“Coming together is a beginning, keeping together is progress, working together is success.” Henry Ford
Why Neonatal Abstinence Syndrome (NAS)?

- **US incidence of NAS increased by 300% between 1999 to 2013 (1.5/1000 to 6/1000 per hospital births)**

- **Kansas incidence of NAS increased by 1350% between 2000-2014 (0.2/1000 to 2.9/1000 birth hospitalizations, most current 3.9/1000 in 2018).**

Incidence rate is lower than other states, however increase is much higher than the national average of 300%
How did the NAS initiative start?

NAS became a subcommittee under the Kansas Prescription Drug and Opioid Advisory Committee.
How did the NAS Initiative Start?

- August 2017: NAS Convening
- December 2017: NAS Subcommittee
- March 2018: Informational Webinar
- March - Sept: Center recruitment
- June 2018: Spring Cohort Launch
- June - Sept: Follow up with senior leaders
- October 2018: Fall Cohort Launch
- February 2018: NAS Leadership Meeting
Where we started -- baseline
Progress
Kansas Perinatal Quality Collaborative’s Neonatal Abstinence Syndrome Initiative

**AIM STATEMENT**

By Oct 2020:
* 85% of all Kansas birth centers enrolled in VON NAS Universal Education will achieved “Center of Excellence” designation
* Less that 50% of infants at risk for NAS will be directly admitted to the NICU
* Number of infants at risk for NAS requiring pharmacological treatment will decrease by 25%
* LOS for Kansas infant pharmacologically treated will decrease by 2 days

**PRIMARY DRIVERS**

- Champions for each center identified (VON champion/Data collector/Physician or team leader) – could be the same person in smaller centers
- VON Universal Education rolled out through champions at each center
- Educational information concerning center of excellence designation
- VON learner progress reports, tips for completion
- Education on VON state toolkit resources and practice building guidelines

**INTERVENTIONS**

- Support Centers in VON Education, Standardizing Care Guidelines
- VON Universal Training (NAS Education and State Tool Kit)
- KPQC Learning Forum Webinars
- Data collection and QI education
- KPQC Regional Workshops
- KPQC General Meetings

- KPQC reviews VON progress on monthly basis with participating Centers
- KPQC facilitates resources for Centers, educational updates
- KPQC aids navigation of VON state site and Center sites
- KPQC facilitates state data reporting, monthly data reports via Learning Forums and KPQC website

- Centers have access to VON/State tool kits and support from KPQC to work locally in development/implementation of standardized care practices
  - Initial Webinar VON Launch (June & October 2018)
  - Centers supported with monthly Learning Forum webinars
  - Initial Learning Forums focused on navigating Kansas state site and outlining 8 PBP
  - Jan-Aug 2019 Learning Forums focused on didactics on each of best practices, peer experience and data collection
  - Further Learning Forums directed by needs of the group
  - Some experts to present in webinars (PT/OT/Pharm) etc.

- Dynamic data collection in which data entering process provides QI direction and real time feedback
- Data support and education for centers
- Data processing for individual centers and unidentified comparisons for all centers

- Face to face meetings with participants from regional areas within Kansas
  - Give direct support for QI processes and detailed education on best practices in which centers require support
  - General meetings focusing on QI and best practice implementation
  - Initial Workshops occurred after preliminary work was done by each center through webinar and direct support
  - Phase two workshops address compassionate care, advanced protocol building

**Key Performance Measures:**
- Direct admits to NICU
- % pharm treatment
- LOS for those pharm treated
- Transfers to referral center for infant at risk or with NAS
Education, QI and Policy Foundation

Monthly KPQC Learning Forums
  • Launched October 2018

Fall 2018 General KPQC Meeting
  • First general meeting of KPQC in Kansas City; November 2018

Regional Workshops
  • Focused on NAS policy building, “Potentially Better Practices” and QI techniques
  • December 2018 in Kansas City, Wichita, Dodge City

Spring 2019 General KPQC Meeting
  • May 2019 in Wichita
Education, QI and Policy Foundation

Fall 2019 General KPQC Meeting
• November 2019 in Kansas City

Eat, Sleep, Console Training in Dartmouth for KPQC team
• October 2019

Regional Eat, Sleep, Console Training
• March 9 & 10, 2020 in Kansas City
• Virtual Didactic Training May 6, 2020
• Simulation Training July 21, 2020 in Wichita

Summer 2020 General KPQC Meeting
• Virtual July 2020
Education, QI and Policy Foundation

