summary

This report provides the recommendations prepared by the Neonatal Abstinence Syndrome (NAS) Advisory Committee, based on the evidence-based guideline findings for statewide management of the maternal and neonatal population, in regard to opioid/substance use disorder (OUD/SUD) and NAS.

In 2015, the Neonatal Abstinence Syndrome (NAS) Advisory Committee (Committee) was created pursuant to Section 2310-677 of the Civil Administrative Code of Illinois (Department of Public Health Powers and Duties Law) (20 ILCS 2310). The Committee is comprised of up to 10 members appointed by the Director of the Illinois Department of Public Health (IDPH) with members representing different racial, ethnic, geographic, and disciplinary backgrounds. The Committee is charged with advising and assisting IDPH to:

1. Develop an appropriate standard clinical definition of NAS
2. Develop a uniform process of identifying NAS
3. Develop protocols for training hospital personnel in implementing an appropriate and uniform process for identifying and treating NAS
4. Identify and develop options for reporting NAS data to IDPH using existing or new data reporting options
5. Make recommendations to IDPH on evidence-based guidelines and programs to improve the outcomes of pregnancies with respect to NAS

The Committee is required to provide an annual report of its activities and recommendations to the Director, the General Assembly, and the Governor by March 31st of each year beginning in 2016. The final report of the Committee shall be submitted by March 31, 2019, and the Committee sunsets in June 2019.

The evidence draws attention to the extent of the problem of OUD and NAS in Illinois:

- Since 2011, the rate of NAS in Illinois has trended upward. According to hospital discharge data there was a 64% increase in the NAS incidence rate in Illinois from 2011 to 2017. In 2011, the statewide NAS rate was 1.77 per 1,000 deliveries; in 2017 the NAS rate was 2.90 per 1,000 deliveries.ⁱ
- Infants with NAS are more likely to have other adverse outcomes and complications at and after birth, including low birth weight, respiratory problems, jaundice, feeding difficulties, seizures, and sepsis. As a result, infants with NAS have longer hospital stays and higher hospital charges than infants without NAS. In Illinois during 2017, the median length hospital stay for infants without NAS was two days. In comparison, the median hospital length of stay for an infant with NAS was 13 days.ⁱ
- The increased length of stay for NAS infants directly translates to increased health care charges and costs. During 2017, the median charge for the newborn hospitalization of an infant with NAS was \$44,986, compared to the median charge of \$4,818 for an infant without NAS. This differential of more than \$40,000 per NAS infant translates to more than \$25 million in hospital charges that were specifically related to the care of NAS infants.ⁱ

Problem/solution summary

The American College of Obstetricians and Gynecologists (ACOG) and other organizations have addressed various aspects of the problem with recommendations for management:

- Early universal screening using a validated screening tool should be a part of a comprehensive obstetrical care plan.ⁱⁱ Universal screening helps eliminate the stigma and bias that may be associated with such screening.

- Utilization of the *Screening, Brief Intervention, and Referral to Treatment (SBIRT)* by the obstetric care providers early in the pregnancy can help identify pregnant women with Substance Use Disorders (SUD)/Opioid Use Disorders (OUD), and support appropriate referral for treatment. ^{ii, iii}
- Early referral and entry into a Medication Assisted Treatment (MAT) that offers opioid agonist pharmacotherapy for pregnant women is recommended and preferred over supervised withdrawal. ⁱⁱ
- Medical providers should be knowledgeable of the use of the Prescription Monitoring Program (PMP) database before prescribing controlled substances to identify any existing current or past prescriptions or if drug seeking behavior is suspected. ^{ii, iii, iv}
- Screen for comorbid behavioral health disorders and increase access to mental health and substance use services for women who are pregnant or are in the postpartum period. ^{iii, iv}
- The American Academy of Pediatrics (AAP) recommends that all nurseries adopt protocol guidelines to provide standardized and consistent management of newborns with NAS implementing nonpharmacological therapy as the initial management method. ^v

Since the inception of this Committee in 2016, the Committee met 18 times. Based on the review and analysis of the data and evidence, the Committee is making the following recommendations:

Charge 1: Develop an appropriate standard clinical definition of NAS.

The Committee defines NAS as: *Neonatal Abstinence Syndrome refers to the collection of signs and symptoms that occur when a newborn prenatally exposed to prescribed, diverted, or illicit opiates experiences opioid withdrawal. This syndrome is primarily characterized by irritability, tremors, feeding problems, vomiting, diarrhea, sweating, and in some cases, seizures.*

Charge 2: Develop a uniform process of identifying NAS.

The Committee agrees with the ACOG recommendations around universal substance use screening for all pregnant women throughout pregnancy using validated verbal tools ^{vi}:

Substance use screening using a validated verbal or written questionnaire for all pregnant women. At a minimum, this screening should occur at their first prenatal visit and when presenting for evaluation of labor or for delivery. Toxicology screening should always be considered if it would help guide clinical management.

It should be noted that at least one committee member expressed concern that many pregnant women with SUD/OUD may not be forthcoming upon verbal screen, even with a validated tool, and may not consent for toxicology screen for fear of criminalization and for fear of losing child custody, and therefore miss all opportunities for early detection and evidence-based interventions for OUD/SUD, leading to birth of a newborn with otherwise preventable NAS.

All infants with history, signs, or symptoms due to prenatal opioid exposure should be referred for early intervention evaluation and subsequent services as indicated. It is recognized that all infants affected by prenatal substance exposure require early intervention evaluation.

All newborn infants with history of or evidence suggesting prenatal exposure to opiates, or with behavioral symptomatology consistent with NAS as defined by this Committee, should be evaluated with a published, reliable tool that indicates the presence and quantifies the severity of NAS. This evaluation should be initiated within two hours of

delivery in the case of known opiate exposure, or any time behavioral symptomatology emerges, and repeated on an inpatient basis every 3-4 hours for at least five days before the infant is discharged. This can be done while the infant is rooming in with the mother during her hospital stay. It is recommended that (1) all physicians, advanced practice nurses (APNs), and nursing personnel are thoroughly trained on the assignment of an abstinence score using the chosen NAS tool, and (2) interrater reliability be measured within each hospital at least on an annual basis. If validated NAS scoring tools become available, they should be implemented.

Charge 3: Develop protocols for training hospital personnel in implementing an appropriate and uniform process for identifying and treating NAS.

The Committee developed, discussed, and agreed upon a decision tree to help standardize and guide newborn care providers in the identification of newborns at risk of NAS. The copy of the Decision Tree is included (see Appendix A).

The Committee agreed on the recommended protocols for training hospital personnel in implementing appropriate and uniform methods of management for the NAS newborn, which are found in the Illinois Perinatal Quality Collaborative (ILPQC) toolkit: *ILPQC Mothers and Newborns Affected by Opioids (MNO) – Neonatal Initiative*. The toolkit includes resources to:

- Improve pre-delivery planning
- Standardize identification, monitoring, and assessment of Substance Exposed Newborns (SEN)
- Provide family education
- Improve infant nutrition and breastfeeding
- Optimize non-pharmacologic care
- Standardize pharmacologic treatment
- Coordinate and communicate safe discharge

Charge 4: Identify and develop options for reporting NAS data to IDPH by using existing or new data reporting options.

The Committee reviewed findings from the state's NAS enhanced surveillance project, conducted by the Adverse Pregnancy Outcomes Reporting System (APORS), to inform recommendations around Charge 4. The project was funded by the Centers for Disease Control and Prevention (CDC) and March of Dimes and leverages the birth defects surveillance system to identify NAS cases and collect detailed information on these infants. The information collected allowed for an in-depth analysis of the characteristics of NAS infants, a comparison to the health outcomes of infants without NAS, and an assessment of health care expenditures related to NAS.

The Committee recommends that APORS be utilized for data reporting, with the development of a tool to facilitate decision making and flow for completing the APORS reporting of NAS and associated symptoms. The Committee reviewed and approved the tool (*APORS Data Reporting Workflow for Substance-Exposed Newborns for Hospital Teams* algorithm (Appendix B)) developed by IDPH and ILPQC for Illinois birthing and children's hospitals. The tool is to be used to facilitate accurate reporting of diagnoses, symptoms, and substance exposures of Neonatal Abstinence Syndrome (NAS); newborn withdrawal symptoms, including from therapeutic use of drugs in newborn; and substance exposure causing neurobehavioral abnormalities in the Adverse Pregnancy Outcomes Reporting System (APORS).

The Committee recommends that reporting take place within one week of discharge from the hospital. The Committee also recommends that reports be compiled and shared monthly with the Perinatal Network Administrators and Statewide Quality Council (SQC).

Charge 5: Make recommendations to IDPH on evidence-based guidelines and programs to improve the outcomes of pregnancies with respect to NAS.

The Committee agreed that improving the outcomes of pregnancies with respect to NAS requires a comprehensive approach, to include *Universal screening, brief intervention, referral, and treatment for substance use among pregnant women in the state of Illinois*. A comprehensive outline for Charge 5 was developed and is included in this report (Appendix C).

The Committee made the following broad recommendations to be used as a management framework and for potential legislative / regulatory policy:

Policy recommendations to improve care for mothers and newborns affected by opioids

- Universal screening for Substance Use Disorder (SUD) / Opioid Use Disorder (OUD) / alcohol use in pregnancy, using a validated self-report screening tool, as recommended by the American College of Obstetrics and Gynecology (ACOG) and the Illinois MMRC, October 2018 report recommendations.^{iv}
- Reimbursement for Universal screening with a validated self-report screening tool and Screening, Brief Intervention, and Referral to Treatment (SBIRT).
- Expand opportunities to offer Buprenorphine waiver training via ACOG / ASAM to increase the number of women's health care providers offering medication for SUD for women with OUD during pregnancy and postpartum.
- Extend public and private insurance coverage during the postpartum period beyond the typical six weeks to one year to provide medical care and follow-up during a time period when many SUD/OUD associated maternal deaths occur. Expand care in the postpartum period to promote universal early postpartum visits within the first two weeks postpartum. Also provides ongoing coverage for Medication Assisted Therapy (MAT) in the postpartum period.
- Health insurance plans, both private and public, should separate payments in the postpartum period, to unbundle the postpartum visit services from labor and delivery.^{iv} Reimbursement to include hospitalization for standard observation times of at least 4 to 7 days after birth per American Academy of Pediatrics (AAP) guidelines for opioid exposed newborns.
- Expand Early Intervention (EI) services for opioid exposed infants to include referrals for all opioid exposed newborns after delivery and provide ongoing developmental assessments at six-month intervals until three years of age.
- Establish a safeguard for children of mothers engaged in MAT program during pregnancy. This includes intensive family services, defined as intact family services, Early Intervention (EI), Home Nursing, and continued Medication Assisted Therapy (MAT).
- Develop an infrastructure of community health nurses and/or social workers who can consistently follow families for at least two years after delivery, given the high rate of maternal relapse in the first two years after achieving sobriety.

