

# PNQIN AIM

## Opioid Use Disorder in Pregnancy

### Webinar Series

September 15, 2020

Webinar 3



# OUD in Pregnancy Webinars

## Monthly Agenda Overview

12:00 - 12:05: Welcome/ Introductions

12:05 - 12:15: Updates from the teams on QI projects + collaborative

12:15 - 12:30: Brief QI teaching, Assignment

- **Ronald Iverson, MD, MPH – Measures for Improvement**

12:30 - 12:55: Guest Topics: 20 min presentations + 5 mins for questions

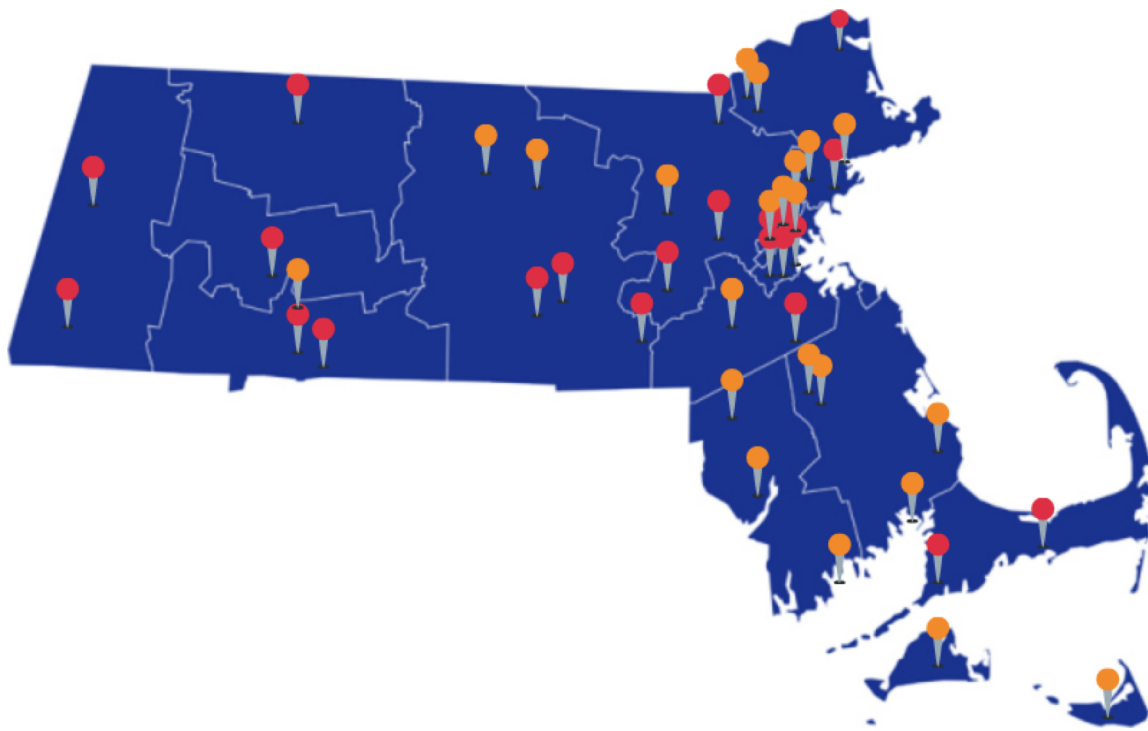
- **Daisy Goodman, DNP, MPH, CNM, CARN-AP – AIM OUD and the Checklist**

12:55 - 1:00: Closing/ Final Comments

# Webinar Housekeeping

- We will take attendance in the chat box each month – please comment with your name and hospital
- Please mute yourselves unless you would like to contribute to the conversation or ask a question
- Utilize the "raise hand" feature or chat box to speak
- We will record this session and upload the recording and webinar slides to our website after the call
- We welcome feedback about the webinar content and structure!
- Please participate! We want this webinar to be helpful and collaborative!