KPQC Learning Forums

• Initially covered “Better Practices” in caring for infants at risk for NAS
  • Standard Infant and Maternal Screening
  • Standard Approach to Caring for the NAS at Risk for NAS
  • Compassionate Care and Trauma Informed Care
  • Standardized Breastfeeding Policy
  • Non-pharmacological Care and Engaging Families
  • Standardized Pharmacological Treatment
  • Safe Discharge
Education, QI and Policy Foundation

- Developing an NAS Program in a Rural Center
- NAS Standard Coding for Kansas
- NAS Scoring Series
  - NAS Pathophysiology and Symptoms
  - Modified Finnegan and Finnegan Symptom Prioritization Scoring
  - Eat, Sleep, Console Model of Care
- Feeding techniques to improve feeding in the infant with NAS
- NAS Case Studies
- Infant Massage to comfort the NAS infant

- KPQC COVID Learning Forums
  - Maternal surveillance in the prenatal and post partum patient
  - Neonatal care of the newborn of a COVID positive mother
Pregnant Women with Suspected COVID or Confirmed COVID (identified by admission testing or testing for suspicion)

COVID-19 negative and asymptomatic
- Discharge: Routine follow up; Maternal and Newborn

COVID-19 positive; asymptomatic
- Postpartum asymptomatic women should be monitored closely for development of COVID symptoms postpartum
  - Consider ultrasound surveillance
  - Consider antenatal testing
  - Monitor for blood clot formation
  - Evaluate lab abnormalities

COVID-19 positive and/or symptomatic
- Fever, chills, muscle pain, sore throat, headache, loss of taste, shortness of breath.
- May also have preeclampsia-like symptoms; high blood pressure, elevated liver enzymes, low platelets.
  - Ultrasound surveillance
  - Antenatal testing
  - Monitor for blood clot formation

Social Services consult to evaluate need for family services

Maternal Obstetric follow up; clinic or telemedicine
- Symptoms of COVID
- Blood pressure, pulse oximetry
- Symptoms of blood clot; Stroke, PE, DVT

MCH Referral for education, support services, case management

Newborn Pediatric follow up; clinic or telemedicine
- Decreased vigor
- Decreased feeding
- Respiratory Distress
- Cyanosis
- Weight loss

MCH Referral for education, support services, case management

Local Public Health Referral
- Local Maternal Child Health (MCH) services referral
  (https://kdhe.maps.arcgis.com/apps/opsdashboard/index.html#/ff50a13177fc465ab96f333d4dc26a5f)
  - Screening/Assessment
  - Home Visiting
  - Education
  - Referrals to community services (e.g., behavioral health, social services, basic needs)
- Helpline: 1-800-CHILDREN
  https://www.kcsl.org/ParentHelpLine.aspx
  (non-crisis/non-clinical; for providers, parents, public)

State COVID-19 Websites/Resources
- KDHE COVID-19 Resource Center
  https://www.coronavirus.kdheks.gov/
- Kansas COVID-19 Response & Recovery Center
  https://covid.ks.gov/
- Kansas Children’s Cabinet & Trust Fund (targeted to families and early childhood providers)
  https://kschildrenscabinet.org/
Standardization for Kansas

NAS Coding

Partnered with Council of State and Territorial Epidemiologists (CSTE) for standardized NAS coding definitions for Kansas.
Definition of NAS

- CSTE defines **confirmed, probable** or **suspect NAS**
- There is a use of “diagnosis of NAS, or chief complaint of NAS, or a clinically compatible presentation of 3 or more signs of withdrawal” in the definition
- It is difficult for clinicians to be consistent with their diagnosis, when the actual diagnosis is used in the definition.
- We propose use of the Florida definition of NAS for Kansas.
- To be the true NAS code 96.1
  - Documented or known exposure to opioid, benzo or barbiturate
  - Signs of NAS requiring some care different than routine observation:
    - Medical treatment or
    - Prolonged hospital stay for comfort cares beyond normal observation period:
      - 72 hours: exposure to short acting opiate
      - 5 days: exposure to long acting opiate
    - Excessive need for comfort cares during hospitalization (i.e. 24/7 holding)
- Always start with the known exposure code
Exposure Codes