Introduction

Neonatal Abstinence Syndrome

Neonatal Abstinence Syndrome (NAS) was first described in the 1970s, identified among neonates whose mothers most commonly used heroin or were on methadone maintenance. NAS refers to the collection of signs and symptoms that occur when a newborn prenatally exposed to opiates experiences opioid withdrawal. The syndrome is primarily characterized by irritability, tremors, feeding problems, vomiting, diarrhea, sweating and, in some cases, seizures.^{vii}

According to Dr. Ira Chasnoff, in his editorial for the *Journal of Perinatology*, the incidence of NAS has varied over the past several decades, usually correlated with the ebbs and flows of heroin use in the general populations. Chasnoff further notes that the current increase in NAS is associated with a wide spectrum of pregnant women's use of opiates, including heroin addiction, polydrug use, prescribed and illegal prescription opioid use, and methadone or buprenorphine assisted treatment (MAT).^{vii}

National surveillance studies have demonstrated that the incidence of NAS increased from 1.2 per 1,000 hospital births in 2009 to 5.8 per 1,000 births in 2012 – a 70% increase in only three years.^{xiii, ix} Since 2000, there has been a five-fold increase in NAS.^{ix} In 2012, the NAS rate for Midwest states (including Illinois) was 6.9 per 1,000 hospital births. Only the New England and East South Central regions had higher NAS rates than the Midwest region.^{ix} Compared to infants without NAS, infants with NAS were more likely to be male, to reside in low-income zip codes, and to be covered by Medicaid.^x In 2012, Medicaid was the primary payer for hospital charges for 80% of all NAS infants.^{ix}

Opioid Use Disorder: Overall Population

In 2016, about 0.4% of the U.S. population aged 12 and older used heroin during the last year, and 0.2% within the last month. These rates are similar to what was seen in 2014-2015, but higher than prior years. Heroin use remains highest among 18-25-year-olds, with 0.7% of the population using heroin during the last year in 2016. Heroin use has increased the most among this age group.^{xi, xii}

In 2016, approximately 4.3% of the U.S. population aged 12 and older misused prescription opioid pain relievers during the previous year, and misuse was highest among adults 18-25 years old (7.1%). The most common types of prescription opioids that were misused were hydrocodone and oxycodone. The most commonly cited reasons for prescription opioid misuse were: to relieve physical pain (62.3%), to feel good or get high (12.9%), and to relax or relieve tension (10.8%). Among those who misused prescription opioids, the most common sources for obtaining the opioids were family or friends (53.0%) or a prescription from a single physician (35.4%).

It is estimated that approximately 20% of patients presenting to physician offices for pain symptoms or pain-related diagnoses receive an opioid prescription. In 2012, health care providers in the U.S. wrote 259 million prescriptions for opioid pain medication, and per capita opioid prescriptions increased 7.3% from 2007 to 2012.^{xiii} One study used pharmacy data to highlight the widespread state-by-state variation in the prescribing of opioid medications.

Illinois had one of the lowest per capita opioid prescribing rates in the U.S., ranking 43rd out of the 50 states and District of Columbia, at 67.9 prescriptions per 100 persons (the national rate was 82.5 prescriptions per 100 persons). Additionally, Illinois had the second lowest prescribing rate for long-acting/extended-release opioids and for high-dose opioid pain relievers.^{xiv}

In March 2016, the CDC issued new guidelines related to prescribing of opioids for primary care providers who treat patients with chronic pain in outpatient settings. These guidelines provide recommendations based on the review of evidence for three topics: (1) determining when to initiate or continue opioids for chronic pain;(2) opioid selection, dosage, duration, follow-up, and discontinuation; and (3) assessing risk and harms of opioid use.^{xv}

In Illinois in 2013, there were approximately 11,900 persons enrolled in opioid treatment programs receiving methadone and 1,200 persons receiving buprenorphine. The number of persons receiving methadone in treatment programs has remained fairly consistent since 2009, but the number of persons receiving buprenorphine more than doubled between 2009 and 2012.^{xvi}

Purpose of this Report

The purpose of this annual report is to provide a statutorily mandated update to the IDPH Director, General Assembly, and Governor regarding the Committee’s activities and recommendations. (See 20 ILCS 2310/2310-677).

Members and the roles they fill on the committee include:

1. David Soglin, MD, La Rabida Hospital – representing a statewide association of hospitals
2. Open, Representative of a statewide organization of pediatricians
3. Open, Representative of a statewide organization of obstetricians
4. Shelly Bateman, Senior Director State Government Affairs, March of Dimes, Illinois – representing a statewide organization that advocates for the health of mothers and infants
5. Leslie Caldarelli, MD, Northwestern Medicine – representing a statewide organization of licensed physicians
6. Jodi Hoskins, DNP, MSN-Ed, RNC, Mercyhealth Javon Bea Hospital – a nurse (LPN, RPN, or APN) with expertise in the treatment of newborns in NICU
7. Open, Representative of a local or regional public health agency
8. Ira Chasnoff, MD, Children's Research Triangle – a member with expertise in the treatment of drug dependency and addiction

The following persons or their designees serve as ex officio members of the Committee:

1. IDPH Director, Nirav Shah, MD, JD (Designee: Andrea Palmer)
2. Illinois Department of Human Services Secretary, James T. Dimas (Designee: Open)
3. Illinois Department of Healthcare and Family Services Director, Felicia Norwood (Designee: Arvind K. Goyal, MD, MPH, MBA, Medical Director)
4. Illinois Department of Children and Family Services Director, Beverly Walker (Designee: Paula Jaudes, MD)

Non-voting members who regularly contribute their expertise to the Committee:

Ellen Mason, MD, Obstetrician

Ginger Darling, MD, Neonatologist

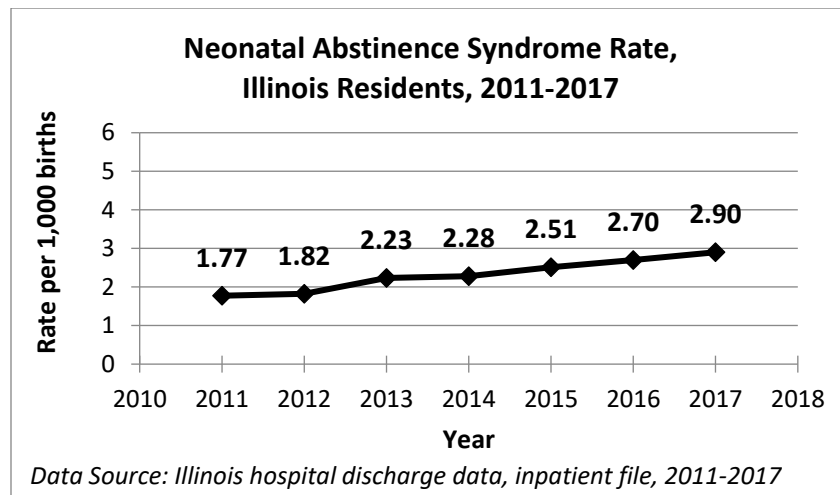
David Ouyang, MD, Maternal Fetal Medicine Mary Pulchalski, DNP, APN

Omar LaBlanc, MSW Elaine Shafer, RN Christine Emmons, RN

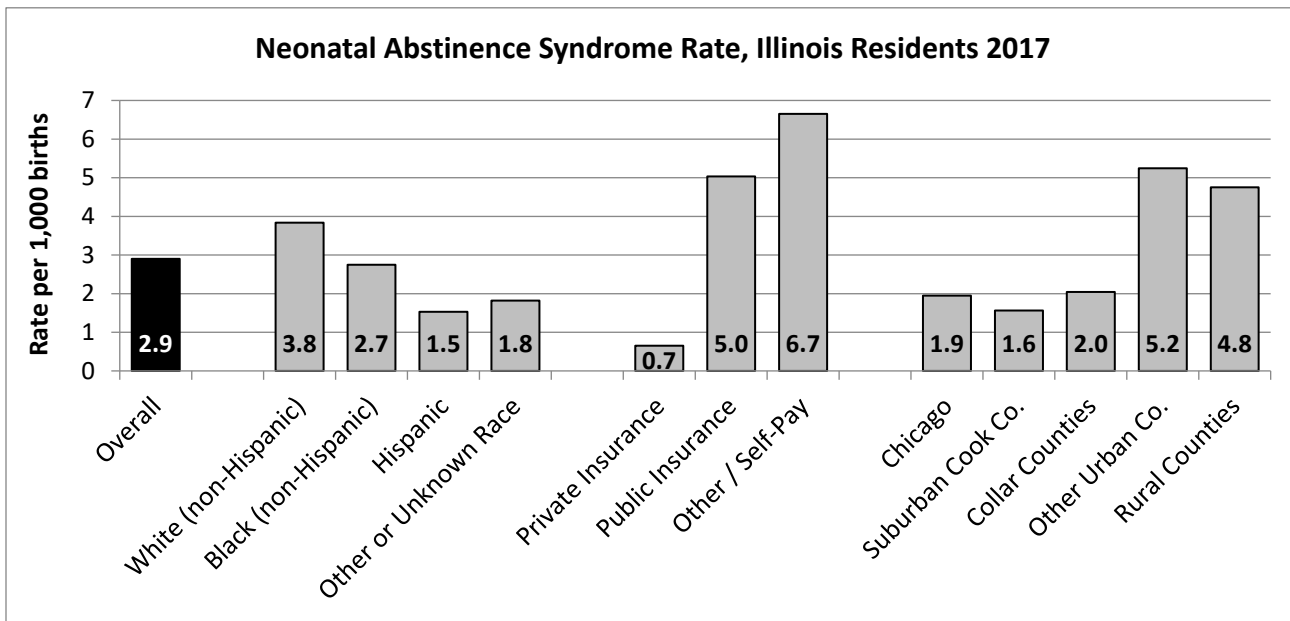
Emily Miller, MD, Obstetrician

NAS in Illinois

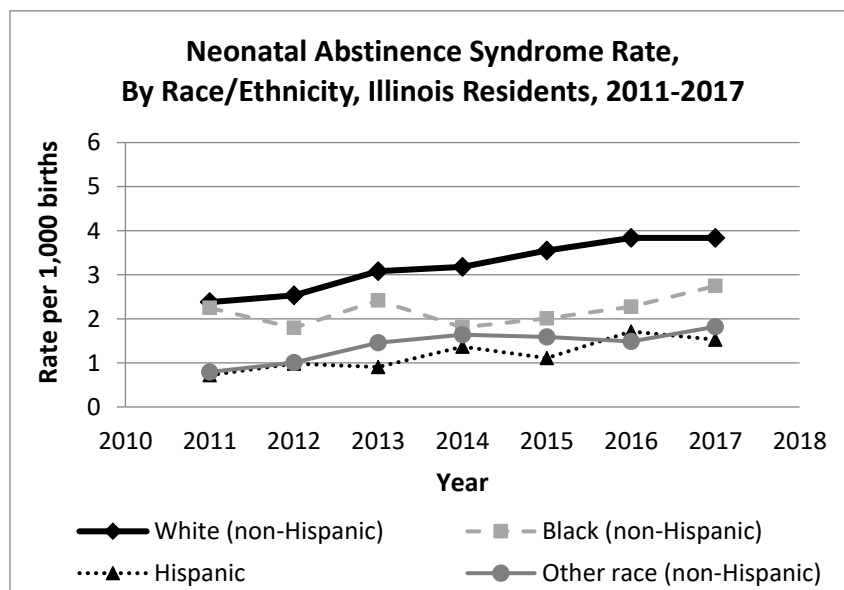
One way that NAS is monitored in Illinois is through hospital discharge data, which includes all records for any patients discharged from Illinois hospitals. Since 2011, the rate of NAS in Illinois has trended upward, according to the hospital discharge data. From 2011 to 2017, there was a 64% increase in the NAS incidence rate in Illinois. In 2011, the statewide NAS rate was 1.77, per 1,000 deliveries. In 2017, the NAS rate was 2.90 per 1,000 deliveries.ⁱ



