



**MASSACHUSETTS**  
HEALTH POLICY COMMISSION

# **Health Policy Commission Investments in NAS**

**Updated: March 13, 2017**



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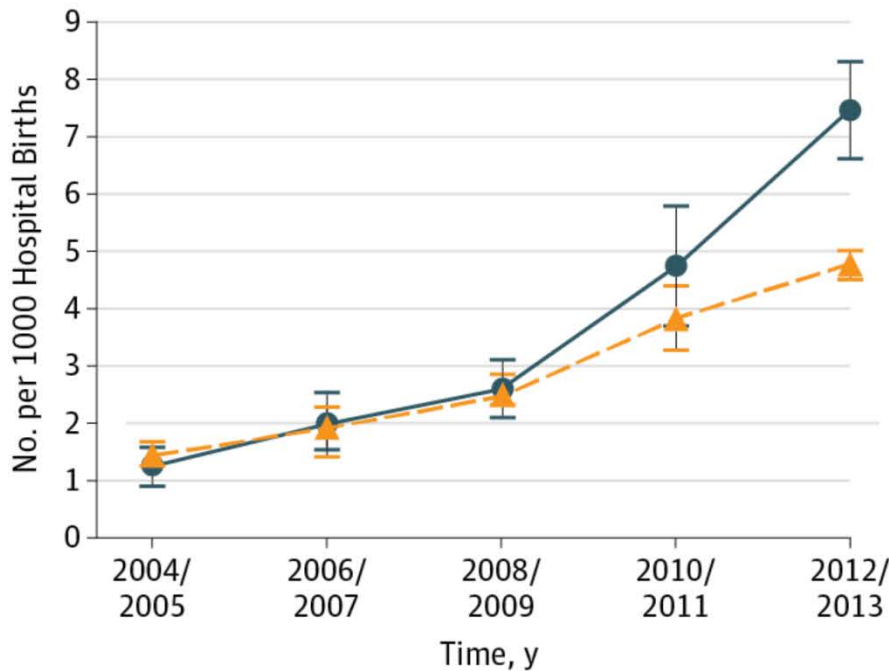
## **AGENDA**

- NAS volume
- HPC investments in NAS
- NAS awardee details

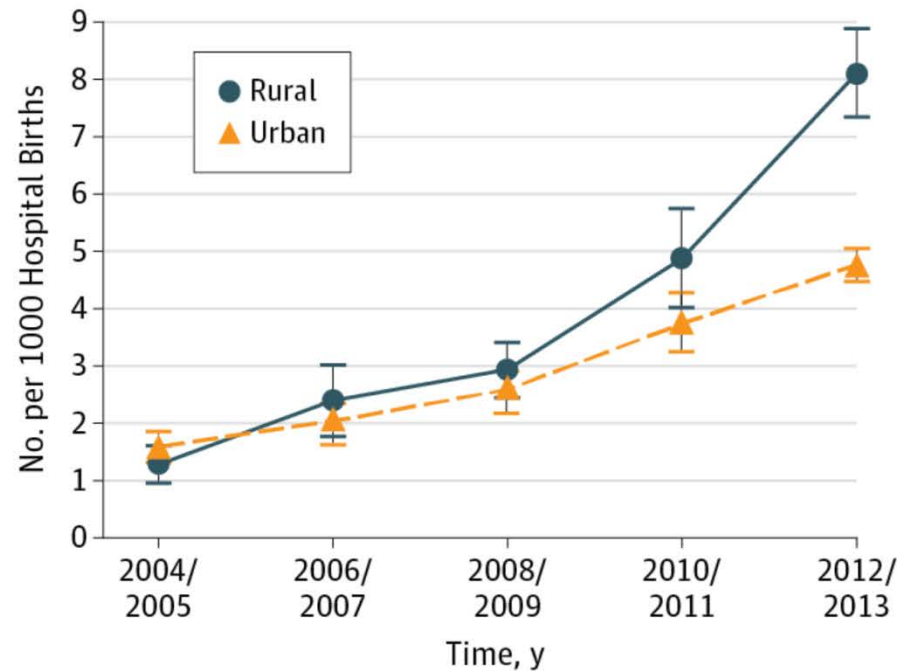
# Nationally, the rate of NAS is increasing most quickly in rural areas

