2022 Practice Survey Summary Report

June 2022

PNQIN Perinatal Opioid Project 2022 Practice Survey Overview

As part of the ongoing PNQIN Perinatal Opioid Project, we have asked Massachusetts hospitals to complete periodic surveys asking about practices around the care of mothers and newborns impacted by perinatal opioid use. This report summarizes the most recent survey from 2022. The surveys were previously completed in 2017 and 2020, with minor revisions for each survey. The 2022 survey was distributed in April to team leaders at 43 Massachusetts birthing or pediatric hospitals. Responses were received between May and June from 28 hospitals. The survey primarily focused on in-hospital care and discharge planning of newborns at risk for Neonatal Opioid Withdrawal Syndrome (NOWS); maternal care practices are being assessed through the PNQIN Alliance on Innovation in Maternal Health (AIM) opioid initiative.

Key Findings

- Almost all hospitals offer medications for opioid use disorder (MOUD) for hospitalized pregnant patients, with a majority of hospitals offering MOUD titration.
- All hospitals have written policies around various aspects of care of the infant at risk for NOWS, particularly around testing and treatment. Not all hospitals have policies around use of Plans of Safe Care (POSC).
- The majority of hospitals are using the Eat-Sleep-Console (ESC) framework to evaluate symptoms of NOWS.
- Morphine is the most common first-line agent for pharmacologic treatment of NOWS. A sizable minority of hospitals use "PRN" rather than standing dosing for initiation of pharmacologic therapy.
- Most hospitals, but not all, use cardiac or oxygen monitoring for infants receiving pharmacologic therapy for NOWS.
- Almost all hospitals are able to keep the infant and mother together when the infant does not receive pharmacologic treatment, before and after maternal discharge. Rooming-in becomes more variable if the infant receives pharmacologic treatment, particularly if infants receive care in special care nursery or NICU.
- Almost all hospitals verbally screen for cannabis use, regardless of other substance use history. For most hospitals, cannabis use is a relative contraindication to breastfeeding.
- Most hospitals notify the Department of Children and Families (DCF) and provide referrals to Early Intervention (EI) for all opioid-exposed newborns, regardless of NOWS diagnosis.

Comparison with 2017 and 2020 Surveys

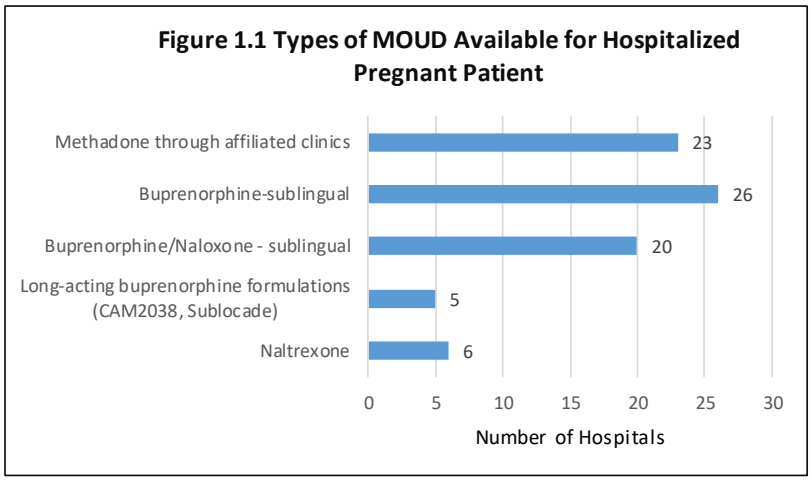
- 32 hospitals completed the survey in 2017, 27 completed in 2020, and 28 completed in 2022.
- In 2017, almost all hospitals used a version of the Finnegan system to score symptoms of NOWS. By 2022, the majority of hospitals are using ESC.
- Location of care shifted for-term infants requiring pharmacologic therapy. In 2017, most hospitals typically cared for those infants in the SCN or NICU, while the majority of hospitals in 2022 are able to keep those infants in a non-intensive care setting that allows parents to stay overnight.
- Over time, more hospitals are using negative toxicology screening on admission as eligibility criteria for breastmilk use rather than 30 or 90 days of negative toxicology screens.
- Over time, fewer hospitals are considering cannabis use an absolute contraindication for breastmilk use, with no hospitals indicating this approach in 2022.
- Criteria used for notifying DCF varied in 2017, between notification for all instances of perinatal opioid use to illicit opioid use to symptoms of withdrawal. By 2020 and 2022, the majority of reported notifying DCF for all infants born to mothers with documented perinatal opioid use.
- In 2017, some hospitals referred all opioid-exposed newborns to EI while others referred only infants diagnosed with NAS; in 2020 and 2022, almost all hospitals referred all opioid-exposed newborns.
- Although the majority of hospitals have a POSC process in place, this continues to not be universal.

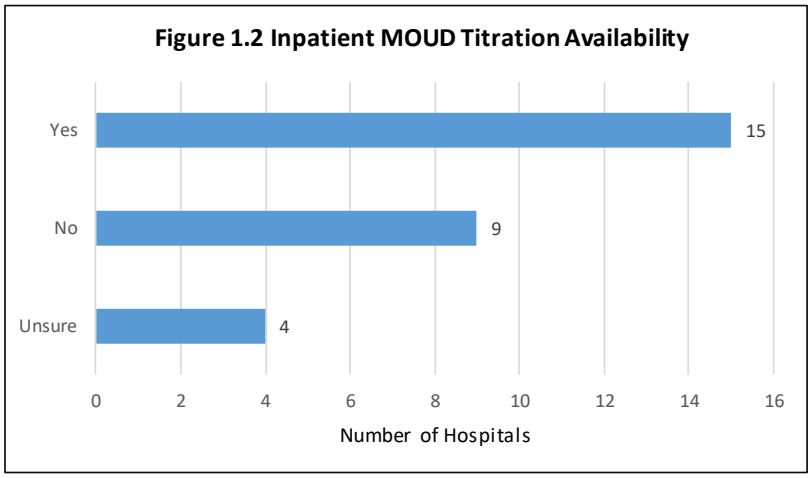
2022 Hospital Survey Participation

- Baystate Medical Center
- Baystate Franklin Medical Center
- Berkshire Medical Center
- Beth Israel Deaconess Medical Center
- Beth Israel Deaconess—Plymouth
- Beverly Hospital
- Boston Medical Center
- Boston Children's Hospital
- Brigham & Women's Hospital
- Brockton Hospital
- Cape Cod Hospital
- Cooley Dickinson Hospital
- Emerson Hospital
- Holy Family Hospital
- Lowell General Hospital
- Massachusetts General Hospital
- Mercy Medical Center
- Metrowest Medical Center
- Milford Regional Medical Center
- Mt. Auburn Hospital
- Southcoast (St. Luke's & Charlton Memorial)
- South Shore Hospital
- Sturdy Memorial Hospital
- St. Vincent Hospital
- Tufts Medical Center
- UMass Memorial Center