The rates of NAS incidence also vary by race/ethnicity, geographical area, and insurance type. During 2017, non-Hispanic white infants had a higher rate of NAS than non-Hispanic black, Hispanic, or other race infants. Additionally, infants on private insurance had a much lower incidence of NAS than infants on public insurance (i.e., Medicaid) or who had some other payment arrangement. In terms of geography, the NAS incidence rate was highest in urban counties outside the Chicago area and in rural counties; these areas had NAS rates 2-3 times higher than the rates in Chicago, suburban Cook County, or the collar counties.ⁱ

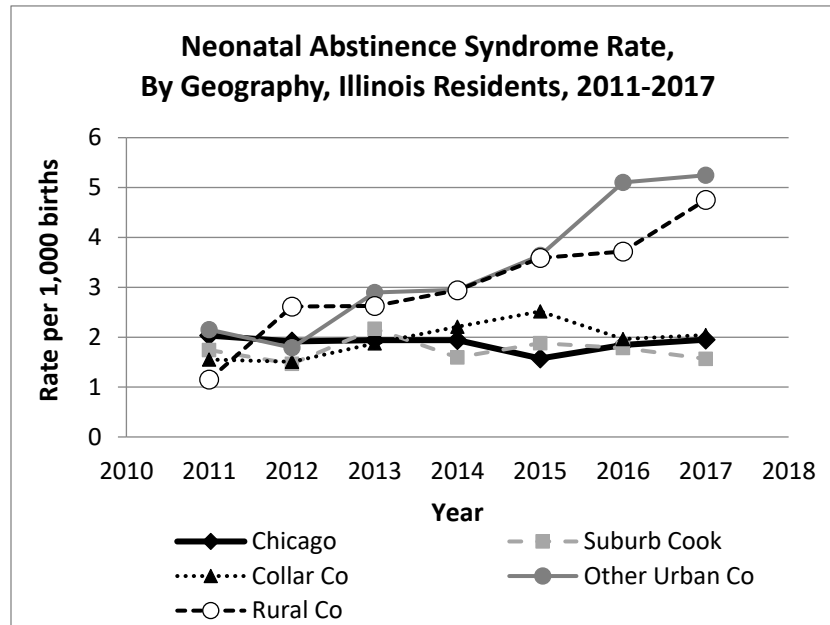


The relative trends in NAS incidence are not consistent across these demographic groups. The NAS rate increased 61% for non-Hispanic white infants between 2011 and 2017, compared to a 22% increase for non-Hispanic black infants. So while white and black infants had similar NAS rates in 2011, white infants had a higher rate than black infants in every subsequent year. Hispanic and Other race (not white or black) infants experienced more than a doubling in NAS rates between 2011 and 2017, but because these groups had low NAS incidence to begin with, their rates remain lower than those for white and black women.ⁱ



The trends in NAS incidence also vary by geography. While the state saw a 64% increase overall between 2011 and 2017, the relative increase was higher in urban counties outside the Chicago area (144% increase) and in rural counties (313%). In contrast, the NAS incidence rate increased by only 32% for residents of the collar counties, while NAS rates remained

essentially unchanged for Chicago and suburban Cook County residents over the same time period (respective decreases of 4% and 10%).ⁱ



Given that the NAS incidence rate varies across the state of Illinois, local-level rates are of interest. The NAS rates for 2011-2017 combined are shown in the table below for each Illinois county. The seven years of data are combined to provide more stable rate estimates, even when the absolute number of cases is low. In conjunction with reporting standards for the hospital discharge data, county-level rates when there were fewer than 10 NAS cases over the seven-year period are considered unreliable and are not shown in the table below. Only 33 of the 102 Illinois counties had at least 10 cases of NAS over the seven-year period. It should be noted that Illinois hospital discharge data only includes information on infants who were hospitalized within Illinois hospitals. Therefore, county-level NAS rates are likely underestimated for border counties that see larger proportions of residents delivering their infants at out-of-state hospitals.ⁱ

Of the 33 counties for which the NAS rate could be reliably estimated, the counties with the highest NAS rates were Logan County (7.76 per 1,000), Winnebago County (7.55 per 1,000), Iroquois County (6.71 per 1,000), Franklin County (5.87 per 1,000), and Ogle County (5.50 per 1,000). For comparison, Illinois' total NAS rate for the 7-year period combined was 2.29 cases per 1,000 live births. There were 10 counties that had NAS rates lower than the state's overall rate (Cook, DeKalb, DuPage, Kane, Kankakee, Kendall, Lake, McHenry, McLean, and Rock Island counties).ⁱ

Table 1. Number of infant births, number of neonatal abstinence syndrome (NAS) cases, and NAS rates, by Illinois county of residence, 2011-2017 combined

	Births	NAS Cases	NAS Rate
Adams County	5,373	22	4.09
Alexander County	365	0	.
Bond County	996	5	.
Boone County	3,922	15	3.82

	Births	NAS Cases	NAS Rate
Brown County	376	1	.
Bureau County	2,324	12	5.16
Calhoun County	237	0	.
Carroll County	615	4	.

	Births	NAS Cases	NAS Rate
Cass County	1,226	3	.
Champaign County	15,760	43	2.73
Christian County	2,554	4	.
Clark County	382	2	.
Clay County	1,011	1	.
Clinton County	2,420	2	.
Coles County	3,230	3	.
Cook County	452,265	825	1.82
Crawford County	978	9	.
Cumberland County	672	1	.
DeKalb County	8,409	11	1.31
DeWitt County	1,177	4	.
Douglas County	1,946	4	.
DuPage County	75,997	119	1.57
Edgar County	540	1	.
Edwards County	165	0	.
Effingham County	3,189	5	1.57
Fayette County	1,534	3	.
Ford County	910	3	.
Franklin County	3,064	18	5.87
Fulton County	2,441	12	4.92
Gallatin County	230	3	.
Greene County	926	5	.
Grundy County	4,208	16	3.80
Hamilton County	529	0	.
Hancock County	1,049	3	.
Hardin County	182	0	.
Henderson County	258	0	.
Henry County	3,350	3	.
Iroquois County	2,085	14	6.71
Jackson County	4,399	17	3.86
Jasper County	686	2	.
Jefferson County	3,075	5	.
Jersey County	1,096	3	.
Jo Daviess County	245	2	.
Johnson County	579	1	.
Kane County	44,732	72	1.61
Kankakee County	8,792	20	2.27
Kendall County	10,026	14	1.40
Knox County	3,872	11	2.84
Lake County	54,714	104	1.90

	Births	NAS Cases	NAS Rate
LaSalle County	8,040	34	4.23
Lawrence County	456	1	.
Lee County	2,328	3	.
Livingston County	2,640	9	.
Logan County	2,190	17	7.76
Macon County	8,933	46	5.15
Macoupin County	2,951	3	.
Madison County	16,006	58	3.62
Marion County	3,459	6	.
Marshall County	945	0	.
Mason County	1,020	4	.
Massac County	370	0	.
McDonough County	1,861	4	.
McHenry County	22,522	51	2.26
McLean County	14,338	12	0.84
Menard County	823	1	.
Mercer County	919	1	.
Monroe County	394	0	.
Montgomery County	2,035	4	.
Morgan County	2,563	6	.
Moultrie County	1,027	2	.
Ogle County	3,456	19	5.50
Peoria County	18,155	48	2.64
Perry County	1,290	5	.
Piatt County	1,105	5	.
Pike County	1,080	0	.
Pope County	119	0	.
Pulaski County	285	1	.
Putnam County	359	1	.
Randolph County	1,812	9	.
Richland County	1,021	0	.
Rock Island County	10,061	15	1.49
Saline County	1,867	1	.
Sangamon County	15,680	66	4.21
Schuyler County	398	1	.
Scott County	310	0	.
Shelby County	1,391	4	.
St. Clair County	17,418	41	2.35
Stark County	443	0	.
Stephenson County	2,386	7	.
Tazewell County	10,876	44	4.05

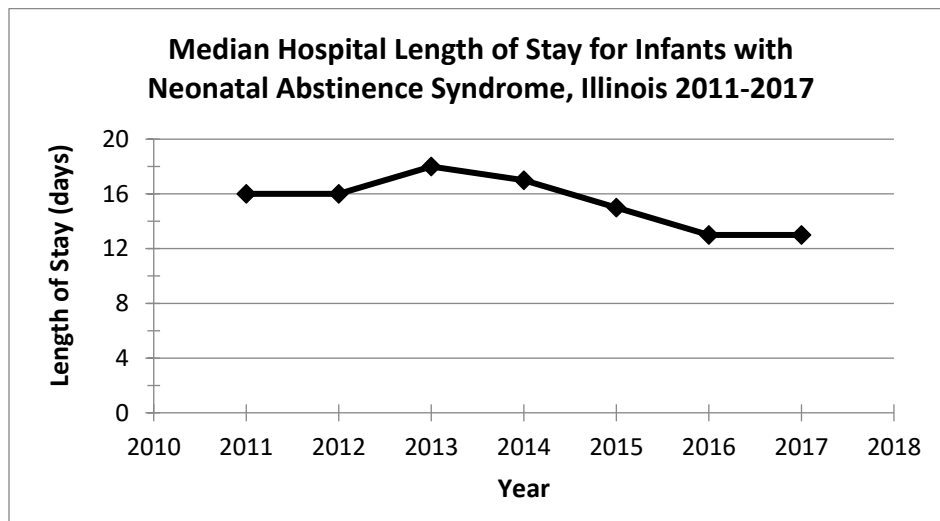
	Births	NAS Cases	NAS Rate
Union County	995	9	.
Vermilion County	6,427	20	3.11
Wabash County	53	0	.
Warren County	1,300	5	.
Washington County	925	1	.
Wayne County	984	0	.