## Rural and Urban Differences in Neonatal Abstinence Syndrome and Maternal Opioid Use, 2004 to 2013

**A** Neonatal abstinence syndrome

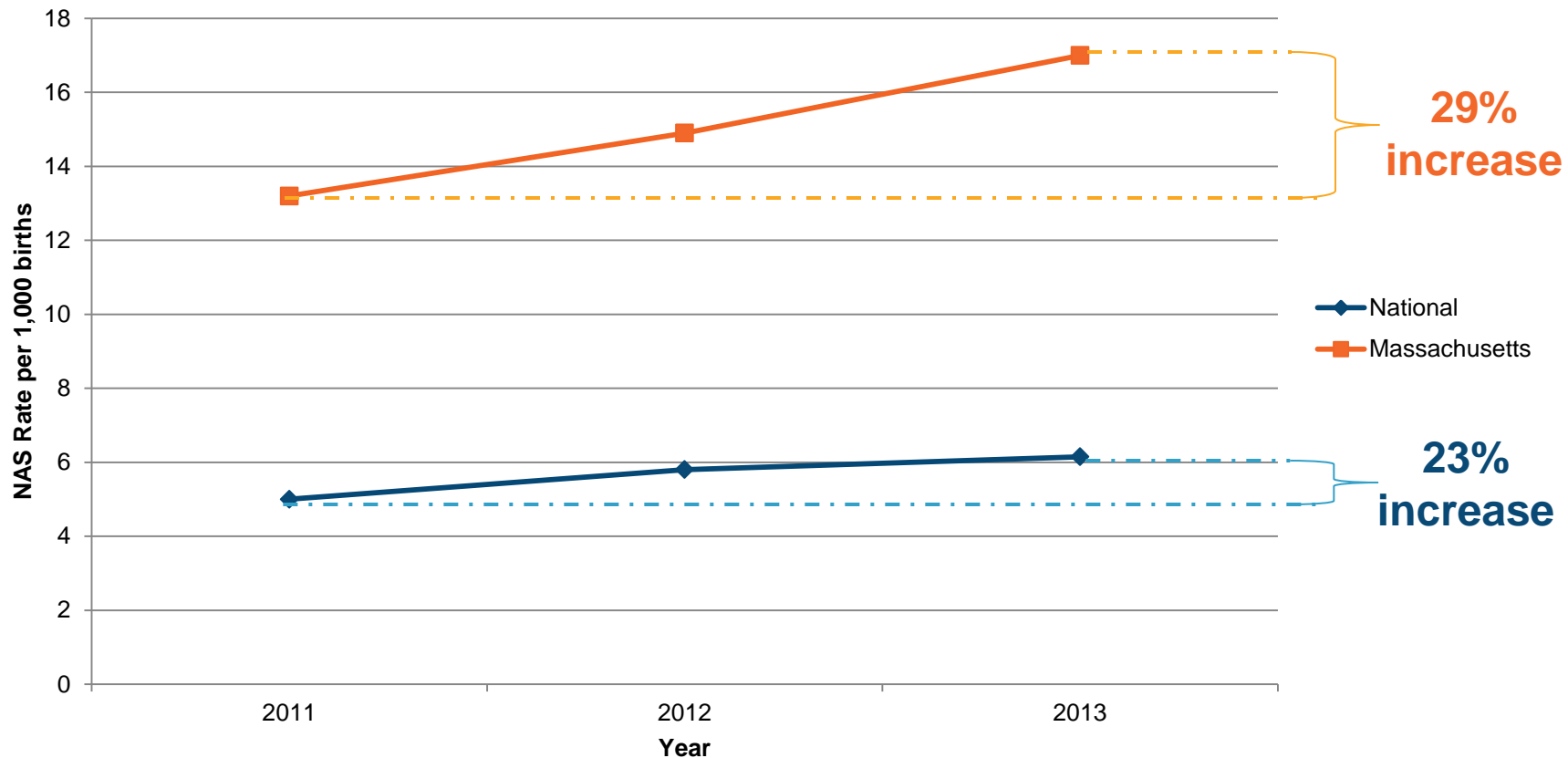


**B** Maternal opioid use



# NAS is increasing more rapidly in Massachusetts than nationally

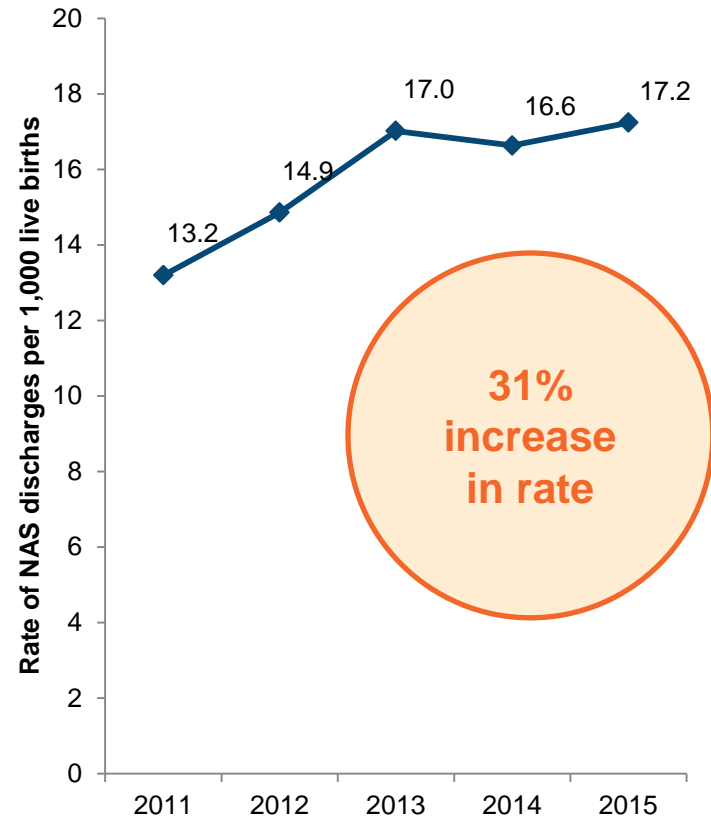
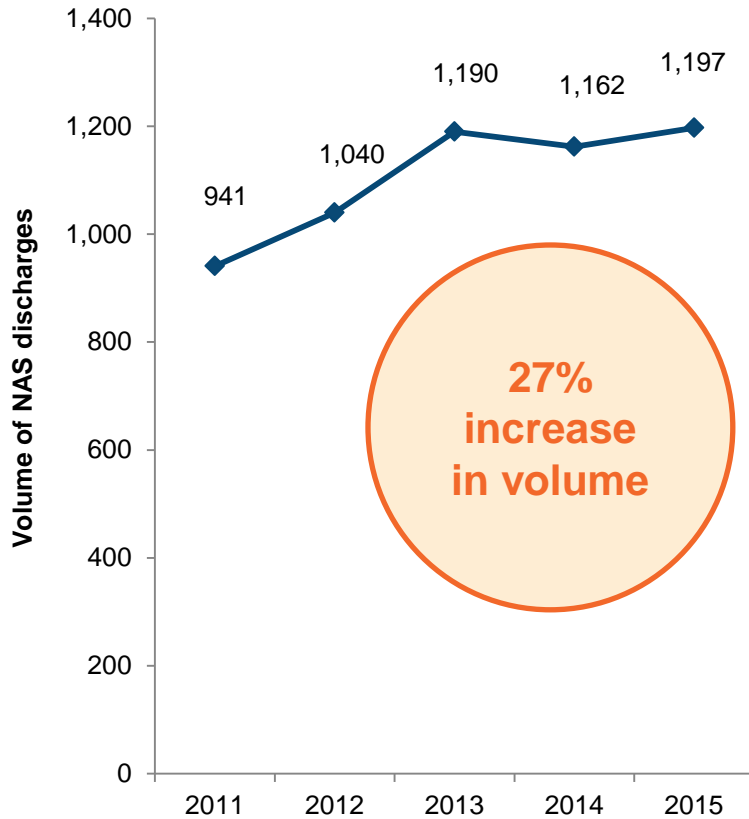
## National vs. Massachusetts trends in NAS births (2011-2013)