Medications for Opioid Use Disorder (MOUD) for Hospitalized Pregnant Patients

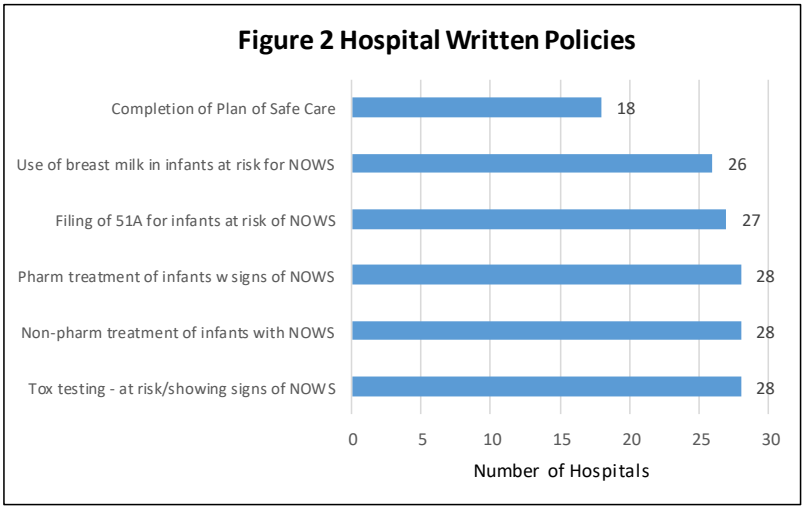
- Almost all hospitals have MOUD available, with most offering methadone and buprenorphine (Figure 1.1). A smaller number offer long-acting buprenorphine and naltrexone.
- Most hospitals provide inpatient MOUD titration, although some do not (Figure 1.2).





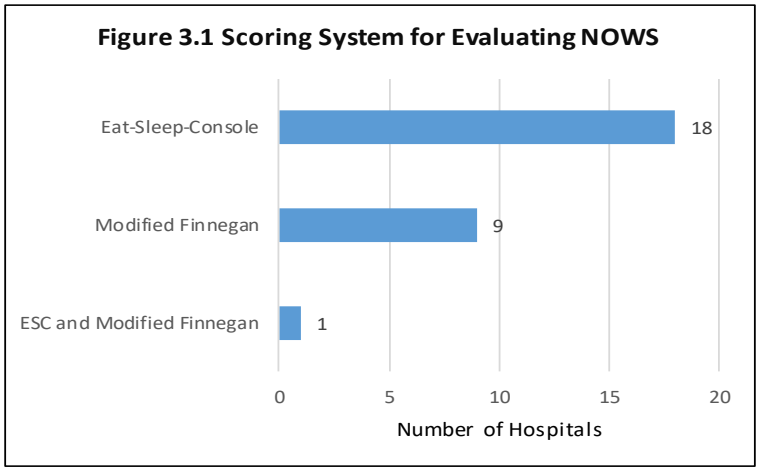
Guidelines for Care of the Infant at Risk for Neonatal Opioid Withdrawal Syndrome (NOWS)

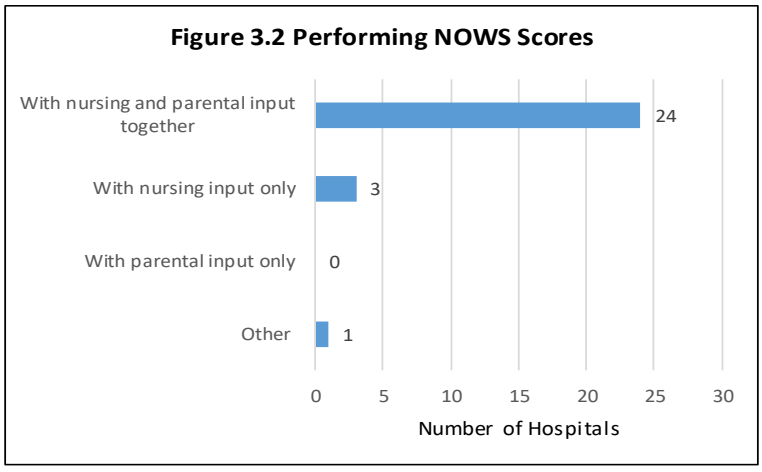
- Most hospitals report having written policies for breast milk use, completion of 51A, pharmacologic and non-pharmacologic care, and toxicology testing (Figure 2). Fewer hospitals have written policies for completion of Plan of Safe Care, although many that do not indicated this was in progress.



Scoring of NOWS Symptoms

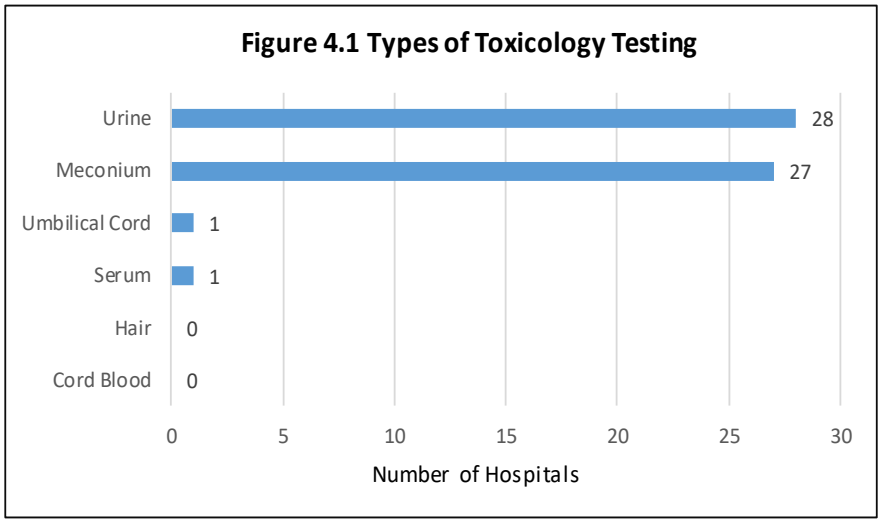
- Most hospitals are using the ESC care tool to score symptoms of NOWS, while the remaining hospitals are using a modified version of the Finnegan (Figure 3.1).
- Almost all hospitals include nursing and parental input in NOWS scoring (Figure 3.2).