	Births	NAS Cases	NAS Rate
White County	471	0	.
Whiteside County	3,750	7	.
Will County	52,854	143	2.71
Williamson County	4,816	16	3.32
Winnebago County	24,245	183	7.55
Woodford County	2,669	6	.

Infants with NAS are more likely to have other adverse outcomes and complications at birth, including low birth weight, respiratory problems, jaundice, feeding difficulties, seizures, and sepsis. As a result, infants with NAS have longer hospital stays and higher hospital charges than infants without NAS. In Illinois during 2017, the median length hospital stay for infants without NAS was two days. In comparison, the median hospital length of stay for an infant with NAS was 13 days. On a promising note, the median length of stay for Illinois infants with NAS decreased from a high of 18 days during 2013 to 13 days during 2016 and 2017.ⁱ

Cost of NAS

The increased length of stay for NAS infants directly translates to increased health care charges and costs. During 2017, the median charge for the newborn hospitalization of an infant with NAS was \$44,986, compared to the median charge of \$4,818 for an infant without NAS. This differential of more than \$40,000 per NAS infant translates to more than \$25 million in hospital charges that were specifically related to the care of NAS infants.ⁱ



The burden on neonatal intensive care units (NICUs) due to NAS has increased over time. In one study of hospital NICUs throughout the United States, the percentage of total NICU days attributed to infants with NAS increased from 0.6% in 2004 to 4.0% in 2013 – a five-fold increase. They also demonstrated that length of stay for NAS infants significantly increased by about six days between 2004 and 2013.^{xvii}

Implications of NAS

It is difficult to discern the long-term implications of NAS on development due to difficulties isolating the effects of opioids, other substances (e.g., tobacco, alcohol), and other environmental factors.^{xiv} There is some evidence that opioid-exposed infants experience reduced fetal growth, but this could be due to polysubstance use and other environmental factors.^{xviii} Additionally, there is no evidence that opiate exposure has a long-term effect on growth.^{xix} There is some evidence that opiate exposure increases hyperactivity, short attention spans, and memory and perceptual problems in toddlers and older children.^{xix}

According to the New England Journal of Medicine, there is strong evidence that breastfed infants with neonatal abstinence syndrome tend to have less severe symptoms, require less pharmacologic treatment, and have shorter stays in the hospital than formula-fed infants. There is also emerging evidence that infants who stay in the room with their mothers, known as rooming-in, have shorter hospital stays, duration of therapy, and are more likely to be discharged home with their mothers. Despite the benefits of breastfeeding and rooming-in, the New England Journal of Medicine indicates that there are barriers to implementation of these recommendations. With respect to breast feeding, health care providers, unaware of the benefits, do not encourage mothers receiving opioid-replacement treatment to breast feed; these mothers may have difficulty with infant feeding and often, their babies are separated from them and admitted to special-care nurseries. The New England Journal of Medicine goes on to state, “institutional limitations, such as lack of funding, lack of personnel, and poor design of hospital units and reluctance to introduce practices based on new evidence may prevent hospitals from providing rooming-in as a standard practice.”^{xx}

Availability of Substance Use Treatment during Pregnancy

Nationally, there is a dearth of services for women seeking substance use treatment during pregnancy. In 2012, only 2.2% of physicians nationally had received a waiver to prescribe buprenorphine. Of those physicians who did receive this waiver, 25% had not treated any patients since receiving the waiver.^{xxi}

Less than 50% of eligible pregnant women receive MAT during pregnancy nationally. Only 33.2% of eligible women receive MAT during pregnancy in states that permit child abuse charges for illicit drug use during pregnancy, as opposed to 51.33% of eligible women in states without these laws.^{xxii}

In Illinois, there are 86 drug treatment resources offering services for women who are pregnant and insured by Medicaid across the state, and 64 of these resources offer MAT. The following counties have at least one MAT resource available to pregnant women: Bond, Boone, Champaign, Cook, Jackson, Jo Daviess, Kane, Kankakee, Lake, Macon, Macoupin, Madison, McHenry, McLean, Peoria, Rock Island, Saline, Sangamon, St. Clair, Tazewell, Union, Will, Williamson, and Winnebago. Adams, Carroll, Coles, Effingham, Grundy, Iroquois, Jasper, Lee Livingston, Ogle, Perry, Wabash, and Whiteside counties have substance abuse treatment services for pregnant women, but do not currently offer MAT.

There are a number of innovative models and collaborations to provide pregnant women with substance use treatment across Illinois. The Healthy Southern Illinois Delta Network, comprised of local health departments from Alexander, Franklin, Gallatin, Hardin, Jackson, Johnson, Massac, Perry, Pope, Pulaski, Randolph, Saline, Union, White, and Williamson counties are working together to provide substance use treatment to pregnant women. There are also two integrated prenatal and substance abuse treatment pilot programs serving women in the state. One is located at PCC Wellness, a federally qualified health center (FQHC) system serving Cook County, and another is located at the WISH Center in St. Louis, Missouri.

IDPH has solicited feedback from providers about the provision of substance use services to pregnant women. The feedback received indicates that, across providers, knowledge of, and comfort with, prescribing MAT to pregnant women

is inconsistent.

Forging Solutions: Evidence-Based Recommendations to Reduce NAS in Illinois

The Committee has been charged with advising and assisting IDPH to:

1. Develop an appropriate standard clinical definition of NAS;
2. Develop a uniform process of identifying NAS;
3. Develop protocols for training hospital personnel in implementing an appropriate and uniform process for identifying and treating NAS;
4. Identify and develop options for reporting NAS data to IDPH by using existing or new data reporting options; and
5. Make recommendations to IDPH on evidence-based guidelines and programs to improve the outcomes of pregnancies with respect to NAS.

Since its inception, the Committee grounded all recommendations around these five charges in evidence-based research aiming to reduce NAS in Illinois. The following research has been foundational in the Committee's recommendations.

When developing an appropriate standard clinical definition of NAS, the Committee relied on internal expertise, as well as the definition of NAS from the American Academy of Pediatrics (AAP), which is the leading professional pediatric association, and the March of Dimes (MOD). The AAP defined NAS as "a result of the sudden discontinuation of fetal exposure to substances that were used or abused by the mother during pregnancy."^{xxiii} MOD expands on this definition by highlighting that opiate use is the most common cause of NAS.^{xxvii} The Committee used this research as the foundation for its definition, but also chose to include the characteristics of NAS in the clinical definition, as the presence of these symptoms is paramount to making an accurate diagnosis.

The Committee consulted research that demonstrates infant outcomes improve when pediatricians and OBGYNs are aware of maternal substance use during pregnancy.^{xxiv, xxv} ACOG specifically recommends universal substance use screening for all pregnant women throughout pregnancy using validated verbal tools.^{xxii} This is important because drug screening during pregnancy helps identify substance use disorders, which enables early access to treatment. Early access to treatment potentially decreases the co-morbidities of preterm delivery and small-for-gestational-age and low -birth-weight newborns. Early access to treatment also alerts the newborn provider that the infant is at risk for NAS, which helps to prevent delayed treatment due to a missed NAS diagnosis.

Additionally, the American College of Obstetrics and Gynecologists (ACOG) supports the use of toxicological screening if a woman gives her informed consent.^{xxii} This research informed all recommendations around the need for universal screening throughout pregnancy and at delivery for all women. The Committee's recommendation around early intervention for children with prenatal opioid exposure is based on evidence that the early intervention program improves academic achievement, behavior, and overall development.

Research also indicates a need to approach treating NAS from a new framework. Historically, NAS has been diagnosed using the Finnegan Neonatal Abstinence Scoring System (FNASS). This tool has been largely unchallenged since its inception, despite never being validated, and is used by multiple hospital systems as the primary tool for diagnosing NAS. However, multiple scoring categories on the FNASS may be related to discomfort or fatigue, as opposed to being signs of withdrawal. Thus, there is burgeoning evidence that the FNASS should not be used in isolation as the primary diagnostic tool for NAS.

Study findings and recommendations based on expert opinions show that NAS is best managed with consistent, standardized care. The American Academy of Pediatrics (AAP) recommends that all nurseries adopt protocol guidelines

asserting that consistent nonpharmacological therapy measures are the initial management method for NAS.^v The aim is to reduce the severity of symptoms associated with NAS, and to possibly avoid the use of pharmacological therapy. A 2012 study published in the *British Journal of Midwifery* set out to determine: (a) the impact that implementation of clinical practice guidelines has on NAS outcomes pertaining to identifying the symptoms more rapidly, (b) how this may decrease the severity of the clinical manifestations and, (c) if this will decrease the hospital length of stay.^{xxviii} The study results showed that the development and presence of clinical practice guidelines do have a positive impact on NAS management and outcomes.^{xxviii} It was confirmed that when used consistently, protocol guidelines demonstrated a decreased hospital length of stay and improved the consistency of the nursing interventions for the newborn. Therefore, the Committee determined that the use of a decision tree tool would facilitate an early and standardized method of identifying newborns at risk of NAS, so that early non-pharmacological therapy may be initiated as necessary.

The focus of nonpharmacological therapy is to relieve the newborn's withdrawal symptoms at the onset, as it is critical for the effective management of NAS and is the recommended first line of management by the AAP. New research suggests that infants with NAS improve when treated with their mothers in low-stimulation environments and are held, rocked, and comforted, similar to infants without NAS. This new research refutes the notion that pharmacologic interventions are the most beneficial to infants with NAS. Nonpharmacological therapy interventions also include family involvement, such as rooming-in and breastfeeding, in the care of the NAS newborn. Breastfeeding is not contraindicated for mothers with a substance use disorder if they are engaged in a supervised Medication Assistance Treatment (MAT) program and do not have a positive Human Immunodeficiency Virus (HIV) screening.^{xxix} The Committee's recommendations around how to diagnose and treat NAS are grounded in this evidence, and justifies the collaboration with the Illinois Perinatal Quality Collaborative (ILPQC) in the use of the *ILPQC Mothers and Newborns Affected by Opioids (MNO)-Neonatal Initiative* toolkit resources.