- These ICD-10-CM codes were new in October 2018 to designate in utero exposure:
  - P04.14 Newborn affected by maternal use of opiates
  - P04.17 Newborn affected by maternal use of sedative-hypnotics
  - P04.1A Newborn affected by maternal use of anxiolytics
  - P04.11 Newborn affected by maternal antineoplastic chemotherapy
  - P04.12 Newborn affected by maternal cytotoxic drugs
  - P04.13 Newborn affected by maternal use of anticonvulsants
  - P04.14 Newborn affected by maternal use of opiates
  - P04.15 Newborn affected by maternal use of antidepressants
  - P04.16 Newborn affected by maternal use of amphetamines
  - P04.17 Newborn affected by maternal use of sedative-hypnotics
  - P04.1A Newborn affected by maternal use of anxiolytics
  - P04.18 Newborn affected by other maternal medication
  - P04.19 Newborn affected by maternal use of unspecified medication
  - P04.41 Newborn affected by maternal use of cocaine
  - P04.3 Newborn affected by maternal use of Alcohol
  - P04.2 Newborn affected by maternal use of tobacco
  - P04.42 Newborn affected by maternal use of hallucinogens
  - P04.49 Newborn with exposure to methadone, at risk for methadone withdrawal
  - P04.9 Intrauterine drug exposure ------ write in drug if not one of the above
Which Codes to Use?

• P04.xx Codes to be used when:
  • There is a known exposure (history or drug screen)
  • No clinical signs of withdrawal
  • Classified as “suspect” (exposure) by CSTE

• P04.xx Codes to be used when:
  • There is a known exposure (history or drug screen)
  • Clinical signs of withdrawal
  • No exposure to narcotics, benzos or barbiturates
  • Classified as “suspect” (exposure) by CSTE

• P04.xx and 96.1 Codes to be used when:
  • There is a known exposure (history or drug screen)
  • Clinical signs of withdrawal
  • Yes exposure to narcotics, benzos or barbiturates
  • Classified as “possible or confirmed NAS” by CSTE
Which Exposures Could be P96.1 and P04.xx

• Could possibly be coded as 96.1:
  • P04.14 Newborn affected by maternal use of opiates
  • P04.17 Newborn affected by maternal use of sedative-hypnotics
  • P04.1A Newborn affected by maternal use of anxiolytics
  • P04.13 Newborn affected by maternal use of anticonvulsants

• Cannot be coded as 96.1:
  • P04.11 Newborn affected by maternal antineoplastic chemotherapy
  • P04.12 Newborn affected by maternal cytotoxic drugs
  • P04.15 Newborn affected by maternal use of antidepressants
  • P04.16 Newborn affected by maternal use of amphetamines
  • P04.18 Newborn affected by other maternal medication
  • P04.19 Newborn affected by maternal use of unspecified medication
  • Any others
CSTE Definitions

- Confirmed NAS; code 96.1
  - + infant drug screen for opioids, benzos or barbiturates
  - Symptoms requiring increased care (as defined slide 1)

- Probable NAS; code 96.1
  - History of exposure to above or + maternal drug screen for opiates, benzo or barbiturates
  - Negative infant drug screen
  - Symptoms requiring increased care (as defined slide 1)

- Suspected NAS; coded by exposure code P04.xx
  - All other drug exposures with or without symptoms
  - Exposure to opioids, benzo or barbiturates without significant symptoms
Current Progress
KPQC Birth Centers Impact on NAS Care

Center Initiatives

Allen County Regional Hospital*
  • VON Center of Excellence
  • Updated NAS Policies

Citizens Medical Center
  • VON Center of Excellence

Community Healthcare System of NE Kansas
  • VON Center of Excellence
  • Implementing Eat, Sleeps and Consoles Model of Care

Community Memorial Healthcare
  • VON Center of Excellence
  • Drug Screening Policy
KPQC Birth Center Impact on NAS Care

Geary County Hospital*
  • VON Center of Excellence
  • Attending Eat, Sleep, Console Training

Hiawatha Community Hospital*
  • VON Center of Excellence
  • Craft screening; initial OB visit, 3rd trimester, admission
  • Standardized Medication Screening Questions at 36wk Pre-registration visit
  • Standard UDS Collection Process for clinic and OB department
  • Standard Cord-stat Collection Process
  • NAS Educational Pamphlet provided to all identified mother’s in clinic
  • NAS Care Protocol, increased LOS to 72 hours at risk infants
  • Currently working on: editing Breastfeeding Protocol, PRN Morphine Treatment Protocol, ESC implementation decision
KPQC Birth Center Impact on NAS Care

Hays Medical Center
- Working toward VON Center of Excellence; goal by Aug 1st
- Attending Eat, Sleep, Console Training