# PNQIN AIM Wave 2 - Who's on the Line?



## PNQIN AIM OUD Wave 2 Targeted Hospitals

- Beth Israel Deaconess Plymouth
- Beverly Hospital
- Brockton Hospital
- Cambridge Hospital/CHA
- Charlton Memorial Hospital
- Emerson Hospital
- Good Samaritan Medical Center
- Health Alliance Hospital
- Heywood Hospital
- Holy Family Hospital
- Holyoke Medical Center
- Lawrence General Hospital
- Martha's Vineyard Hospital
- Melrose- Wakefield Hospital
- Mount Auburn Hospital
- Nantucket Cottage Hospital
- Norwood Hospital
- St. Elizabeth's Medical Center
- St. Luke's Hospital
- Sturdy Memorial Hospital
- Tobey Hospital
- Winchester Hospital

# PNQIN Perinatal Opioid Project Leadership Team

## PNQIN

- Fifi Diop (DPH) – Grant Primary Investigator
- Audra Meadows (BWH)
- Ron Iverson (BMC)
- Munish Gupta (BIDMC)
- Kali Vitek (BMC)

## Neonatal Folks

- Elisha Wachman (BMC)
- Larry Rhein (UMass)
- Rachana Singh (Baystate)
- Davida Schiff (MGH)
- Alan Picarillo (Maine)
- Eileen Costello (BMC)

## Maternal Folks

- Katherine Callaghan (UMass)
- Leena Mittal (MCPAP for Moms)
- Laura Sternberger (Moms Do Care)
- Nicole Smith (BWH)
- Donna Jackson-Kohlin (Baystate)
- Linda Jablonski (Baystate)

## Academic and Organizational Partners

- Patrice Melvin (BCH)
- Karla Damus (BU)
- Christina Gebel (Accompany Doula Care)

## State Partners

- Fifi Diop (DPH and PI of PNQIN Grant)
- Griffin Jones (HPC)
- Michael Kelleher (OHHS)
- Debra Bercuvitz (DPH)
- Abby Taylor (AGO)
- Karen Pressman (BSAS)
- Julia Reddy (BSAS)
- Mary Lutz (DCF)
- Alissa Cruz (MassBIRT)
- Colleen Labelle (BMC)
- Julia Prentice (BLC)
- Natalia Ciesielska (BLC)

## Families

- Patricia McDonnell (Baystate)
- Julie Maida
- Meghann Perry
- Ceara McManus (Moms Do Care)

# Announcements

- PNQIN Admin changes - WELCOME TO KALI VITEK!
- Please sign and return your hospital engagement contract with AdCare Educational Institute, Inc. and W9 form to Denise Henry ([denise@adcare-educational.org](mailto:denise@adcare-educational.org)).
  - If you have not received a contract but would like to receive funding for AIM activities, please send a Zoom chat/email now to PNQIN Admin ([pnqinadmin@pnqinma.org](mailto:pnqinadmin@pnqinma.org))
- Keep on an eye out for Data Use Agreements (BIDMC) and Memorandums of Understanding (BLC) – these **must** be signed and returned in order to start collecting site data
- Check out website for updates!

# Available Trainings

- ASAM/ACOG's Buprenorphine Waiver Trainings
  - **Upcoming dates:** September 25th and 30th; October 2nd, 9th, and 16th
  - **Register:** [https://www.asam.org/education/live-online-cme/waiver-qualifying-training/ob-gyn-focus?utm\\_source=ACOG&utm\\_medium=Today's%20Headlines&utm\\_campaign=ACOG&utm\\_term=20TOUD](https://www.asam.org/education/live-online-cme/waiver-qualifying-training/ob-gyn-focus?utm_source=ACOG&utm_medium=Today's%20Headlines&utm_campaign=ACOG&utm_term=20TOUD)
- MAT Waiver training for Advanced Practice Registered Nurses is offered by Providers Clinical Support System for free!
  - CE credits available
  - **Register:** <https://pcssnow.org/medications-for-addiction-treatment/waiver-training-for-nurses/>