The collection of data plays an important role in outcomes and identifying if and where barriers to achieving positive outcomes may exist. The Committee agreed that the purpose for collecting data regarding newborns with NAS included:

- Ensuring appropriate follow-up services
- Prioritizing resources throughout the state of Illinois
- Following population trends

A review of existing data collection methods in Illinois led the Committee to consider the Adverse Pregnancy Outcome Reporting System (APORS) program. IDPH reports the purpose of APORS is to “conduct surveillance on birth defects, to guide public health policy in the reduction of adverse pregnancy outcomes, and to identify and refer children who require special services to correct and prevent developmental problems and other disabling conditions.”^{xxx} This aligns with the Committee's established purpose for data collection. A benefit of APORS is that it is already utilized for reporting by the birthing hospitals in Illinois. However, the Committee agreed that hospitals will need to use the same terms or definitions regarding NAS, and that education/training would be necessary to facilitate same language use. The APORS staff developed the tool, *APORS Data Reporting Workflow for Substance-Exposed Newborns for Hospital Teams* algorithm to provide same language guidelines for hospitals when reporting newborns with substance-exposure (see Appendix B).

Consideration of the best methods to improve the outcomes of pregnancies with respect to NAS required a broad overview of the antepartum, intrapartum, and postpartum timeframes of pregnancy. The Committee collaborated with ILPQC to develop an outline to address the multifaceted considerations of Charge 5.

Recommendations

Since the inception of this Committee in 2016, the Committee met 18 times. Based on the review and analysis of the data and evidence, the Committee is making the following recommendations:

Charge 1: Develop an appropriate standard clinical definition of NAS.

The Committee defines NAS as: *Neonatal Abstinence Syndrome refers to the collection of signs and symptoms that occur when a newborn prenatally exposed to prescribed, diverted, or illicit opiates experiences opioid withdrawal. This syndrome is primarily characterized by irritability, tremors, feeding problems, vomiting, diarrhea, sweating, and, in some cases, seizures.*

Charge 2: Develop a uniform process of identifying NAS.

The Committee agrees with the ACOG recommendations around universal substance use screening for all pregnant women throughout pregnancy using validated verbal tools^{vi}:

Substance use screening using a validated verbal or written questionnaire for all pregnant women. At a minimum, this screening should occur at their first prenatal visit and when presenting for evaluation of labor or for delivery. Toxicology screening should always be considered if it would help guide clinical management.

It should be noted that at least one committee member expressed concern that many pregnant women with SUD/ODU may not be forthcoming upon verbal screen, even with a validated tool, and may not consent for toxicology screen, for fear of criminalization and for fear of losing child custody, and therefore miss all opportunities for early detection and evidence-based interventions for OUD/SUD, leading to birth of a newborn with otherwise preventable NAS.

All infants with history, signs, or symptoms due to prenatal opioid exposure should be referred for early intervention evaluation and subsequent services as indicated. It is recognized that all infants affected by prenatal substance exposure require early intervention evaluation.

All newborn infants with history of or evidence suggesting prenatal exposure to opiates, or with behavioral symptomatology consistent with NAS as defined by this Committee, should be evaluated with a published, reliable tool that indicates the presence, and quantifies the severity, of NAS. This evaluation should be initiated within two hours of delivery in the case of known opiate exposure, or any time behavioral symptomatology emerges, and repeated on an inpatient basis every 3-4 hours for at least five days before the infant is discharged. This can be done while the infant is rooming in with the mother during her hospital course of stay. It is recommended that (1) all physicians, APNs, and nursing personnel are thoroughly trained on the assignment of an abstinence score using the chosen NAS tool, and (2) interrater reliability be measured within each hospital at least on an annual basis. If validated NAS scoring tools become available, they should be implemented.

Charge 3: Develop protocols for training hospital personnel in implementing an appropriate and uniform process for identifying and treating NAS.

The Committee developed, discussed, and agreed upon a decision tree to help standardize and guide newborn care providers in the identification of newborns at risk of NAS, the copy of the Decision Tree is included (see Appendix A).

The Committee agreed on the recommended protocols for training hospital personnel in implementing appropriate and uniform methods of management for the NAS newborn, which are found in the Illinois Perinatal Quality Collaborative (ILPQC) toolkit: *ILPQC Mothers and Newborns Affected by Opioids (MNO) – Neonatal Initiative*. The toolkit includes resources to:

- Improve pre-delivery planning
- Standardize identification, monitoring, and assessment of Substance Exposed Newborns (SEN)
- Provide Family Education

- Improve infant nutrition and breastfeeding
- Optimize non-pharmacologic care
- Standardize pharmacologic treatment
- Coordinate and communicate safe discharge

Charge 4: Identify and develop options for reporting NAS data to IDPH by using existing or new data reporting options.

The Committee reviewed findings from the state’s NAS enhanced surveillance project, conducted by the Adverse Pregnancy Outcomes Reporting System (APORS) to inform recommendations around Charge 4. The project was funded by the CDC and March of Dimes and leverages the birth defects surveillance system to identify NAS cases and collect detailed information on these infants. The information collected allowed for an in-depth analysis of the characteristics of NAS infants, a comparison to the health outcomes of infants without NAS, and an assessment of health care expenditures related to NAS.

The Committee recommends that APORS be utilized for data reporting, with the development of a tool to facilitate decision making and flow for completing the APORS reporting of NAS and associated symptoms. The Committee reviewed and approved the tool (The *APORS Data Reporting Workflow for Substance-Exposed Newborns for Hospital Teams* algorithm (Appendix B)) developed by IDPH and ILPQC for Illinois birthing and children’s hospitals to facilitate accurate reporting of diagnoses, symptoms, and substance exposures of Neonatal Abstinence Syndrome (NAS); newborn withdrawal symptoms, including from therapeutic use of drugs in newborn; and substance exposure causing neurobehavioral abnormalities in the Adverse Pregnancy Outcomes Reporting System (APORS).

The Committee recommends that reporting take place within one week of discharge from the hospital. The Committee also recommends that reports be compiled and shared monthly with the Perinatal Network Administrators and Statewide Quality Council (SQC).

Charge 5: Make recommendations to IDPH on evidence-based guidelines and programs to improve the outcomes of pregnancies with respect to NAS.

The Committee agreed that improving the outcomes of pregnancies with respect to NAS requires a comprehensive approach to include *Universal screening, brief intervention, referral, and treatment for substance use among pregnant women in the state of Illinois*. A comprehensive outline for Charge 5 was developed and is included in this report (Appendix C).

The Committee made the following broad recommendations to be used as a management framework and for potential legislative / regulatory policy:

Policy recommendations to improve care for mothers and newborns affected by opioids

- Universal screening for Substance Use Disorder (SUD) / Opioid Use Disorder (OUD) / alcohol use in pregnancy, with a validated self-report screening tool, as recommended by the American College of Obstetrics and Gynecology (ACOG) and the Illinois MMRC, October 2018 report recommendations.^{iv}
- Reimbursement for Universal screening with a validated self-report screening tool and Screening, Brief Intervention, and Referral to Treatment (SBIRT).
- Expand opportunities to offer Buprenorphine wavier training via ACOG / ASAM to increase the number of women’s health care providers offering medication for SUD for women with OUD during pregnancy and postpartum.
- Extend public and private insurance coverage during the postpartum period beyond the typical six weeks to one

year to provide medical care and follow-up during a time period when many SUD/ODU associated maternal deaths occur. Expand care in the postpartum period to promote universal early postpartum visits within the first two weeks postpartum. Also provides ongoing coverage for Medication Assisted Therapy (MAT) in the postpartum period.

- Health insurance plans, both private and public, should separate payments in the postpartum period, to unbundle the postpartum visit services from labor and delivery.^{iv} Reimbursement to include hospitalization for standard observation times of at least 4 to 7 days after birth per American Academy of Pediatrics (AAP) guidelines for opioid exposed newborns.
- Expand Early Intervention (EI) services for opioid exposed infants to include referrals for all opioid exposed newborns after delivery and provide ongoing developmental assessments at six month intervals until three years of age.
- Establish a safeguard for children of mothers engaged in MAT program during pregnancy. This includes intensive family services, defined as intact family services, Early Intervention (EI), Home Nursing, and continued Medication Assisted Therapy (MAT).
- Develop an infrastructure of community health nurses and/or social workers who can consistently follow families for at least two years after delivery, given the high rate of maternal relapse in the first two years after achieving sobriety.

Conclusion

Opioid use disorder is a growing public health crisis across the nation and in Illinois. The incidence of opioid use has significantly increased over the past eight years in the general population, for women of reproductive age, and for pregnant women. Thus, the rate of infants born with NAS has also grown since 2011 in Illinois.

The NAS Advisory Committee was created to address this epidemic and provide guidance and recommendations to IDPH on ways to reduce the incidence of NAS. The Committee has made recommendations in accordance with the Civil Administrative Code of Illinois, Department of Public Health Powers and Duties Law (20 ILCS 2310/2310-677). These recommendations, to date, address Charge 1, Charge 2, and Charge 5 of the NAS Advisory Committee. All of the Committee's recommendations are grounded in evidence-based research.

The Committee worked alongside the Illinois Perinatal Quality Collaborative (ILPQC) as it developed and implemented a quality improvement initiative for mothers and newborns affected by opioids across all of Illinois' birthing hospitals. This work informed the Committee's recommendations specifically to Charge 3 and Charge 5. The Committee additionally reviewed The Illinois Maternal Morbidity and Mortality Report released by IDPH in October 2018 and found much alignment in recommendations.

Although much information exists around NAS, data and information are rapidly evolving and IDPH will need to continue to review, adjust, and adapt policies and programs to reflect the needs of Illinoisans. There still remain many unknown answers and the State of Illinois has an opportunity to be a thought leader in caring for women with OUD/SUD and preventing and/or optimally managing children affected by NAS.

The NAS Advisory Committee remains committed to recommending solutions that reduce the incidence of NAS in the state of Illinois.