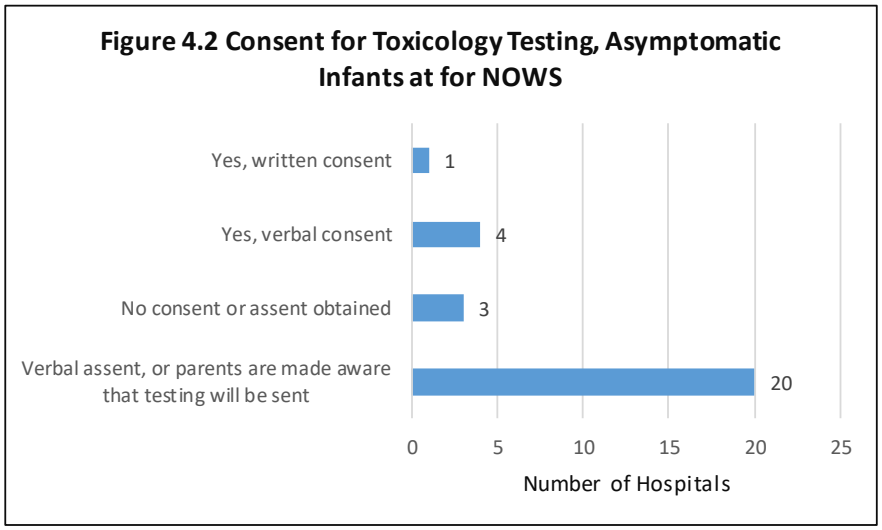




Toxicology Testing & Consent

- Most hospitals utilize meconium and urine for toxicology testing; serum and umbilical cord testing is used rarely (Figure 4.1).
- For asymptomatic infants at risk for NOWS, most hospitals inform parents and obtain verbal assent prior to toxicology testing, with a smaller number obtaining formal written or verbal consent; a few hospitals do not require assent or consent (Figure 4.2).





Pharmacologic Therapy

- Most hospitals use Morphine as the first line agent and Phenobarbital for the second line agent when pharmacologic therapy is needed for treatment of NOWS (figures 5.1, 5.2). Some hospitals reported not having used a second line agent in a few years.
- Most hospitals report using standing dosing with eventual taper when first initiating medication (18 hospitals), while some hospitals (10 hospitals) have moved to using PRN dosing to initiate pharmacologic treatment (figure 5.3).

Figure 5.1 Most Common First Line Agent When Pharmacologic Treatment is Required

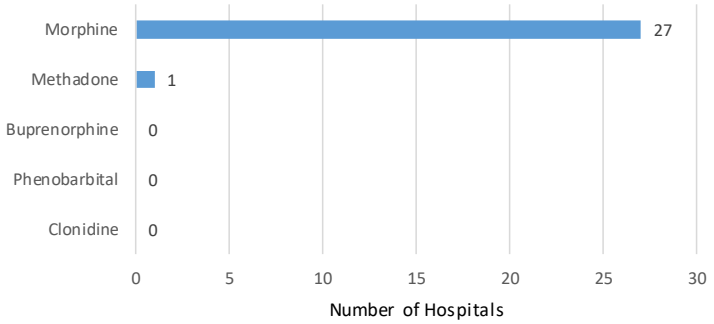


Figure 5.2 Most Common Second Line Agent When Pharmacologic Treatment is Required

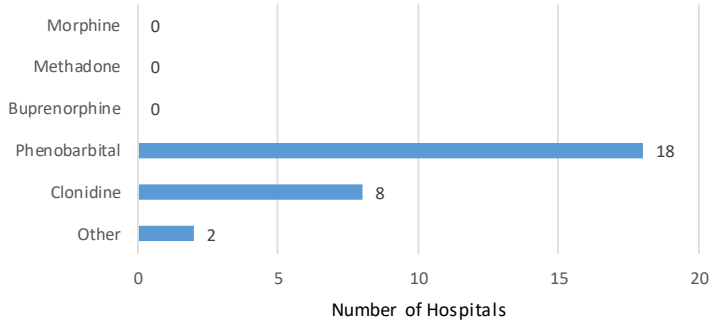
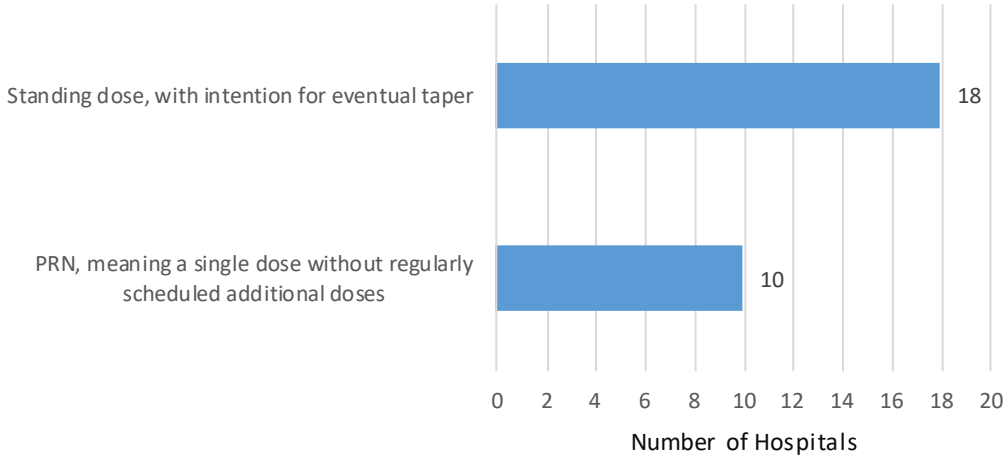


Figure 5.3 How Pharmacologic Treatment is First Initiated



Location of Care

Term Infants, Pharmacologic Treatment Not Required

- While mother is still hospitalized, almost all hospitals keep term infants not requiring pharmacologic treatment in the mother's room in the mother-baby unit (Figure 6.1).
- After the mother is discharged, most hospitals keep term infants not requiring pharmacologic treatment in a room with the mother in the mother-baby unit or on the pediatric ward (Figure 6.2).