# Webinars, Podcasts, and Videos

- ASAM National Practice Guideline 2020 Focus Update Webinar – Pregnant Women
  - Follow the link for a recording and/or slides from June 30th: <https://elearning.asam.org/products/the-asam-national-practice-guideline-2020-focused-update-pregnant-women>
- Florida PCQ video series on maternal opioid use topics with the AIM states
  - <https://files.constantcontact.com/9648b4fd601/1d443076-3f4f-430d-b60d-1dec5934d5ea.pdf>
  - <https://health.usf.edu/publichealth/chiles/fpqc/morevideos>
- ACOG District II "On the Front Line" Podcast on Opioid Use Disorder
  - Listen here: <https://www.acog.org/community/districts-and-sections/district-ii/programs-and-resources/medical-education/opioid-use-disorder-in-pregnancy>
- "Engaging Women with OUD in the COVID-19 Crisis" presented by Mishka Terplan, MD, MPH
  - View the webinar recording and slides under the “Archived MORE Presentations and Webinars” tab: <https://health.usf.edu/publichealth/chiles/fpqc/MORE>



# Team Updates/Check-In

# QI Webinar Topics for Next 12 months

## Date/QI Topic

7/21/20	OUD Bundle Components Overview & Stakeholders
8/18/20	Developing a Project AIM
<b>9/15/20</b>	<b>Measures for Improvement</b>
10/20/20	Key Driver Diagram
11/17/20	Developing Interventions
12/15/20	Understanding Run Charts
1/19/21	Understanding Data Control Charts
2/16/21	Using the PDSA Cycle
3/16/21	PDSA: Making Adjustments
4/20/21	Scale and Spread Up
5/18/21	Sustainability

# QI Teaching: Measures for Improvement

**Ronald Iverson, MD, MPH**

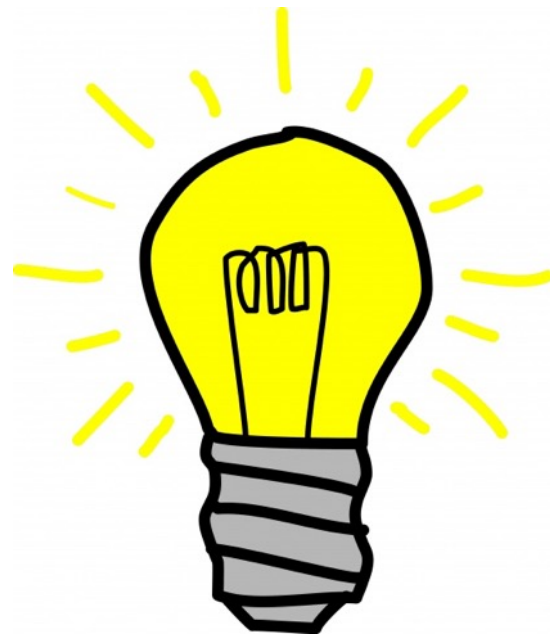
*Special Thanks: Adapted slides from Bernadette Levesque, MD  
Boston Medical Center*

# PNQIN Guiding Principles

Why



Key Ideas



Start Here



If nothing else..



Improvement is NOT just about measurement...  
...but you won't know if you improved something without measuring it!

# Measurement in quality improvement is different than measurement in research

	Measurement for Research	Measurement for Learning and Process Improvement
<b>Purpose</b>	To discover new knowledge	To bring new knowledge into daily practice
<b>Tests</b>	One large "blind" test	Many sequential, observable tests
<b>Biases</b>	Control for as many biases as possible	Stabilize the biases from test to test
<b>Data</b>	Gather as much data as possible, "just in case"	Gather "just enough" data to learn and complete another cycle
<b>Duration</b>	Can take long periods of time to obtain results	"Small tests of significant changes" accelerates the rate of improvement

# Data Collected From Improvement is Not Just Numbers

## Quantitative Data

- Continuous measurements
- Counts of Observations
- Ratings
- Ranking

## Qualitative Data

- Documentation of what people feel
- Documentation of what people do
- Documentation of what people know