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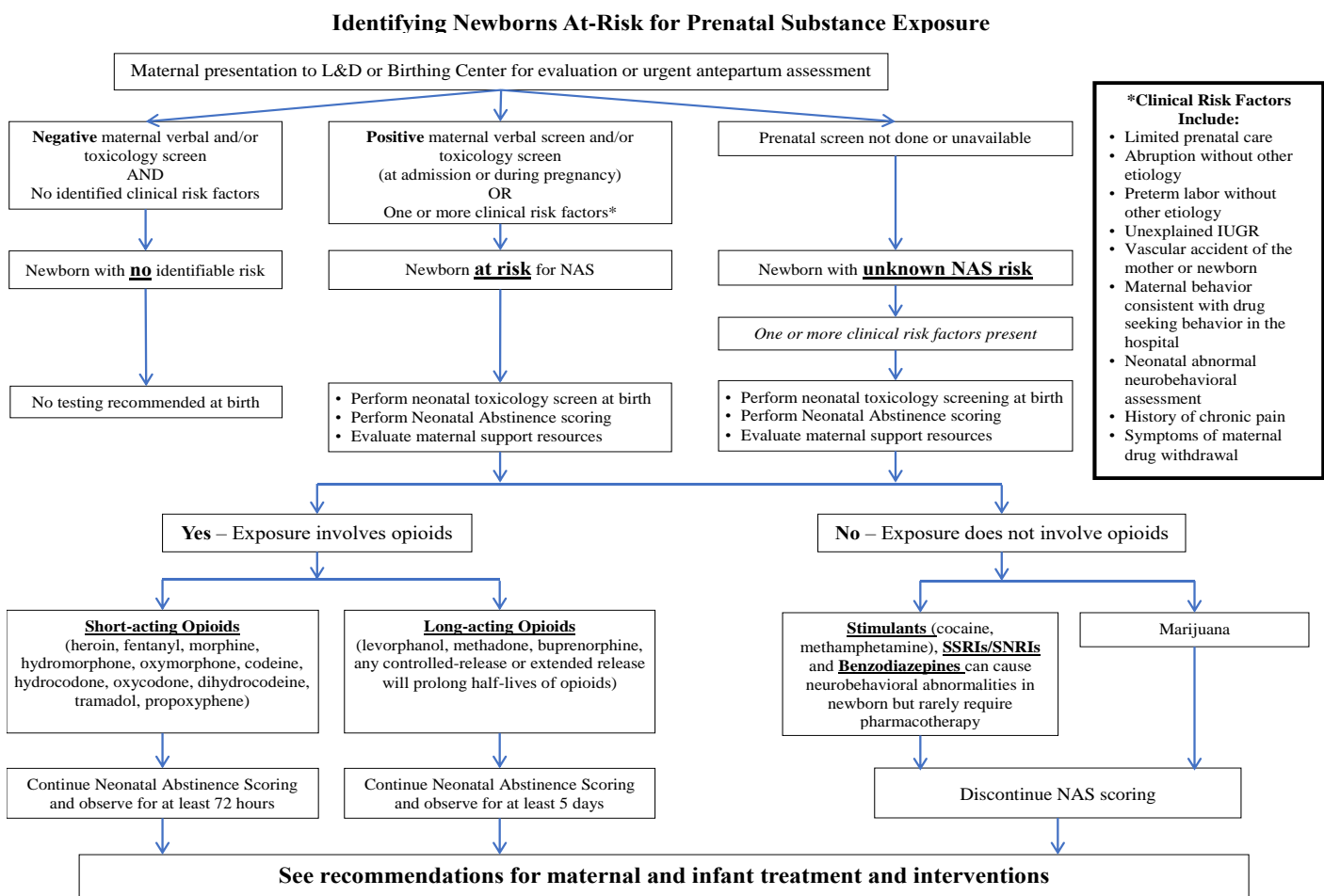
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Appendices

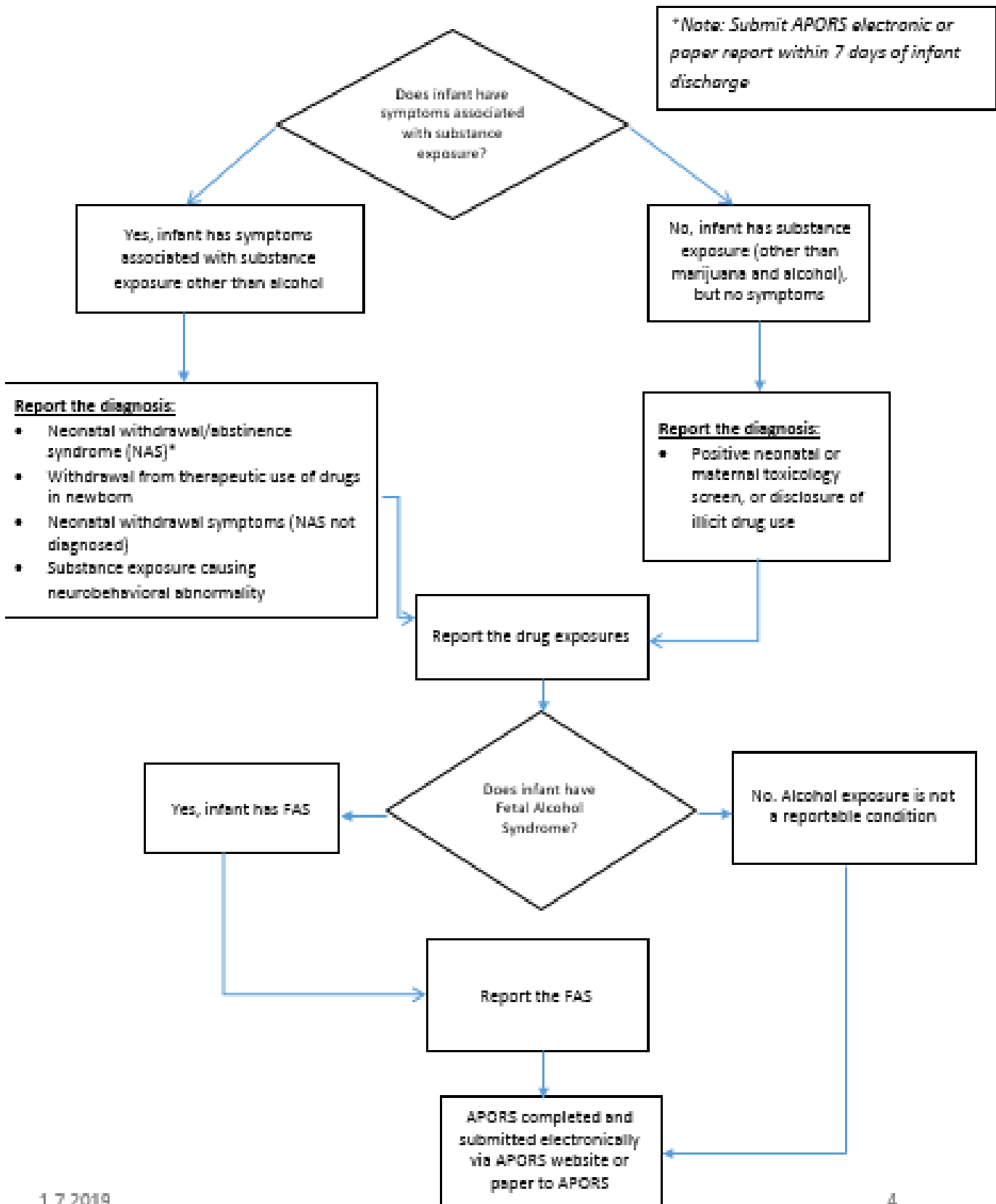
Appendix A: Identifying Newborns at Risk for Prenatal Substance Exposure Decision Tree



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Appendix B: APORS Data Reporting Workflow for Substance-Exposed Newborns for Hospital Teams

APORS Data Reporting Workflow for Substance-Exposed Newborns for Hospital Teams



Appendix C: Recommendations, Strategies, and Resources for Mothers and Newborns affected by Opioids

Policy recommendations to improve care for mothers and newborns affected by opioids

- I. Universal Screening for SUD/ OUD / Alcohol Use in pregnancy with a validated self-report screening tool
Given opioid overdose is now the leading cause of maternal death, consider legislation to require Universal Screening for SUD / OUD / Alcohol Use with a validated self-report screening tool early in prenatal care and again during delivery admission. As recommended by the American College of Obstetrics and Gynecology and the Illinois MMRC report recommendations. Recommended validated screening tools available at www.ilpqc.org, with resources to support implementation of universal screening with a validated tool in the inpatient and outpatient settings, and to support SBIRT standard response for all screen positive patients. Would be similar to current legislation requiring universal screening for perinatal depression with a validated screening tool for all pregnant and postpartum women in Illinois.
- II. Reimbursement for Universal Screening with a validated self-report screening tool and SBIRT
Ensure Medicaid reimbursement for Universal Standardized Screening for Substance Use Disorder / OUD for all pregnant women via Screening, Brief Intervention, and Referral to Treatment (SBIRT) during prenatal care, delivery admission or postpartum care for pregnant or postpartum women. We need to widely publish to OB providers and clinical care teams confirmation that these codes can be used to reimburse for screening, brief intervention and referral to treatment for SUD / OUD outside of the maternity bundle.
 - G0396 Alcohol and/or substance (other than tobacco) abuse structured assessment (e.g. audit, NIDA, 5P's), and brief intervention 15 to 30 minutes
 - G0397 Alcohol and/or substance (other than tobacco) abuse structured assessment (e.g. audit, NIDA, 5P's), and brief intervention greater than 30 minutes
- III. Priority access and flexible treatment
Drug treatment programs should be tailored to pregnant or parenting women by taking into account the woman's family obligations, and the provision of priority access.
- IV. Expand # Buprenorphine Providers
Expand opportunities to offer Buprenorphine waiver training via ACOG/ASAM to increase the number of women's health care providers offering medication for substance use disorder treatment for women with OUD during pregnancy / postpartum.
 - Strategy: Identify funding to help subsidize/offset costs for offering Buprenorphine trainings in Illinois
 - Strategy: Support provider hotline or warmline for OUD/MAT and pregnancy questions, would help support new OB providers with waivers get started and all OB providers increase comfort with MAT management during pregnancy / postpartum period.

- V. Expand Postpartum Care
- Expand care in the postpartum period to promote universal early postpartum visit with in the first two weeks postpartum. This would provide additional early postpartum care visit for all postpartum women that can be scheduled prior to hospital discharge after delivery, providing an opportunity for an early maternal safety check (evaluate maternal risks such as high blood pressure, maternal depression, substance use, wound infections, cardiac symptoms that can lead to maternal morbidity and mortality), and also could increase the percentage of women receiving postpartum care, improve access to effective postpartum contraception options, and an opportunity to link postpartum moms to needed community services.
 - Extend the postpartum period beyond the typical six weeks to cover one year postpartum to provide medical care and follow up during a time period when many pregnancy-associated maternal deaths occur. Also provides ongoing coverage for MAT in the postpartum period for women with Opioid Use Disorder, an at risk time for maternal overdose.
 - Strategy: Allow reimbursement for early postpartum visits (within 2-3 weeks of delivery) per MMRC recommendations and ACOG Committee Opinion #736
 - Strategy: Implement a waiver to extend Medicaid coverage beyond 60 days postpartum to cover one year postpartum for women who would otherwise lose their coverage at that time
- VI. Reimbursement for inpatient care of substance-exposed newborns
- Reimbursement for hospital and physician charges outside of the healthy newborn delivery bundle will be provided by the respective public or private payment entity. Reimbursement to include hospitalization for standard observation of at least 4-7 days after birth per American Academy of Pediatrics guidelines for opioid exposed newborns
- VII. Strengthening Post-discharge care and neurodevelopmental follow-up for substance-exposed newborns
- Expand early intervention services for opioid exposed infants to include referrals for all opioid exposed newborns after delivery and provide ongoing developmental assessments at 6-month intervals until three years of age. <https://www.ncbi.nlm.nih.gov/pubmed/30166364>
 - Establish a safeguard for children whose mothers who entered a medication-assisted treatment program during the pregnancy. This would include intensive family services on a regular, ongoing basis for at least the first year after birth to ensure maternal sobriety and to ensure the safety of the infant. Intensive family services are family-focused, community-based crisis intervention services designed to maintain children safely in their homes and prevent the unnecessary separation of families. This includes intact family services, early intervention, and home nursing.
 - The Committee believes that targeting women with SUD/ODU during pregnancy for criminal prosecution or forced treatment is inappropriate and will deter women from treatment vital both for themselves and the child. Policies should look to current evidence based guidelines and medical practices to determine the best public health interventions for moms and babies.^{xxiv} Develop an infrastructure of community health nurses and/or social workers that can consistently follow families for at least two years after delivery, given the high rate of maternal relapse in the first two years after achieving sobriety.