Figure 6.1 Location of Care for Full-Term Infant: No Pharmacologic Treatment, Mother Still Hospitalized

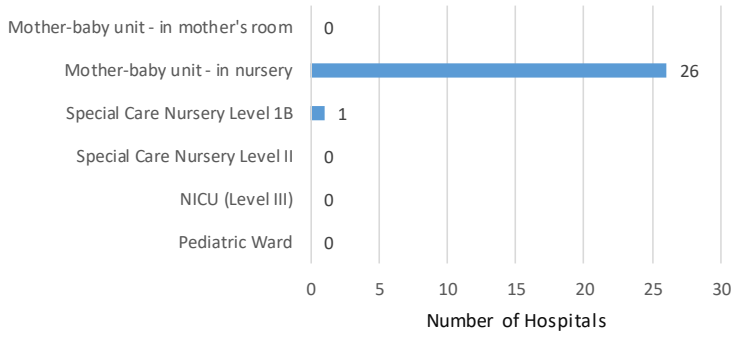
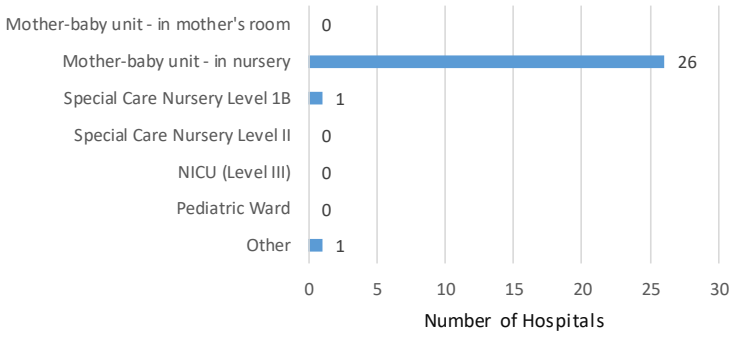


Figure 6.2 Location of Care (No Pharmacologic Treatment) - After Mother is Discharged



Term Infants, Pharmacologic Treatment Required

- For term infants requiring pharmacologic treatment and had not yet begun weaning, location of care was variable. About half of the hospitals were able to keep these infants in the mother-baby unit or in the pediatric ward, where rooming-in was likely available, while about half managed the infants in a level II or level III neonatal unit (figure 6.3).
- Similar results were seen for term infants requiring pharmacologic treatment who had begun weaning (figure 6.4).

Figure 6.3 Location of Care for Full-Term Infants: Pharmacologic Treatment Required, Not Yet Begun Weaning

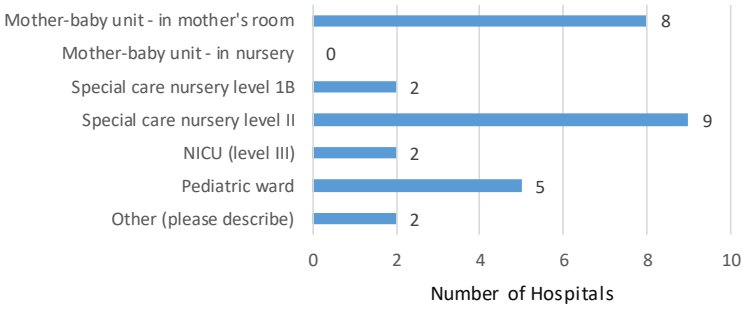
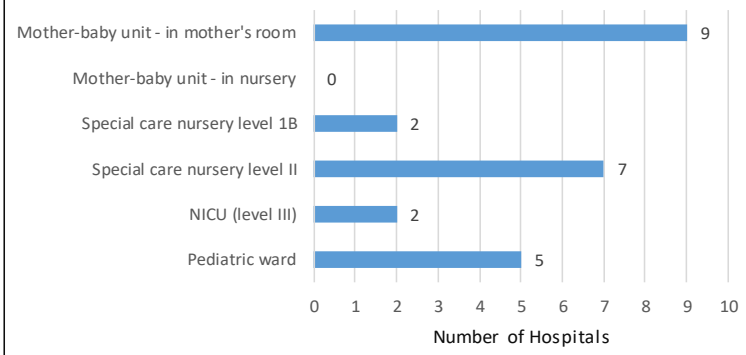


Figure 6.4 Location of Care for Full-Term Infants: Pharmacologic Treatment Required, Begun Weaning



Cardiac Monitoring

- Most hospitals routinely monitor infants receiving pharmacologic therapy for NOWS with a cardiac monitor and/or oximeter, while some do not (figure 7.1). Hospitals reporting "Other" mostly described monitoring based on provider preference.
- For the 22 hospital using cardiac monitoring and/or oximetry, the monitoring is done continuously during the pharmacologic treatment (figure 7.2).

Figure 7.1 Routing Cardiac Monitoring or Oximetry of Infants with NOWS

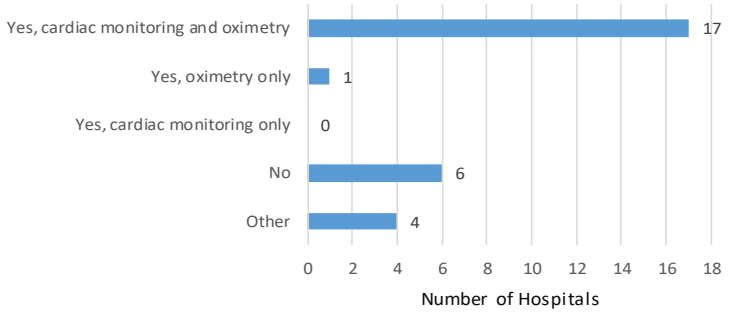
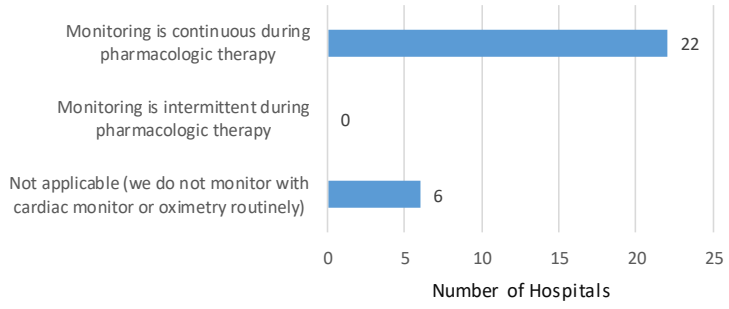