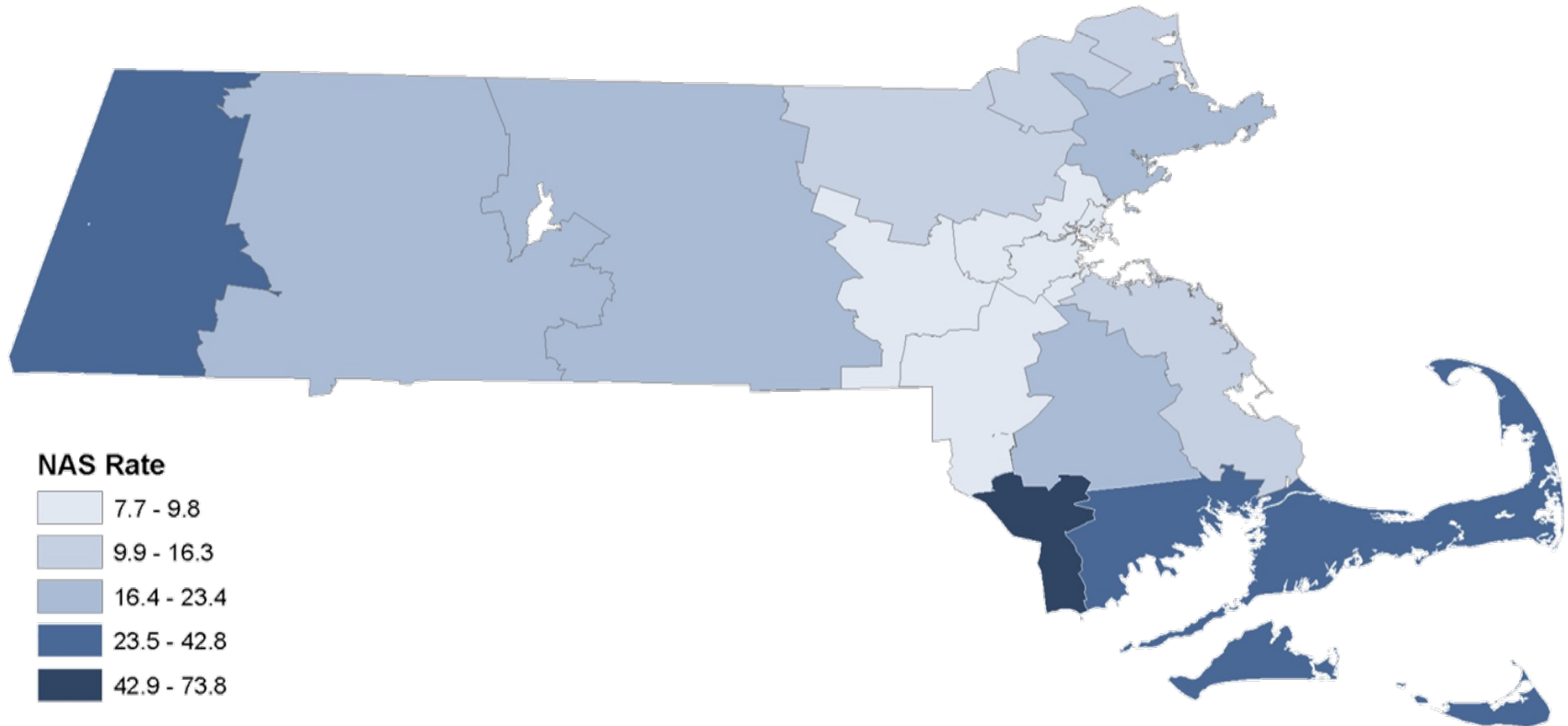
Notes: Generated using HPC analysis of Center for Health Information and Analysis, Inpatient Discharge Database 2011-2015 and Ko JY, Patrick SW, Tong VT, Patel R, Lind JN, Barfield WD. Incidence of Neonatal Abstinence Syndrome — 28 States, 1999–2013. MMWR Morb Mortal Wkly Rep 2016;65:799–802. DOI: <http://dx.doi.org/10.15585/mmwr.mm6531a2>

NAS discharges were identified using ICD-9-CM diagnosis code 779.5 (drug withdrawal syndrome in a newborn).