# Milestones in the Quality Measurement Journey



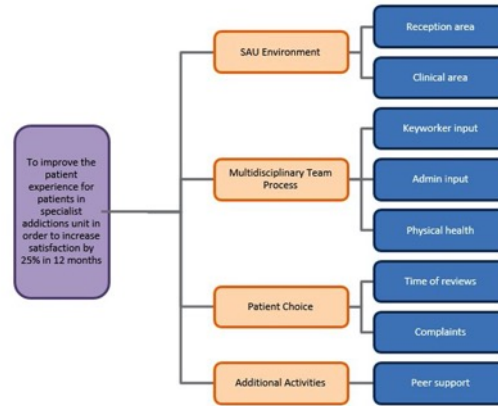
Source: R. Lloyd. *Quality Health Care: A Guide to Developing and Using Indicators*. Jones and Bartlett Publishers, 2004.



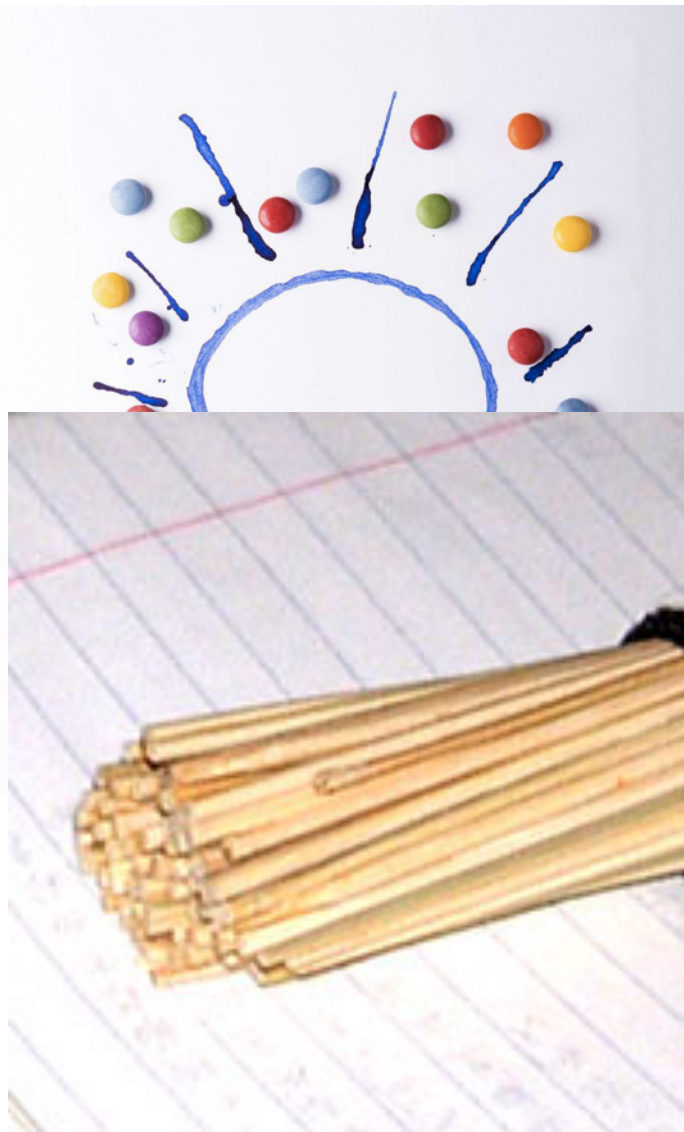
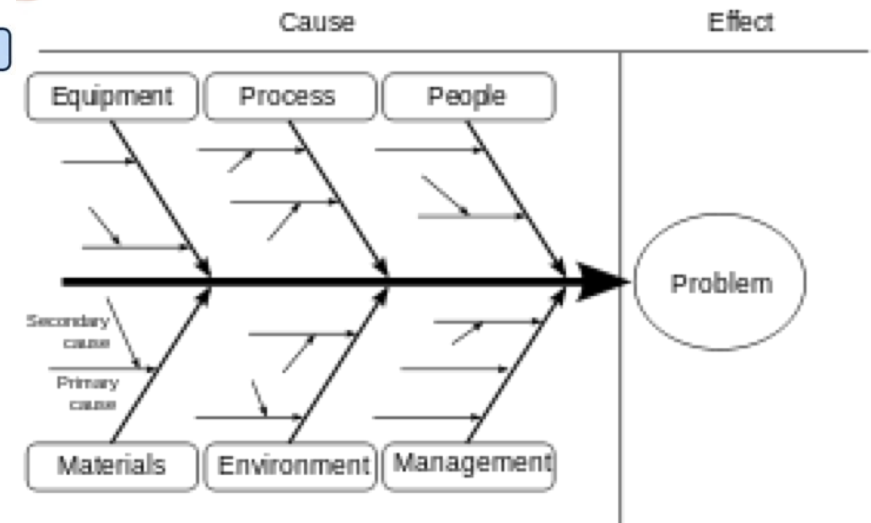
# Generating Ideas/Change Concepts