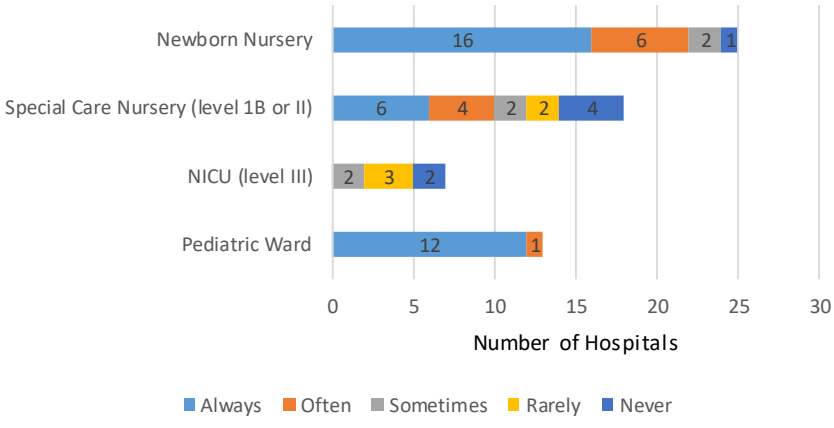
Figure 7.2 Cardiac Monitoring or Oximetry Monitoring Periods for Infants with NOWS



Rooming-In Availability (Figure 8)

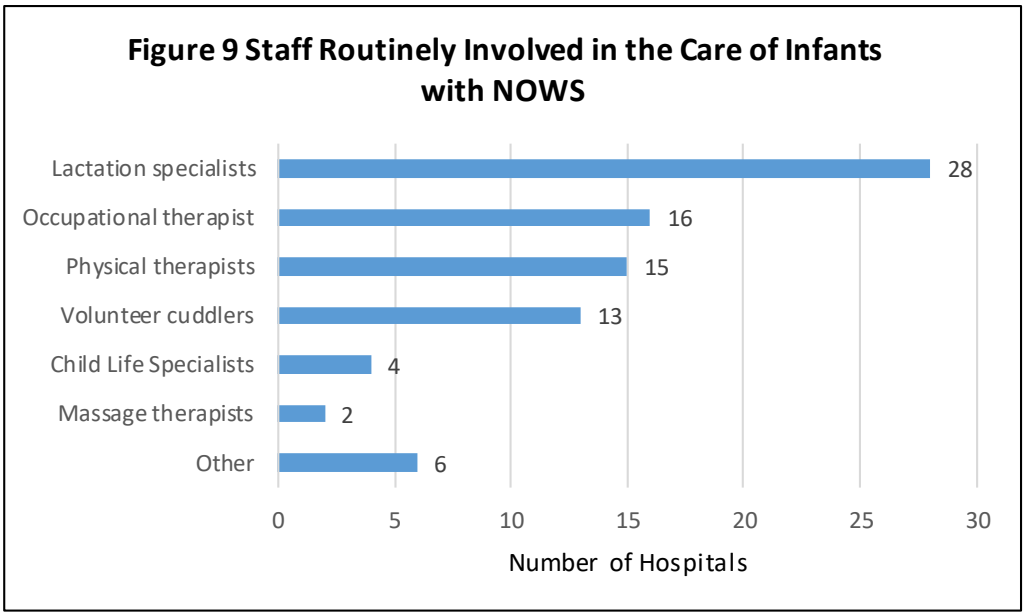
- When an infant is in the newborn nursery or pediatric ward, rooming-in is typically available.
- When an infant is in a special care level nursery, rooming-in is often available, but not always. When infants are in NICUs, rooming-in is not commonly available.
- When asked about barriers to offering rooming-in to parents when desired, respondents largely reported lack of availability and high census levels (some due to the COVID-19 pandemic). Several hospitals indicated that DCF involvement can impact the ability to offer rooming-in to mothers post-discharge.

Figure 8 Rooming-In Ability



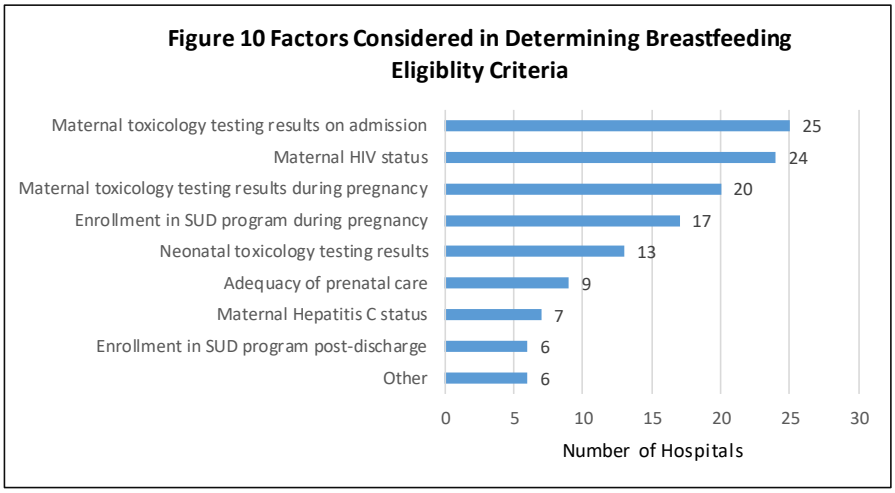
Multidisciplinary Care

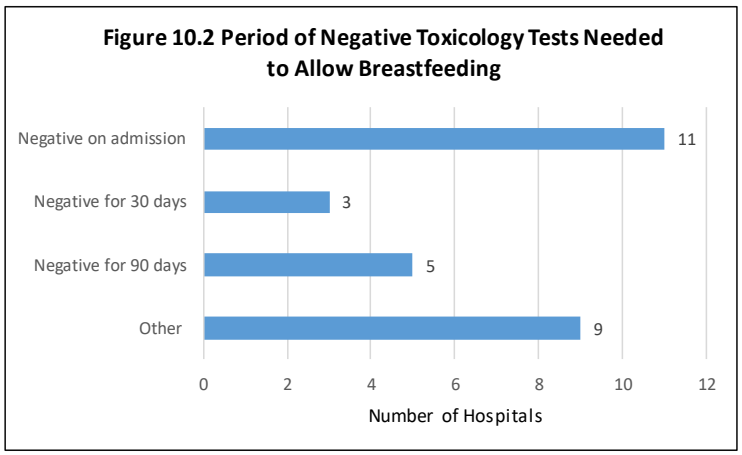
- There is a variety of staff routinely involved in the care of infants with NOWS. All hospitals reported the involvement of lactation consultants, while many hospitals included volunteer cuddlers, physical therapists, and occupational therapists. Less commonly reported were nutritionists, child life specialists and massage therapists.