# NAS increased significantly in Massachusetts between 2011 and 2015



# Rate of NAS discharges per 1,000 live births, by HPC region, in 2015



Source: HPC analysis of Center for Health Information and Analysis, Inpatient Discharge Database 2015

Notes: NAS discharges were identified using ICD-9-CM diagnosis code 779.5 (drug withdrawal syndrome in a newborn).

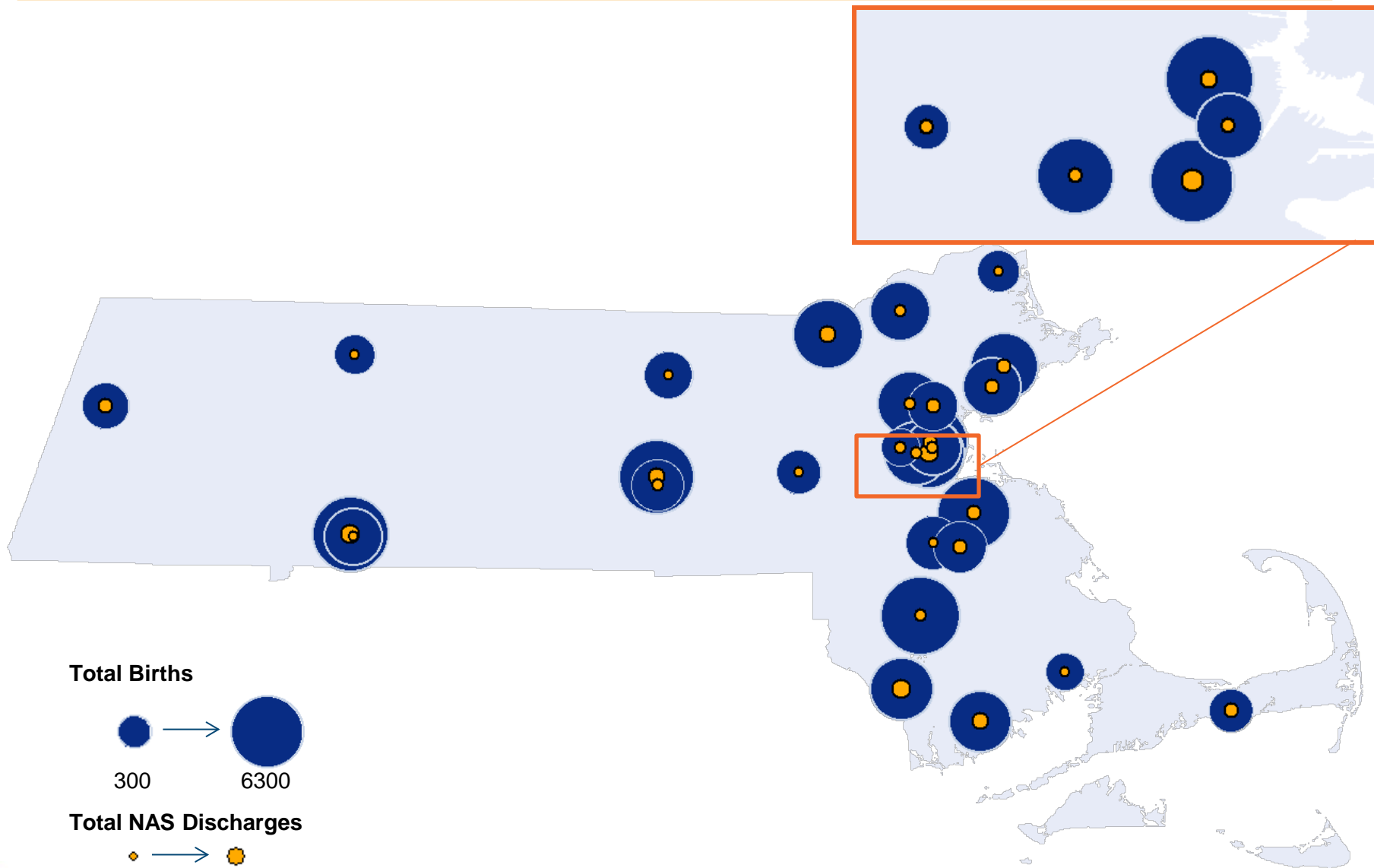
# 2015 NAS discharges by hospital volume



Source: HPC analysis of Center for Health Information and Analysis, Inpatient Discharge Database 2015