## Driver diagram



- Entertainment and educational materials
- Communication of appointments
- Offer more input – monitoring and treatment
- Re-organise team timetable
- To change peer support programme content



# Moving from a Concept to Measure

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*“Hmmm...how do I move  
from a concept  
to an actual measure?”*

*Every concept can have MANY measures.  
Which one is most appropriate?*

# Measurement does not have to be complicated

- Track a few measures over time and present them well
- Measurement can reveal important information
  - How well your current process is working
  - How much variation is in your data/process
  - What is the impact of a small test of change
  - Whether the changes have resulted in improvement
  - Whether a change has been sustained

# Milestones in the Quality Measurement Journey



Source: R. Lloyd. *Quality Health Care: A Guide to Developing and Using Indicators*. Jones and Bartlett Publishers, 2004.

# Operational Definitions

- Every measure needs to have a clear operational definition
- Specify who, what, when, where, and how
- Specify the source of the data
  - Chart review vs. administrative data
  - Patient logs vs. a computer database
- Define specific criteria for the data to be collected
- Define all inclusions and exclusions
- For percentages or rates, or ratios, define the criteria for inclusion in the numerator and denominator
- Always ask “How might somebody be confused by this definition?”

# Example of good operational definition

**Measure name:** Of women delivering babies with opioid exposure, what percent are in a MAT program?

- **Numerator:** Number of mothers of babies exposed to opioids in a MAT program
- **Denominator:** Number of mothers of babies exposed to opioids
- **Data Collection:**
  - All babies with opioid exposure are identified
  - Information is gathered by the NICU team in coordination with the OB teams on maternal treatment

# Four Types of Measures for Quality Improvement

- Structure Measures
- Process Measures
- Outcome Measures
- Balancing Measures

# Structure Measures

What is built into your system?

Do you have:

- Policies?
- Protocols?
- Instruments/tools/kits?

**Examples:** Do you have a screening policy for SUD? Do you have educational tools? DO you have MAT waivered providers?



# Process Measure

- These measures are the specific steps in a process that lead to a particular outcome metric
- Measure the actual steps you are taking to achieve your outcome
  - Frequency of the use of the bundle
  - Percentage of patients provided with specific instruction
  - Number of staff members attending the meeting

## Examples:

What percent of your patients are undergoing SUD screening?

What percent of positively screened patients are receiving MAT?

What percent of your patients receive the educational resources?

What percent of your patients with OUD are completing the Plan of Safe Care?

# Outcome Measure

- Outcome measures reflect the impact of the health care service or intervention on the health of patients
- Primary thing you want to achieve with your project
  - Incidence of a specific disease or outcome
  - Readmissions to the hospitals or ED Visits
  - Patient or Staff Satisfaction
  - Cost per case, average LOS, revenue per case

**Example:** Of women delivering babies with opioid exposure, what percent are in a MAT program?

# Balancing Measures

- These are the metrics you want to track to ensure an improvement in one area isn't negatively affecting another area
- Looking at a system from different directions. What happened to the system as we improved the outcome and process measures?
  - Unintended consequences of the new program
  - Unanticipated increase in mortality, morbidity, or cost
  - Has the shifting of resources in an organization compromised other client or patient populations

# Milestones in the Quality Measurement Journey



Source: R. Lloyd. *Quality Health Care: A Guide to Developing and Using Indicators*. Jones and Bartlett Publishers, 2004.