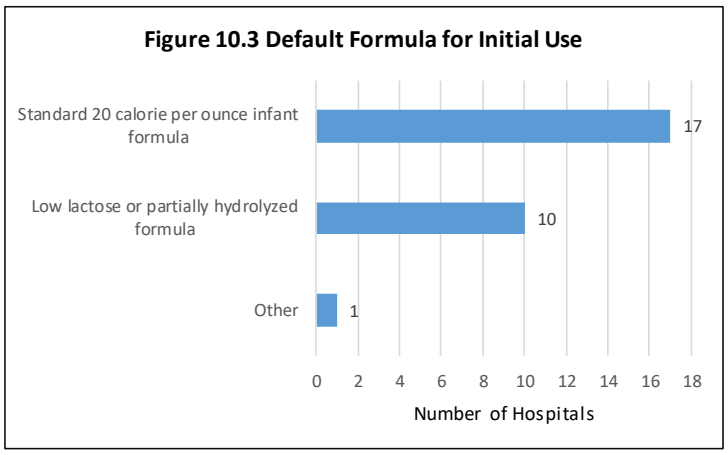


Breastfeeding and Formula Use

- Some variability exists among hospitals with regards to factors considered in considering infants eligible to receive their mother's own breastmilk. The most common factors identified were maternal HIV status and maternal toxicology results (Figure 10.1).
- The period of negative toxicology tests needed to support use of breast milk varied, although a minority of hospitals used 30 days or 90 days. Most used negative toxicology testing on admission, or criteria that varied depending on other factors (Figure 10.2).
- When formula was given, the majority of hospitals started with standard 20 calorie per ounce infant formula, and some started with low lactose or partially hydrolyzed formula (Figure 10.3).







Cannabis Use

- Most hospitals routinely screen pregnant women verbally for cannabis use (Figure 11.1), and include cannabis in toxicology testing panels (Figure 11.2).
- Most hospitals reported that cannabis use is a relative contraindication for breastfeeding, with a small number of hospitals reporting cannabis was not necessarily a contraindication (Figure 11.3). No hospitals reported cannabis to be an absolute contraindication for breastfeeding.

Figure 11.1 Hospitals that Routinely Screen for Cannabis Use Verbally - Regardless of SUD History

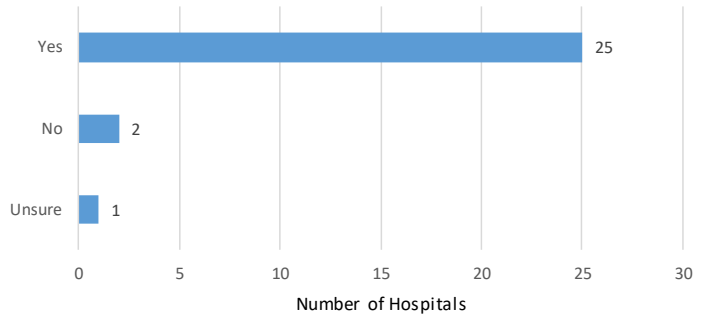


Figure 11.2 Hospitals that Include Cannabis in Toxicology Testing Panels

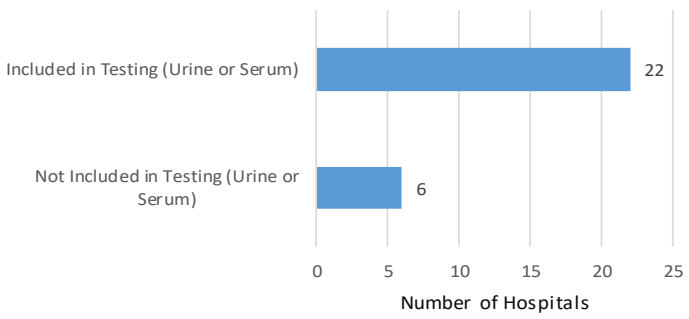
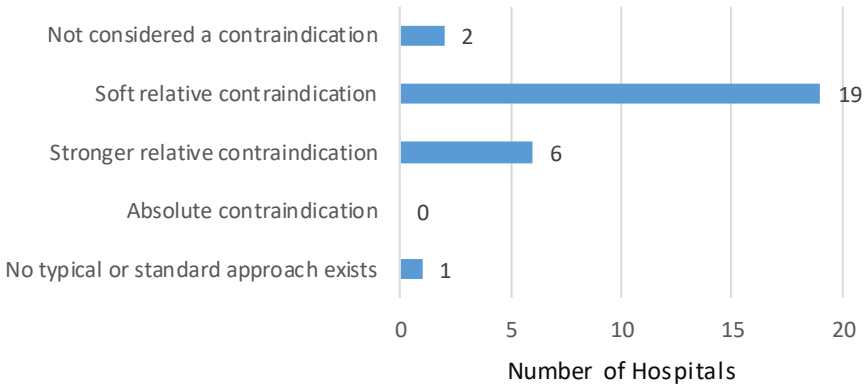
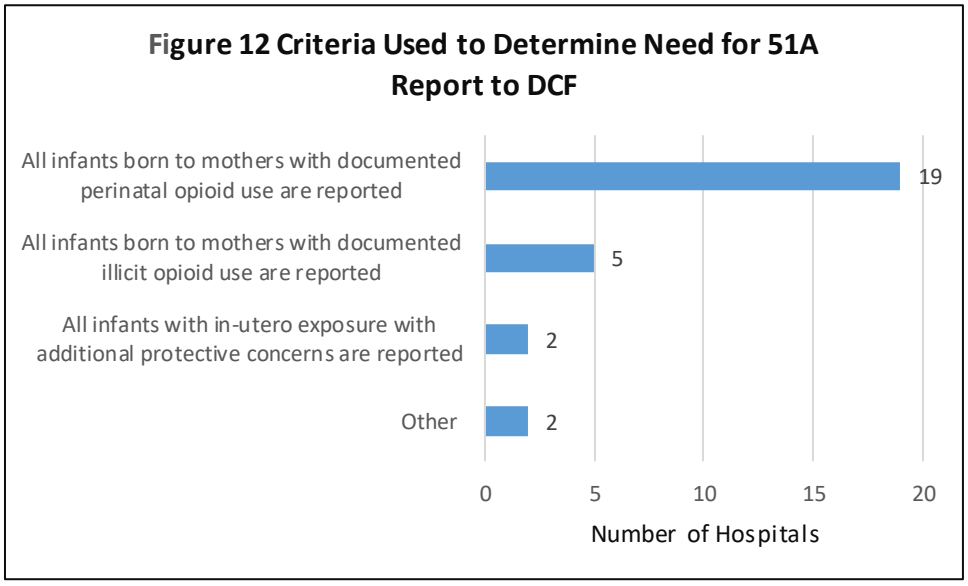