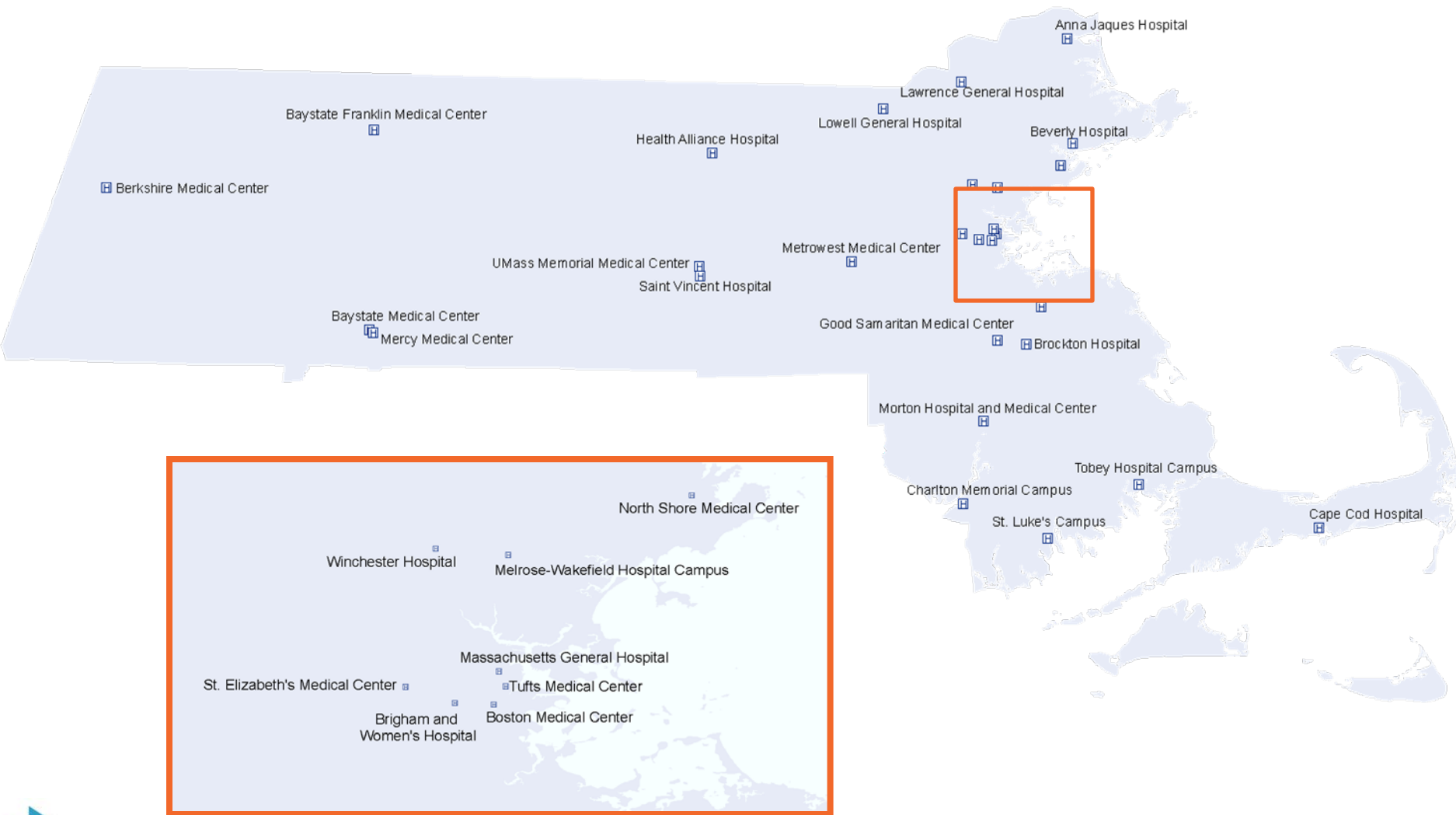
Notes: NAS discharges were identified using ICD-9-CM diagnosis code 779.5 (drug withdrawal syndrome in a newborn). Only includes hospitals with 12 or more NAS discharges.