Hutchison Medical Center
- Working towards VON Center of Excellence
- Drug Screening Policy
- Standardized NAS Education using the Modified Finnegan Tool

Kansas Midwives Alliance
- VON Center of Excellence

Kearny County Hospital*
- VON Center of Excellence
- Drug screening policy
- Attending Eat, Sleep, Console Training
KPQC Birth Center Impact on NAS Care

Labette Health
- VON Center of Excellence

Lawrence Memorial Hospital
- Working towards VON Center of Excellence
- NAS Scoring Policy in place

Memorial Health System
- Working towards VON Center of Excellence

Menorah Medical Center
- VON Center of Excellence
KPQC Birth Centers Impact on NAS Care

Nemaha Valley Community Hospital
- Working towards VON Center of Excellence
- Infant Screening Policy
- NAS Care Policy

Neosho Memorial Regional Medical Center*
- VON Center of Excellence
- Maternal and Infant Screening Policy
- Attended Eat, Sleep, Console Training

Newman Regional Health*
- VON Center of Excellence
- Attended Eat, Sleep, Console Training
- NAS Care Policy Implemented
KPQC Birth Centers Impacting NAS Care

Olathe Medical Center
  • Working towards VON Center of Excellence

Advent Health-Ottawa
  • VON Center of Excellence

Overland Park Regional Medical Center*
  • Previous VON Center of Excellence, education for new learners
  • Attended Eat, Sleep, Console Training
  • Active Leader on KPQC Learning Forums

Rooks County Hospital
  • VON Center of Excellence

Salina Regional Health Center*
  • Working towards VON Center of Excellence
  • Attending Eat, Sleep, Console Training
KPQC Birth Centers Impacting NAS Care

Advent Health Shawnee Mission*
  • Previous VON Center of Excellent, maintained with learners
  • Updated NAS policies, PRN morphine
  • Leader on KPQC Learning Forums
  • Eat, Sleep, Console study participant

Southwest Medical Center
  • Working toward VON Center of Excellence

Stormont Vail Health*
  • VON Center of Excellence
  • Leader of KPQC Learning Forums
  • Attended Eat, Sleep, Console training
KPQC Birth Centers Impacting NAS Care

Susan B Allen Memorial Hospital
  • Working towards VON Center of Excellence

University of Kansas Health System*
  • VON Center of Excellence
  • Standardized NAS Education
  • Eat, Sleep, Console study participant

University of Kansas Health System, St. Francis*
  • VON Center of Excellence
  • Attended Eat, Sleep, Console training

Via Christi Hospital, Manhattan
  • VON Center of Excellence
  • NAS Care Policy Implementation
KPQC Birth Centers Impact on NAS Care

Via Christi Hospital, St. Joseph
  • VON Center of Excellence

Wesley Medical Center*
  • VON Center of Excellence
  • Maternal and Newborn drug screening policy
  • Eat, Sleep, Console Implementation throughout Center
  • Prenatal Consulting program
  • KPQC Learning Forum leader

Western Plains Medical Center*
  • VON Center of Excellence
SMART AIM 1

By October 2020, 85% of all Kansas birth centers enrolled in VON NAS Universal Training Program will have achieved “Center of Excellence” designation.
Vermont Oxford NAS Education
SMART AIM 2

By October 2020, less than 50% of infants at risk for NAS will be directly admitted to the NICU
Direct Admission to the NICU

Peak Direct Admission to the NICU Dec 2018; 20%. Have maintained NICU Direct Admission at 0 to 8% over past year.
SMART AIM 3

By October 2020, the number of infants at risk for NAS who require pharmacological treatment will decrease by 25%
Pharmacological Treatment

Peak months:
- Nov 2018: 12%
- Mar 2019: 13%
- March 2020: 19%
Currently 3% in June. Trend for past 3 months 5.7%, overall trend for 24 months 7.2%
SMART AIM 4

By October 2020, the LOS of Kansas infants with NAS treated pharmacologically will decreased by 2 days
Average Length of Stay for Pharmacological Treatment

Peak LOS 46 days in Aug 2019. Important to look at average LOS over time.
Average LOS downward trend over 1st quarter 2020; 21.5 days, 2nd quarter 2020 18.6 days
Transfer for at Risk/Treatment

3. At-risk infants transferred for risk (%)

Transfer for at Risk 5% in March 2020, had been 0% since November.

4. At-risk infants transferred for treatment (%)

Transfer for treatment 0% since April 2019.