Figure 11.3 Hospital Approach to Breastfeeding when Mother Admits to Cannabis Use During Pregnancy



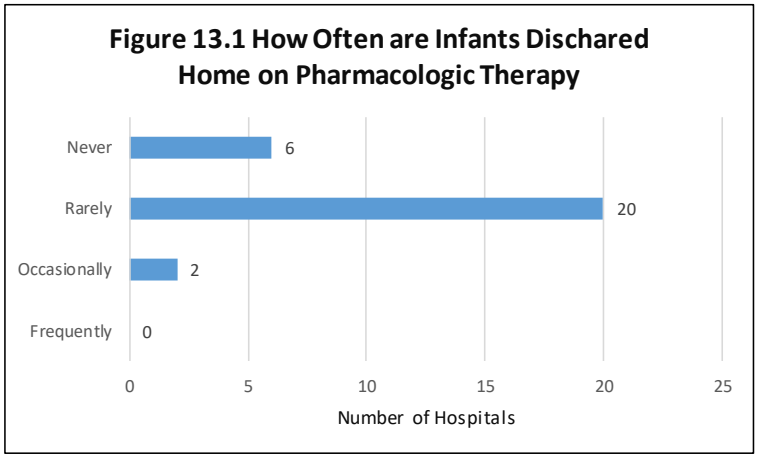
Notification to Department of Children and Families (Figure 12)

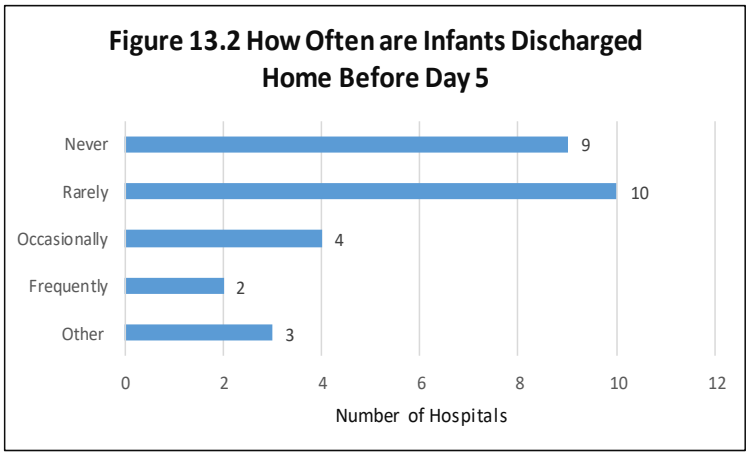
- The majority of hospitals notify DCF for all infants born to mothers with documented perinatal opioid use, with a small number notifying DCF only with illicit opioid use or for other protective concerns.
- In open-ended questions, hospitals report frustration of policies that require them to report on mothers in stable recovery. Hospitals also report different policies when DCF takes custody of the infant; some hospitals report DCF being solely responsible for facilitating visits or determining visitation recommendations, some hospitals report allowing rooming in after DCF takes custody, and some hospitals report hospital social workers are responsible for visits.

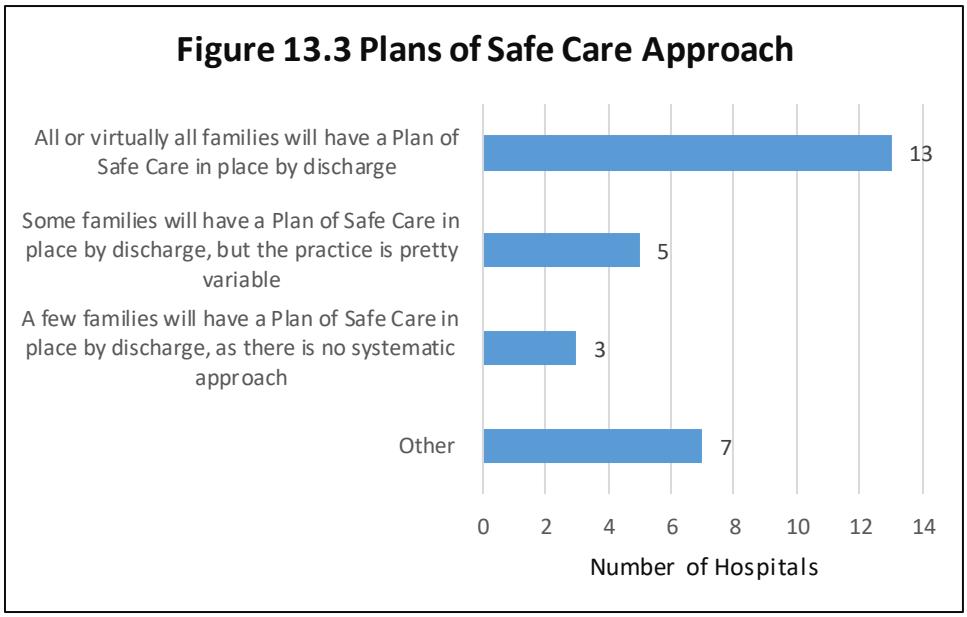


Discharge and Plans of Safe Care

- Most hospitals never or rarely discharge infants home on pharmacology therapy (Figure 13.1).
- For infants not requiring pharmacologic therapy for NOWS, most hospitals do not discharge home before day 5. Of responses under "occasionally" or "other," there have been telehealth pilots at a few hospitals for infants not receiving pharmacologic care (Figure 13.2).
- Almost half of hospitals have a Plan of Safe Care (POSC) process in place, while some hospitals have variable practice or have no systematic approach. Some hospitals are still working on a universal POSC approach, while others were uncertain of criteria for a POSC (Figure 13.3).