# 2015 NAS discharges by hospital volume, relative to total obstetric volume

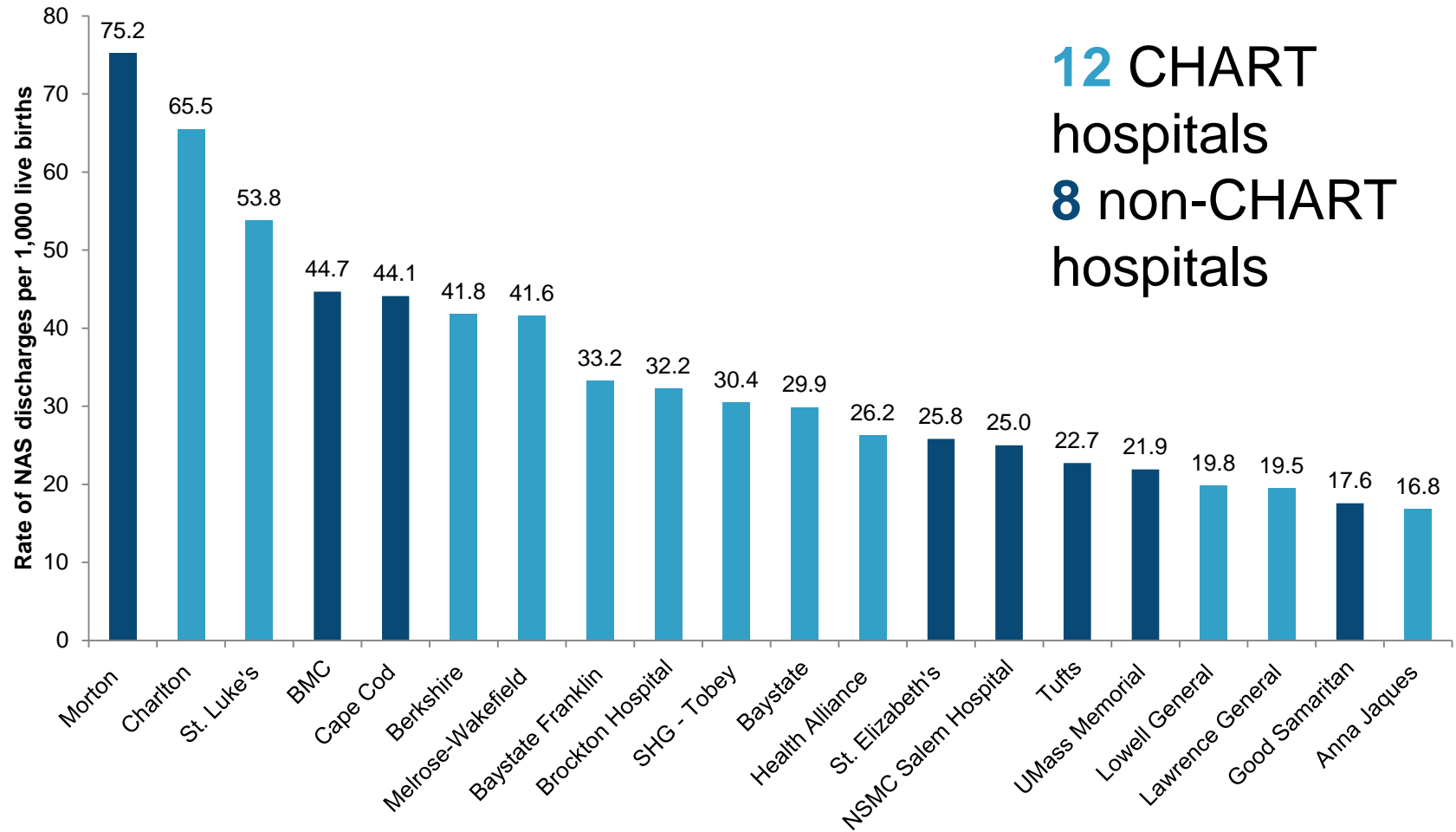




# Hospital names (associated with preceding NAS volume maps)



# MA hospitals with highest rate of NAS in 2015



**12** CHART hospitals  
**8** non-CHART hospitals

Source: HPC analysis of Center for Health Information and Analysis, Inpatient Discharge Database 2015

Notes: NAS discharges were identified using ICD-9-CM diagnosis code 779.5 (drug withdrawal syndrome in a newborn). Only includes hospitals with 12 or more NAS discharges.



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# Overview of HPC's Mother and Infant-Focused NAS Interventions

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**6 initiatives**

Funded by the HPC

**\$3,000,000**

HPC funding

**59 Organizations**

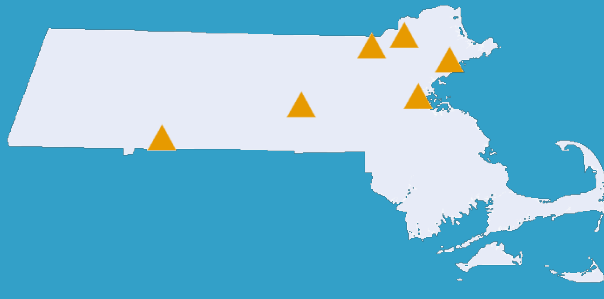
(e.g. hospitals, primary care practices, behavioral health providers) collaborating

**>450 infants with NAS**

Collectively treated by HPC's proposed awardees in 2015

**Initiatives span the Commonwealth:**

From Springfield to Middlesex County



**>\$5,000,000**

combined investment with 30% of initiative costs being contributed by the applicants

# Aligning with and expanding on DPH's initiative allows for interventions to be applied across broader spectrum of continuum



**HPC Pilot Program**  
\$1,000,000



**DPH "Moms Do Care"**  
\$3,000,000



**HPC Extension and Expansion of DPH Intervention**  
\$2,000,000



# Stage of Intervention for Massachusetts Funding Sources to Address Neonatal Abstinence Syndrome



## HPC Pilot Program

**Funds:** \$1,000,000

**Source:** State appropriation & HPC's Distressed Hospital Trust Fund

**Awardees:** Baystate Medical Center, UMass Memorial, Boston Medical Center, Lawrence General

Proposed HPC Funding through CHART Investment Program to expand on DPH work \$2,000,000

# Stage of Intervention for Massachusetts Funding Sources to Address Neonatal Abstinence Syndrome



**DPH “Moms Do Care” Program**

**Funds:** \$3,000,000  
**Source:** Federal SAMHSA Grant  
**Awardees:** Cape Cod and UMass Memorial Health Systems

# Stage of Intervention for Massachusetts Funding Sources to Address Neonatal Abstinence Syndrome



HPC Pilot Program  
Funded through FY16  
State Budget  
\$1,000,000

**Funds:** \$2,000,000  
**Source:** HPC's Distressed Hospital Trust Fund  
**Awardees:** Beverly Hospital, Lowell General Hospital

**HPC  
Expansion &  
Extension of DPH  
Intervention**



## HPC's NAS grantee activity

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HPC is investing in both inpatient quality improvement initiatives to address treatment of infants with NAS, and outpatient efforts to increase adherence to pharmacologic treatment among pregnant and post-partum women with opioid use disorder (OUD). HPC's 6 hospital grantees have begun work to achieve the following aims.