Strategies and resources to improve care for mothers and newborns affected by opioids

Resources to improve care of women with Opioid Use Disorder (OUD)

- I. Implement Universal Screening for SUD/OD for pregnant women (inpatient and outpatient) with a Validated Screening Tool
 - a. The American College of Obstetricians and Gynecologists (ACOG) CO #711, and IDPH- Illinois Maternal Morbidity and Mortality Report 2018, recommend that all pregnant women receive early universal screening with a validated self-report screening tool for substance use disorder including OUD. Women should be screened early in prenatal care and on delivery admission. Urine toxicology testing is recommended only for monitoring and following patients with SUD/OD (with the patients consent). Urine toxicology testing is not recommended for screening. Urine toxicology testing should only be used as an adjunct, with consent, if it will help guide clinical management.
 - b. Current Universal Self-Report Screening Tools for Opioid Use Disorder:
 - a. Illinois Perinatal Quality Collaborative MNO-OB Toolkit: <http://ilpqc.org/?q=MNO-OB> (see Toolkit Section 3 'Universal Screening Tools')
 - b. NIDA Quick Screen: <https://www.drugabuse.gov/publications/resource-guide-screening-drug-use-in-general-medical-settings/nida-quick-screen>
 - c. Substance Use Risk Profile Pregnancy Scale: <http://www.ilpqc.org/docs/toolkits/MNO-OB/Substance-Use-Risk-Profile-Pregnancy-Scale.pdf>
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 - g. Alliance for Innovation on Maternal Health (AIM) Opioid Screening Overview of Tools: <https://safehealthcareforeverywoman.org/wp-content/uploads/2018/08/AIM-Opioid-Screening-Tools.pdf>
 - c. Other Applicable Screening Tools
 - a. The Northern New England Perinatal Quality Improvement Network (NNEPQIN) Toolkit for the Perinatal Care of Women with Substance Use Disorders includes other screening tools for use with women with OUD: <http://www.nnepqin.org/wp-content/uploads/2019/01/Toolkit-Perinatal-Care-Women-SUD-COMplete-PRINT-VERSION-rev1.27.19.pdf>
- II. All OB Clinical Care Teams (inpatient and outpatient) be Trained on Checklist and Protocols Including SBIRT protocols (Screen, Brief Intervention, Referral to Treatment)
 - a. All screen-positive pregnant or postpartum women should receive a brief intervention to assess and counsel on risks of SUD and pregnancy, determine appropriate level of care, and recommend Medication Assisted Treatment (MAT) for women with OUD and provide referral to MAT and ongoing Behavioral Health Counseling/Recovery Services.
 - a. ILPQC MNO Provider / Outpatient Letter: http://www.ilpqc.org/docs/toolkits/MNO-OB/ILPQC_MNO_OB_Provider_Prenatal_Site_Letter_FINAL.doc
 - b. ILPQC SBIRT Pocket Card: http://www.ilpqc.org/docs/toolkits/MNO-OB/SBIRT_pocketcard_Final_2%2025.pptx
 - c. ILPQC Missed Opportunities Review Form: Tool for hospital teams to identify and learn from missed opportunities to start patients on MAT and link to recovery services. Review the record

of all women with OUD not on MAT at time of delivery discharge and identify barriers and strategies for linking women with OUD to MAT and Behavioral Health Counseling/Recovery Services prenatally/L&D. http://www.ilpqc.org/docs/toolkits/MNO-OB/MNO-OB%20Missed%20Opportunities%20Review%20Form_Final_2.7.2019.docx

III. All Hospitals Complete Mapping of Local Treatment and Services for OUD

- a. All birthing hospitals should complete a community mapping tool to map local community resources for Medication Assisted Treatment (MAT) and Behavioral Health Counseling / Recovery Services for pregnant/postpartum women with OUD, along with a process for a referral plan to act on if/when a mother screens positive. Share the completed mapping tool and developed referral process with inpatient and outpatient settings that provide care to pregnant or postpartum women including: Labor and Delivery, Antepartum/Postpartum Units, Emergency Room, and Outpatient sites that provide prenatal/postpartum care.
- b. Mapping Community Resources and Linking Women with OUD to MAT & Behavioral Health Counseling / Recovery Services
 - a. ILPQC Mapping Tool to map local resources: http://www.ilpqc.org/docs/toolkits/MNO-OB/Opioid-Use-Treatment-Mapping-Tool_5.11.18.docx
 - b. IDPH Opioid Use Treatment Resources for Pregnant Women with Medicaid in Illinois: <http://www.dph.illinois.gov/sites/default/files/publications/publicationsowhopioid-use-treatment-resource-manual-ab.pdf>
 - c. Illinois Department of Children and Family Services (DCFS) Service Provider Identification & Exploration Resource (SPIDER): <https://spider.dcfs.illinois.gov/Search/SearchAgency>
 - d. Illinois Department of Human Services:
 - i. Illinois Helpline for Opioids and Other Substances: <https://helplineil.org/>
 - ii. Substance Use Prevention and Recovery (SUPR) Provider Information: <http://www.dhs.state.il.us/page.aspx?item=29747>
- c. Medication Assisted Treatment (MAT) and Buprenorphine Waiver Resources
 - a. ASAM Treatment of Opioid Use Disorder Online Course (General, not specific for providers caring for women, Includes Waiver Qualifying Requirements): <https://elearning.asam.org/buprenorphine-waiver-course>
 - b. ASAM Treatment of OUD Resources (Prescribing, Billing & Coding, and provider support resources): <https://www.asam.org/education/live-online-cme/waiver-training/content-handouts>
 - c. Substance Abuse and Mental Health Service Administration (SAMHSA) MAT Website: <https://www.samhsa.gov/medication-assisted-treatment>
 - d. Providers Clinical Support System (PCSS) MAT Education and Training Courses, Clinical Mentoring, and Provider Resources: <https://pcssnow.org/>
 - e. Periodic in-person Buprenorphine Waiver training courses for providers caring for women offered by ILPQC in partnership with American Society for Addiction Medicine (ASAM) and American College of Obstetricians and Gynecologists (ACOG).

IV. Implement and train OB Clinical Care Teams (inpatient and outpatient) on OUD Clinical Care Checklist and Protocols

- a. All screen-positive women should have an OUD Clinical Care Checklist completed in the medical record during prenatal care and during the delivery admission. The checklist is used to confirm key counseling, consults, and screening labs are completed for all pregnant or postpartum women with OUD. For example, all screen-positive women should also receive Narcan (Naloxone) counseling and prescription offered prenatally or during delivery admission and should receive a Hepatitis C screen. Include family / support network of the screen positive women, with consent, in the provision of education and counseling.
 - a. ILPQC OUD Clinical Care Checklist (Antepartum, Third Trimester, During Delivery Admission, Care): http://www.ilpqc.org/docs/toolkits/MNO-OB/ILPQC%20OUD%20Clinical%20Care%20Checklist_1pager_Final.2.25%20%281%29.docx
 - b. AMA Opioid Task Force recommendations on Naloxone: <https://www.end-opioid-epidemic.org/wp-content/uploads/2017/08/AMA-Opioid-Task-Force-naloxone-one-pager-updated-August-2017-FINAL-1.pdf>
 - c. Additional Checklists
 - 1. AIM Opioid Use Disorder Clinical Care Checklist: <https://safehealthcareforeverywoman.org/wp-content/uploads/2018/08/Opioid-Use-Disorder-Clinical-Pathway.pdf>
 - 2. Northern New England Perinatal Quality Improvement Network Opioid Use Disorder Clinical Care Checklist: <http://www.ilpqc.org/docs/toolkits/MNO-OB/Example-Checklist-for-Care-of-Pregnant-Women-with-SUD.pdf>
- V. Standardize Provider and Staff Education on OUD / NAS Protocols and Stigma Reduction
- a. All obstetric providers and nurses should receive standardized education on SUD/ OUD screening and SBIRT, OUD clinical care checklist and the OUD care protocols. All neonatal providers and nurses should receive education on NAS care protocols (see section on resources to improve the care of opiate exposed newborns in this outline). All obstetric and neonatal providers and nurses should receive education to understand how stigma and implicit bias negatively impacts care for women and their newborns during pregnancy, the delivery admission and in the postpartum period.
 - b. Provider/Staff Education Resources on OUD / NAS included in the ILPQC toolkit*
 - a. ILPQC “Words Matter” OUD Stigma and Bias eModule from ILPQC 2018 Annual* Conference
 - b. ILPQC Mothers and Newborns affected by Opioids (MNO) OB Grand Rounds Slide Set*
 - c. CDC Provider Training eModule #9: Applying CDC Guidelines for Prescribing Opioids*: <https://www.cdc.gov/drugoverdose/training/pregnancy/>
 - d. ILPQC/IDPH Pause Before You Prescribe*: http://www.ilpqc.org/docs/toolkits/MNO-OB/ilpqc_pause.pdf Hand out for all providers / nurses focused on safe prescribing for pregnant women
 - c. Additional provider/nursing specific resources
 - a. Education on screening tool options:
 - 1. ACOG Committee Opinion #711: Opioid Use Disorder in Pregnancy: <https://www.acog.org/Clinical-Guidance-and-Publications/Committee-Opinions/Committee-on-Obstetric-Practice/Opioid-Use-and-Opioid-Use-Disorder-in-Pregnancy>
 - b. SBIRT Protocol:
 - 1. ACOG Committee Opinion #473: Substance Abuse Reporting and Pregnancy- the Role of the OBGYN: <https://www.acog.org/Clinical-Guidance-and-Publications/Committee->

[Opinions/Committee-on-Health-Care-for-Underserved-Women/Substance-Abuse-Reporting-and-Pregnancy-The-Role-of-the-Obstetrician-Gynecologist](#)