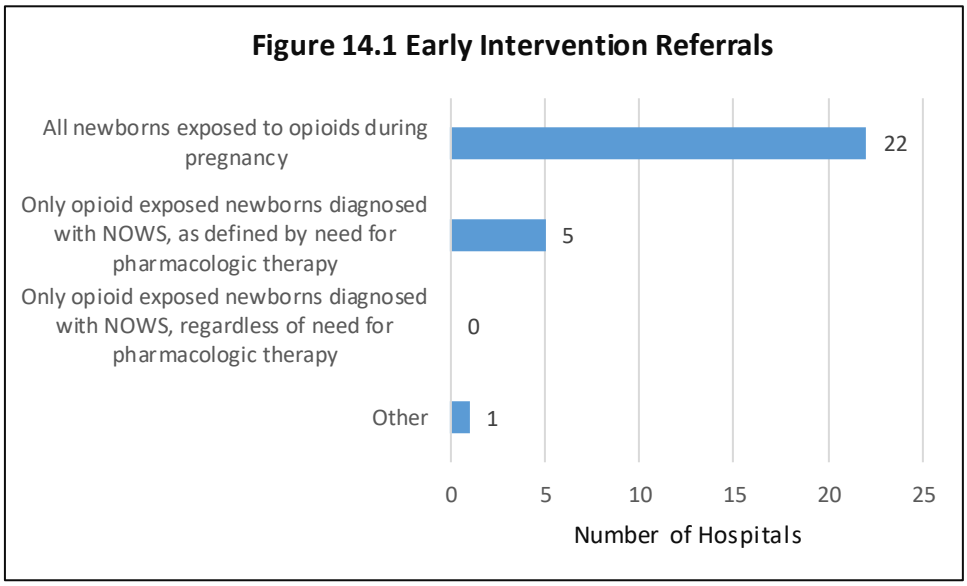


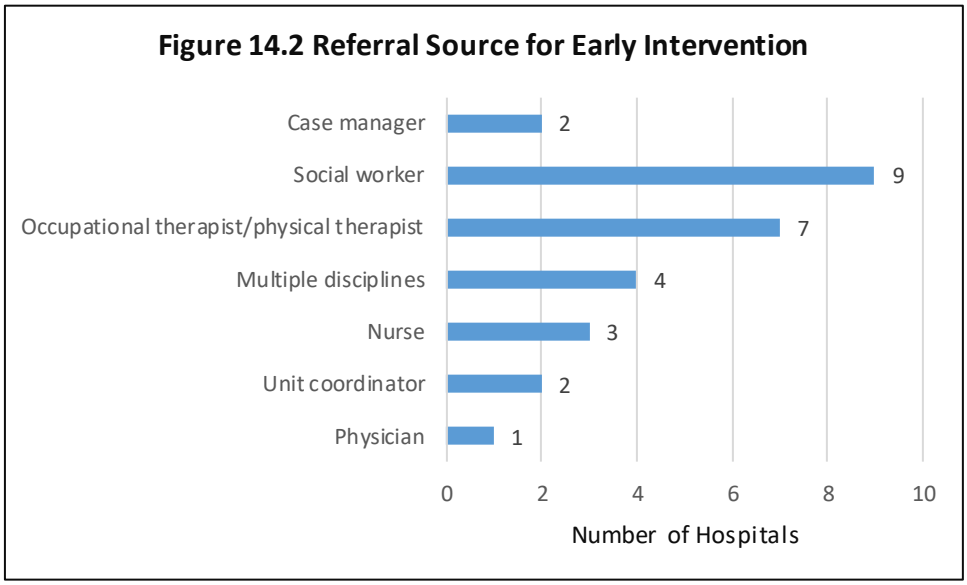




Early Intervention

- The majority of hospitals routinely refer all opioid-exposed newborns to Early Intervention (EI) (22 hospitals), while some only refer infants who receive an NOWS diagnosis (5 hospitals), and one hospital reported efforts to refer all opioid-exposed infants unless the guardian declines (Figure 14.1).
- There is a wide variety among staff members responsible for making EI referrals. According to this survey, most EI referrals are made by social workers, occupational therapists and physical therapists (Figure 14.2). Other staff that make EI referrals include nurses, physicians, case managers, and unit coordinators.





Conclusions

The results of this survey provide valuable insight into clinical practices around the care of families impacted by perinatal opioid use and infants at risk for NOWS in Massachusetts hospitals.

Several areas of practice are generally consistent across hospitals, including:

- having written policies regarding treatment of NOWS;
- supportive approaches to use of breastmilk;
- emphasis on non-pharmacologic care and rooming-in;
- the use of multidisciplinary teams to care for mothers with OUD and infants at risk for NOWS; and
- referrals to Early Intervention.

Comparison to previous surveys in 2017 and 2020 shows clear trends towards more consistent approaches in several areas of care, including non-pharmacologic care, use of ESC scoring tool rather than the Finnegan scale, support of rooming-in, and support of breastfeeding. These trends have undoubtedly improved care for families across the state.

Several areas of care continue to show variation that could offer opportunities for improvement, including:

- location of care for infants who require pharmacologic therapy;
- rooming-in availability across intensive care units;
- use of cardiac or oximetry monitoring for infants receiving pharmacologic therapy for NOWS; and
- plans of safe care implementation.

In addition, the open-ended questions showed continued requests for greater collaboration between providers and DCF, with particular questions around approaches to family involvement and rooming-in after DCF assumes custody of the infant, and the value of reconsidering reporting standards in situations of isolated cannabis use or prescribed opioid use.

Several potential areas of focus in applying the lessons learned from these survey results include:

1. continuing hospital efforts to support family-centered care, including greater capacity for rooming-in and use of non-pharmacologic techniques for treatment of NOWS;
2. greater efforts to partner with DCF and other state agencies to rethink optimal approaches to reporting and supporting families impacted by perinatal opioid use; and
3. new efforts to support the implementation around plans of safe care in a non-punitive, and non-stigmatizing approach.

We thank the hospitals of Massachusetts for their participation in this survey.