# Sampling is great! How much depends on your goal...

How often, how long, how much

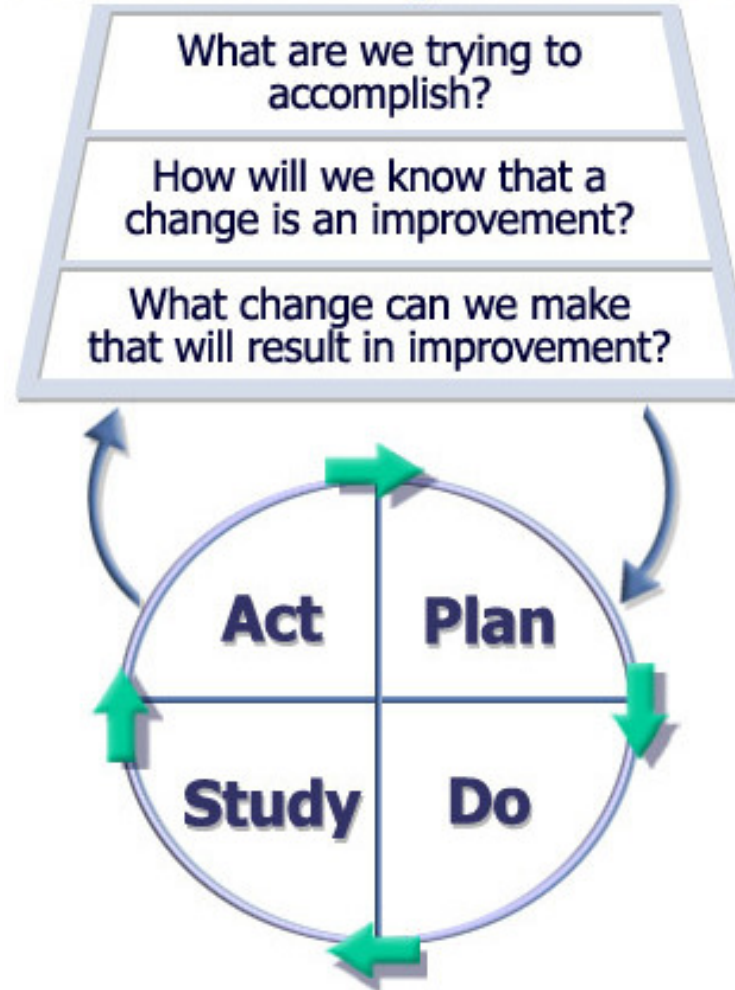
- Frequency
- Duration
- Volume

	Low Degree of Belief	High Degree of Belief
Minor Consequences	Medium scale	One test cycle only prior to implementation
Major Consequences	Very small scale	Small to medium scale

*Guide for determining test size based on degree of belief and potential consequences<sup>2</sup>*

# Use what you've learned!

## Model for Improvement



# Guest Speaker Webinar Topics for Next 12 months

## Date/Guest Speaker Topic

7/21/20	OUD Screening Options
8/18/20	Plans of Safe Care
<b>9/15/20</b>	<b>Caring for Patients with OUD</b>
10/20/20	Linkages to Care
11/17/20	Equity Considerations in OUD care
12/15/20	Centering Patient Voice
1/19/21	OUD SMM Data
2/16/21	Early Head Start
3/16/21	MAT
4/20/21	Pain Relief During Pregnancy, Labor, Surgery & Post-op
5/18/21	SBIRT Check-in

**Guest Topics:**  
**Caring for Patients with OUD: Using the  
Checklist**

**Daisy Goodman, DNP, MPH, CNM, CARN-AP  
NNEPQIN**



# Improving Care for Pregnant People with Opioid Use Disorder With AIM Patient Safety Bundles

Daisy Goodman, DNP, MPH, CNM, CARN-AP  
Northern New England Perinatal Quality Improvement Network



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# Disclosures

- No conflicting interests
- Many acknowledgements
  - March of Dimes Foundation
  - New Hampshire Charitable Foundation
  - The Dartmouth Collaboratory for Implementation Science
  - Centers for Disease Control ERASE-MM Program
  - NNEPQIN partners
  - Our patients and families