### **Inpatient activity:**

- Facilitate “rooming-in” for eligible women & infants
- Increase breastfeeding rates
- Facilitate early initiation of skin-to-skin contact after birth
- Provide bedside psychotherapy to women after birth
- Increase # of infants discharged to biological family
- Make EI referral prior to discharge
- Treat infants in need of pharmacologic intervention with methadone instead of morphine

### **Outpatient activity:**

- Screen pregnant women for OUD at first prenatal appointment
- Increase engagement in and adherence to pharmacologic treatment during pregnancy among women with OUD
- Provide same-day co-located BH and prenatal care
- Provide social supports to facilitate access to treatment (e.g., childcare, transportation)
- Improve post-discharge follow up with EI, pediatrics, and addiction treatment provider

## HPC's NAS hospital grantees & extension of DPH's MDC initiative

2 HPC grantees are implementing both the inpatient quality improvement intervention, and interventions that target pregnant and post-partum women with OUD to increase engagement in, and adherence to, pharmacologic treatment. This replicates a SAMHSA grant currently operated by DPH at UMass Memorial and Cape Cod Health Systems, called *Moms Do Care*.

Grantee	Award	Total initiative cost	Expanding DPH's MDC initiative?	2015 NAS volume	Primary Aim
<b>Baystate Medical Center</b>	\$249,778	\$400,481	No	119	Increase rate of rooming-in by 30%
<b>Boston Medical Center</b>	\$248,976	\$357,053	No	110	Reduce LOS by 40%
<b>UMass Memorial Medical Center</b>	\$249,992	\$354,794	No	81	Reduce LOS by 30%
<b>Lawrence General Hospital</b>	\$250,000	\$677,719	No	28	Reduce the cost of NAS episode by 10%
<b>Beverly Hospital</b>	\$1,000,000	\$1,266,962	Yes	35	Increase retention in treatment by 20%
<b>Lowell General Hospital</b>	\$999,032	\$1,451,364	Yes	46	Increase utilization of pharmacologic treatment by 20%

# Technical assistance and evaluation of investments in pregnancy and postpartum interventions (supported through an ISA with DPH)

## TECHNICAL ASSISTANCE (EXAMPLES)

- Training providers and support staff on trauma-informed care and stigmatizing attitudes and speech
- Training for PCPs, family practice, and OB/GYNs on buprenorphine prescribing to increase number of providers waived to prescribe
- Training OB/GYNs and affiliated support staff on best practices around treatment of pregnant women with OUD
- Development of web-based toolkit for OB/GYNs addressing OUD
- Training peer moms as recovery coaches (e.g., ethics, compassion fatigue, privacy)
- Parenting and nurturing classes for women with OUD
- Providing care management support for providers

## EVALUATION (EXAMPLES)

### Individual level:

- Rates of illicit drug use
- Rates of program retention
- Changes in functional status level
- Changes in housing stability
- Rates of PTSD symptoms

### System level:

- Number of waived providers
- Rates of identifying and engaging pregnant women with OUD
- Expressed stigmatizing beliefs and attitudes among providers
- Level of behavioral health integration

# Technical assistance and evaluation of investments in inpatient NAS quality improvement initiatives

## TECHNICAL ASSISTANCE (EXAMPLES)

- Training nurses on scoring severity of NAS symptoms
- Training providers on emerging best practices in clinical protocols, including targeted training on hospital-specific quality improvement initiative goals
- Quality improvement implementation support (e.g., rapid cycle adjustments to account for successes and failures)
- Data reporting support and feedback with hospital “scorecards” and benchmarks
- Annual practice surveys
- Dissemination of learnings from support provided to HPC-funded hospitals to all birthing hospitals in the Commonwealth

## EVALUATION (EXAMPLES)

- Rates of breastfeeding (initiation and at time of discharge)
- Rates of early skin to skin contact (between infant and birth mother)
- Rates and type of pharmacologic intervention, and weaning time
- Changes in LOS in various settings of care (NICU, SCN, total hospital stay)
- Reliability of scoring of NAS symptoms
- Known prenatal exposure to opioids (for treatment of OUD or otherwise)
- Rates of referral to early intervention services prior to discharge



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# Neonatal Abstinence Syndrome Interventions Awardee Highlight (Inpatient Services): *Boston Medical Center*



## Target Population

Infants monitored for NAS

## Primary Aim

Reduce length of inpatient stay for infants with NAS by 40%

## Secondary Aims

1. Reduce pharmacotherapy by 30%
2. Increase breastfeeding initiation rate by 15%
3. Increase maternal bedside presence by 20%
4. Institute bedside psychotherapy for mothers

## Operational Approach

- Increase parental presence at bedside
- Implement peer support to introduce the benefits of breastfeeding and rooming-in
- Optimize NAS pharmacologic treatment with methadone as a first-line therapy instead of morphine
- Improve approaches to NAS symptom scoring
- Ensure timely access to wrap-around outpatient services for woman and infant
- Implement a prenatal care curriculum that includes brief individual obstetric evaluation, group discussion, education, peer support, and relapse prevention