- c. Stigma & Bias Education
 - 1. Words Matter: How Language Choice Can Reduce Stigma:
<https://www.samhsa.gov/capt/sites/default/files/resources/sud-stigma-tool.pdf>
- d. Illinois Prescription Monitoring Program (ILPMP) Database Education: Effective January 1, 2018, Illinois law requires providers with a controlled substance license to register with the ILPMP. Providers must check and document review of ILPMP prior to prescribing narcotics/opioids for all patients. If patients have three prescribers or three dispensers within thirty days, ILPMP may report to prescribers. All Electronic Medical Records (EMRs) must be linked to ILPMP by 2021.
 - 1. ILPQC Overview of Illinois State Law for ILPMP Look up & Documentation:
http://www.ilpqc.org/docs/toolkits/MNO-OB/ILPMP-law-overview_program%20overview_Overview.pdf
 - 2. CDC Guidelines for prescribing for chronic pain:
https://www.cdc.gov/drugoverdose/pdf/guidelines_factsheet-a.pdf
- e. Address concerns regarding pain management options
 - 1. CDC Guideline for Prescribing Opioids for Chronic Pain:
https://www.cdc.gov/drugoverdose/pdf/guidelines_factsheet-a.pdf

- VI. Standardize Education on OUD/NAS for all Pregnant / Postpartum Women with OUD and their Families
 - a. All pregnant women with OUD should receive standardized education/counseling on OUD and NAS, importance of breastfeeding for eligible newborns, and importance of maternal participation in non-pharmacologic care for opioid exposed newborns.
 - b. Patient/Family/Support Education Resources from ILPQC toolkit*
 - a. IDPH/ILPQC: NAS Booklet (You are the Treatment for Your Baby)*:
http://www.ilpqc.org/docs/toolkits/MNO-OB/NAS_WhatYouNeedToKnow.pdf
 - b. IDPH/ILPQC: NAS What You Need to Know 1-page*r: http://www.ilpqc.org/docs/toolkits/MNO-OB/NAS_WhatYouNeedToKnow_Half-Pager.pdf
 - c. IDPH/ILPQC Prescription Pain Medicine, Opioids, and Pregnancy: What All Pregnant Women Need to Know*: http://www.ilpqc.org/docs/toolkits/MNO-OB/PrescriptionPainMedicine_2page.pdf
 - d. Are you in Treatment or Recovery? Contraception Counseling for Women with OUD*:
http://www.ilpqc.org/docs/toolkits/MNO-OB/contraception-hand-out_MNO.pdf
 - c. Additional patient / family / support / education resources
 - a. Treatment Options for OUD:
 - 1. ASAM: Pregnancy: Methadone and Buprenorphine: https://30qkon2g8eif8wrj03zeh041-wpengine.netdna-ssl.com/wp-content/uploads/2013/10/WAGBrochure-Opioid-Pregnancy_Final.pdf
 - b. Breastfeeding Planning / Education:
 - 1. ASAM: Childbirth, Breastfeeding, and Infant Care: Methadone and Buprenorphine: http://pcssnow.org/wp-content/uploads/2015/10/ASAM-WAGBrochure-Opioid-Labor_Final.pdf
 - d. Safe Sleep Practices:

1. Safe Sleep for Your Baby: Reduce the Risk of Sudden Infant Death Syndrome (SIDS) and Other Sleep-Related Causes of Infant Death:
https://www.nichd.nih.gov/sites/default/files/publications/pubs/Documents/NICHD_Safe_to_Sleep_brochure.pdf
2. What does a safe sleep environment look like? Reduce the Risk of SIDS and Other Sleep-Related Causes of Infant Death: https://www.nichd.nih.gov/sites/default/files/2019-02/Safe_Sleep_Environ_update.pdf

VII. Strategies for Prevention of OUD to Reduce Overprescribing for Vaginal and C-Section Delivery Pain Management Care. Tools that hospitals and providers can use include:

- a. Avoid overprescribing at delivery graphic: <http://www.ilpqc.org/docs/toolkits/MNO-OB/Avoid%20Overprescribing%20Graphic.pdf>
- b. A Shared Decision-Making Intervention to Guide Opioid Prescribing After Cesarean Delivery – article and PowerPoint tool*
 - a. Article: https://scholar.harvard.edu/files/nkc/files/2017_a_sdm_intervention_to_guide_opioid_prescribing_obstet_gynec.pdf
 - b. Powerpoint: http://www.ilpqc.org/docs/toolkits/MNO-OB/Shared%20Decision%20Making_Opioid%20Prescribing%20after%20C-Section_PowerPoint%20Tool.pdf
- c. Example Enhanced Recovery After Surgery (ERAS) Pathway for Cesarean Section: <http://www.ilpqc.org/docs/toolkits/MNO-OB/Example%20ERAS%20Pathway.pdf>
- d. Example SBAR: removing opioids from order sets to reduce opioid over prescribing at delivery: <http://www.ilpqc.org/docs/toolkits/MNO-OB/Example%20SBAR.pdf>

Resources to improve the care of Opioid Exposed Newborns (OENs)

I. Improve Pre-Delivery Planning

- a. ILPQC MNO Prenatal Consultation Guidelines: http://www.ilpqc.org/docs/toolkits/MNO-Neo/ILPQC_MNO%20Prenatal%20Consultation%20Guidelines_5.18.2018%20%28FINAL%29.pdf

II. Standardize Identification, Monitoring, and Assessment of OENs.

IDPH NAS Advisory Council NAS Definition: Neonatal Abstinence Syndrome refers to the collection of signs and symptoms that occur when a newborn prenatally exposed to prescribed, diverted, or illicit opiates experiences opioid withdrawal. This syndrome is primarily characterized by irritability, tremors, feeding problems, vomiting, diarrhea, sweating, and, in some cases, seizures.

- a. IDPH NAS Advisory Council: Identify Newborns at Risk for NAS Decision Tree: http://www.ilpqc.org/docs/toolkits/MNO-Neo/IDPH_Identifying%20Newborns%20at%20Risk%20for%20NAS%20Decision%20Tree_2.14.2019.DOC_X
- b. ILPQC Eat-Sleep-Console & Non-Pharmacologic Care Provider Bedside Sheet: http://www.ilpqc.org/docs/toolkits/MNO-Neo/ILQPC_Bedside_Data_Sheet.pdf
- c. Sample Modified Finnegan’s Neonatal Abstinence Scoring Tool (University Health System): <https://www.universityhealthsystem.com/~media/files/clinical-pathways/modified-finnegans-nas-scoring-tool-pt-approved-0615.pdf?la=en>
- d. American Academy of Pediatrics: Neonatal Drug Withdrawal: <http://pediatrics.aappublications.org/content/129/2/e540>

- e. ILPQC Inpatient Monitoring Guidelines: <http://www.ilpqc.org/docs/toolkits/MNO-Neo/Inpatient-Monitoring.pdf>
- III. Provide Family Education
- a. IDPH/ILPQC: NAS Booklet (You are the Treatment for Your Baby): http://www.ilpqc.org/docs/toolkits/MNO-OB/NAS_WhatYouNeedToKnow.pdf IDPH/ILPQC: NAS What You Need to Know 1-pager: http://www.ilpqc.org/docs/toolkits/MNO-OB/NAS_WhatYouNeedToKnow_Half-Pager.pdf
- IV. Improve Infant Nutrition and Breastfeeding
- a. SSM Health St. Mary's Hospital: Sample Breastfeeding Summary: <http://www.ilpqc.org/docs/toolkits/MNO-Neo/SSM-Breastfeeding-Summary.pdf>
 - b. ABM Clinical Protocol #21: Guidelines for Breastfeeding and Substance Use or Substance Use Disorder, Revised 2016: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4378642/pdf/bfm.2015.9992.pdf>
 - c. NNEPQIN: Sample Breastfeeding Guidelines for Women with a Substance Use Disorder: <http://www.ilpqc.org/docs/toolkits/MNO-OB/Breastfeeding-Guidelines-for-Women-with-SUD.pdf>
 - d. Baystate Children's Hospital: Sample Marijuana and Breastfeeding Guidelines: http://www.ilpqc.org/docs/toolkits/MNO-Neo/Sample-Marijuana_Breastfeeding-Guidelines.pdf
- V. Optimize Non-Pharmacologic Care
- a. ILPQC Non-Pharmacologic Care Definitions: <http://www.ilpqc.org/docs/toolkits/MNO-Neo/Non-Pharm-Care-Definitions.pdf>
 - b. ILPQC Newborn Care Diary for Parents: http://www.ilpqc.org/docs/toolkits/MNO-Neo/ILPQC_Newborn_Care_Diary_final.pdf
- VI. Standardize Pharmacologic Treatment
- a. SSM Health St. Mary's Hospital Guidelines for Pharmacologic Treatment when using ESC Method: <http://www.ilpqc.org/docs/toolkits/MNO-Neo/SSM-Guidelines-for-Pharmacologic-Treatment-ESC-Method.pdf>
 - b. NNEPQIN: Sample ESC-Based Pharmacologic Treatment Regimens: Boston Medical Center NAS Pharmacologic Treatment Algorithm & Children's Hospital at Dartmouth- Hitchcock NAS Management Algorithm: http://www.ilpqc.org/docs/toolkits/MNO-Neo/NNEPQIN-Sample_ESC_based_Pharmacologic_Treatment_Regimens.pdf
 - c. BMC: Sample NAS Primary & Secondary Agent Algorithms: <http://www.ilpqc.org/docs/toolkits/MNO-Neo/BMC-Sample-NAS-Primary-%26-Secondary-Agent-Algorithms.pdf>
- VII. Coordinate and Communicate Safe Discharge
- a. ILPQC Coordinating a Safe Discharge: http://www.ilpqc.org/docs/toolkits/MNO-Neo/ILPQC_Coordinating-Safe-Discharge.pdf
 - b. Accurate Reporting of NAS in APORS Fact Sheet: http://www.ilpqc.org/docs/toolkits/MNO-Neo/Accurate%20Reporting%20of%20NAS%20in%20APORS_2.8.2019_Final.docx
 - c. Illinois DCFS Statute: Neglected Child: http://www.ilpqc.org/docs/toolkits/MNO-Neo/Illinois_Statutes_Children_325_ILCS_5_Abused_and_Neglected_Child.pdf
 - d. IDPH Adverse Pregnancy Outcomes Reporting System (APORS): <http://www.idph.state.il.us/about/epi/apors.htm>
 - e. SAMHSA: Early Intervention Strategies and Developmental Assessments (Section 2: Infant Care, Factsheet 13): <https://store.samhsa.gov/system/files/sma18-5054.pdf>
 - f. U.S. Department of Health and Human Services, Children's Bureau: The Child Abuse Prevention and Treatment Act (CAPTA): <https://www.acf.hhs.gov/cb/resource/capta>