# Greetings from NNEPQIN

The Northern New England Perinatal Quality Improvement Network was launched in 2002

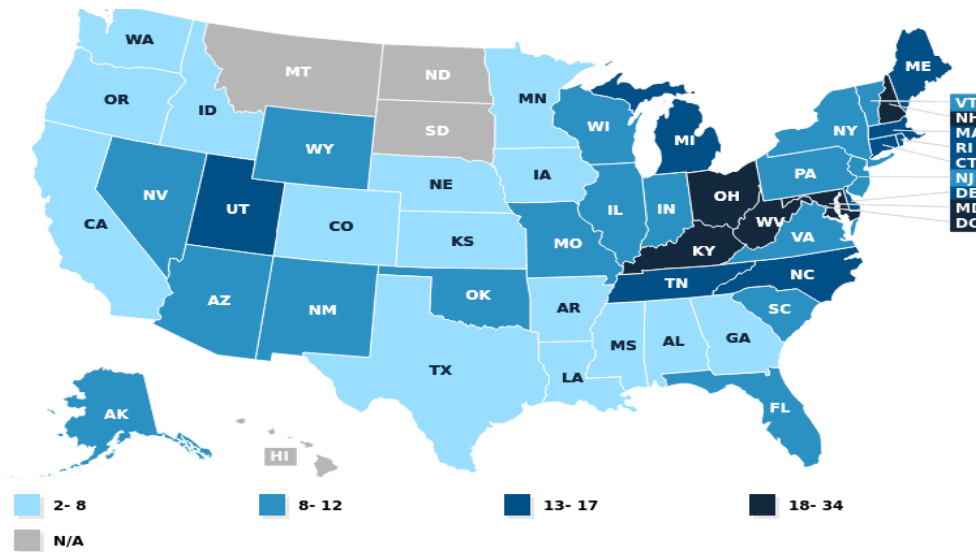
A voluntary consortium of 48 organizations involved in providing maternal-child health across the Tri-state region

- 11 birth hospitals in Maine
- 17 birth hospitals in NH
- 11 birth hospitals in VT
- Policy makers
- Professional organizations



# Maternal-Child Health in the Current Opioid Crisis

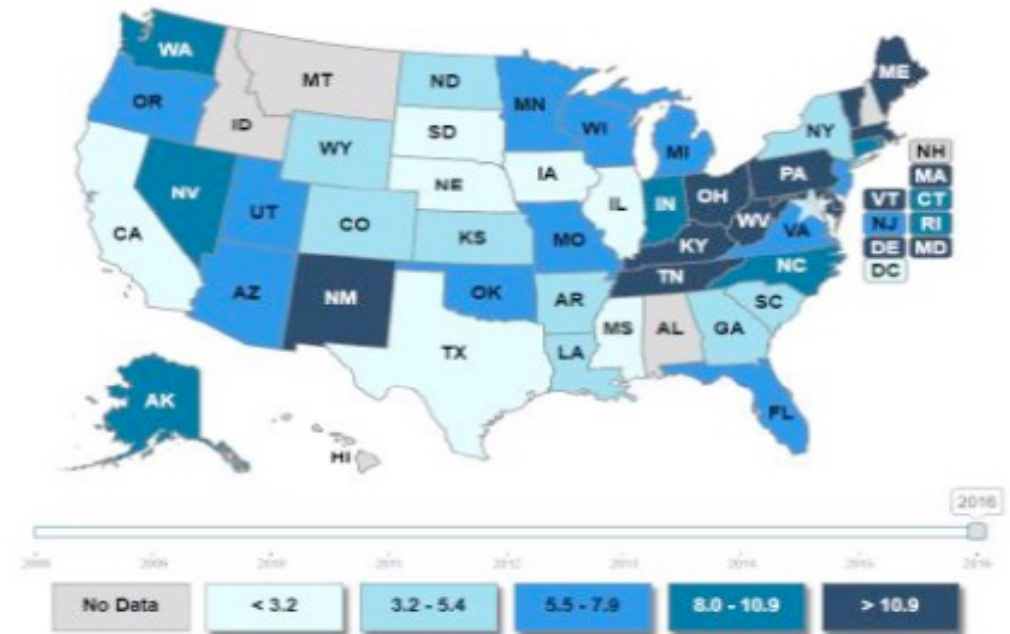
Opioid-Related Overdose Death among U.S. Women (2017)