**Total Initiative Cost**

**\$357,053**

**Total HPC Funding**

**\$248,976**

# Neonatal Abstinence Syndrome Interventions Awardee Highlight (Inpatient Services): *Baystate Medical Center*



## Target Population

Infants monitored for NAS

## Primary Aim

Increase rooming-in care for eligible maternal-infant dyads by 50%

## Secondary Aims

1. Increase adherence to MAT by pregnant women with OUD by 30%
2. Increase breastfeeding and skin to skin care rate by 30% for opioid exposed infants
3. Increase the number of infants being discharged home to biological families by 30%

## Operational Approach

- Allocate and utilize 4 rooms on the postpartum floor to provide care to eligible mother-infant dyads during observation, as well as treatment phases of NAS
- Nurses caring for infants with NAS are certified in the Finnegan scoring system or FNAST (Finnegan Neonatal Abstinence Scoring Tool)
- Dedicated trained nurses provide medical care, including monitoring of Finnegan scores, administration of prescribed medications, and providing daily infant care in cooperation with the parents
- Quarterly NAS and opiate treatment updates into regularly scheduled nursing "Brown Bag" conferences

**Total Initiative Cost**

**\$400,481**

**Total HPC Funding**

**\$249,778**

# Neonatal Abstinence Syndrome Interventions Awardee Highlight (Inpatient Services): *UMass Memorial Medical Center*



## Target Population

Infants monitored for NAS

## Primary Aim

Reduce length of inpatient stay for infants with NAS by 30%

## Secondary Aims

Reduce readmission rates for infants with NAS within 30 days of discharge by 25%

## Operational Approach

- Focus on standardization of scoring to identify and assess severity of NAS in infants, and standardization of protocols to minimize variability in pharmacological treatments
- Monthly review sessions of best practices with nurse educator to ensure retention of training
- Increase breastfeeding rate through a peer counselor lactation program for mothers
- Increase parental exposure to infant at the bedside
- Investment in enabling technology to assist nurses with Finnegan scoring decisions
- Integration of lessons learned through SAMHSA funded *Moms Do Care* program

**Total Initiative Cost**

**\$354,794**

**Total HPC Funding**

**\$249,992**



# Neonatal Abstinence Syndrome Interventions Awardee Highlight (Inpatient Services): *Lawrence General Hospital*



## Partners

- Floating Hospital for Children
- Greater Lawrence Family Health Center
- Andover Obstetrics-Gynecology
- Habit OPCO
- South Bay Mental Health
- Home Health Foundation
- New Beginnings Peer Recovery
- Massachusetts DCF

## Primary Aim

Reduce the cost per NAS episode by 10%

## Target Population

Infants monitored for NAS

## Operational Approach

- Define an NAS episode of care, and develop a framework that identifies both the elements of an NAS episode, and the associated components of cost
- Deploy a multidisciplinary care coordination team to bridge gaps within the hospital, and between the hospital and outpatient providers
- Utilize both pharmacologic and non-pharmacologic interventions to reduce length of inpatient stay for infants with NAS
- Invest in clinician training on Finnegan scoring instruments, trauma-informed care, etc.
- Creation of an inpatient care toolkit
- Increase patient engagement by dedicating a social worker to support mothers

**Total Initiative Cost**

**\$677,719**

**Total HPC Funding**

**\$250,000**

# Mother and Infant-Focused NAS Interventions Awardee Highlight (Full Spectrum): *Lowell General Hospital*



## Partners

- WomanHealth (OB/GYN practice)
- Lowell Community Health Center
- OB/GYN Associates of Merrimack Valley
- Clean Slate (buprenorphine provider)
- Habit Opco (methadone provider)
- South Bay Lowell Mental Health Clinic (Behavioral Health services)
- South Bay Lowell Early Childhood Services (Early Intervention provider)
- Thom Anne Sullivan Center (Early Intervention provider)
- MA WIC Nutrition Program

## Primary Aims

**Inpatient Initiative Primary Aim:** Reduce length of inpatient stay by 15%

**Outpatient Initiative Primary Aim:** Increase utilization of pharmacologic treatment by 20%

## Operational Approach

- Identify women with OUD early in their pregnancies, and assist them in accessing pharmacotherapy
- Integrate care between acute care setting and outpatient providers of MAT and BH services
- Support families through pregnancy, delivery, and six months postpartum
- Improve quality of inpatient care for NAS infants

## Target Population

- Infants monitored for NAS
- Pregnant women with OUD (enroll minimum of 50 women over 2 years)

**Total Initiative Cost**

**\$1,451,364**

**Total HPC Funding**

**\$999,032**

# Mother and Infant-Focused NAS Interventions Awardee Highlight (Full Spectrum): *Beverly Hospital*



## Partners

- DCF North Regional Office
- Northeast ARC EI
- Cape Ann EI
- North Shore YMCA
- Catholic Charities

## Primary Aims

**Inpatient Initiative Primary Aim:** Reduce length of inpatient stay by 30%

**Outpatient Initiative Primary Aim:** Increase retention in treatment by 20%

## Operational Approach

- Establish a support system for women during pregnancy and for 1 year post-partum.
- Provide behavioral health counseling along with pharmacological treatment, psychiatric services, and peer support for mothers
- Integrate training of psychiatry nursing staff to certify registered addictions nurses
- Train all staff in trauma-informed care

## Target Population

- Infants monitored for NAS
- Pregnant women with OUD (enroll minimum of 70 women over 2 years)

**Total Initiative Cost**

\$1,226,962

**Total HPC Funding**

\$1,000,000

## Contact Information

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