SOURCE: Kaiser Family

Source: Kaiser Family Foundation

NAS Admissions  
(Rate per 1,000 LB in 2016)



Source : Healthcare Cost and Utilization Project (HCUP)

Maternity care provides a  
critical window of  
opportunity

# Impact of Untreated Perinatal Substance Use

## Medical/Obstetric

- Infectious disease
  - Rising rates of STIs
  - Hepatitis
  - HIV
- Cardiac infections
- Thrombosis and embolism
- Bleeding
- Rh Isoimmunization
- Fetal loss
- Overdose

## Psychosocial

- Repetitive trauma
- Untreated mental health needs
- Housing instability
- Partner violence
- Polysubstance use, including tobacco

## Neonatal

- Low birth weight
- Prematurity
- Neonatal withdrawal (NOWS)
- Developmental sequelae

# COVID-19

## Increased Risk

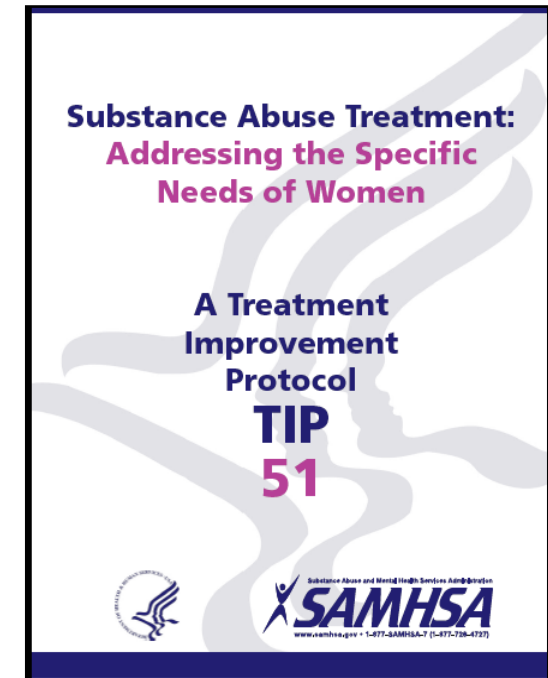
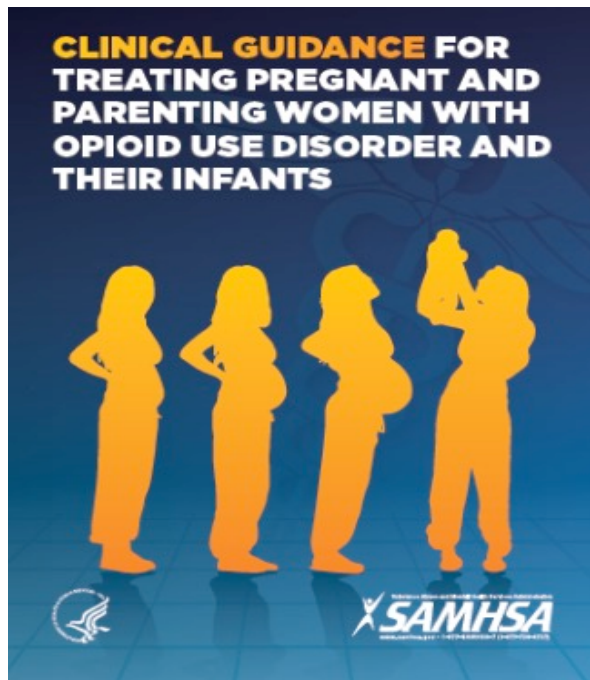
- Job loss
- Housing/food insecurity
- Isolation
- Increased family stress
- Changes in substance availability/source/type
- Racial and ethnic disparities

## Effect on Treatment

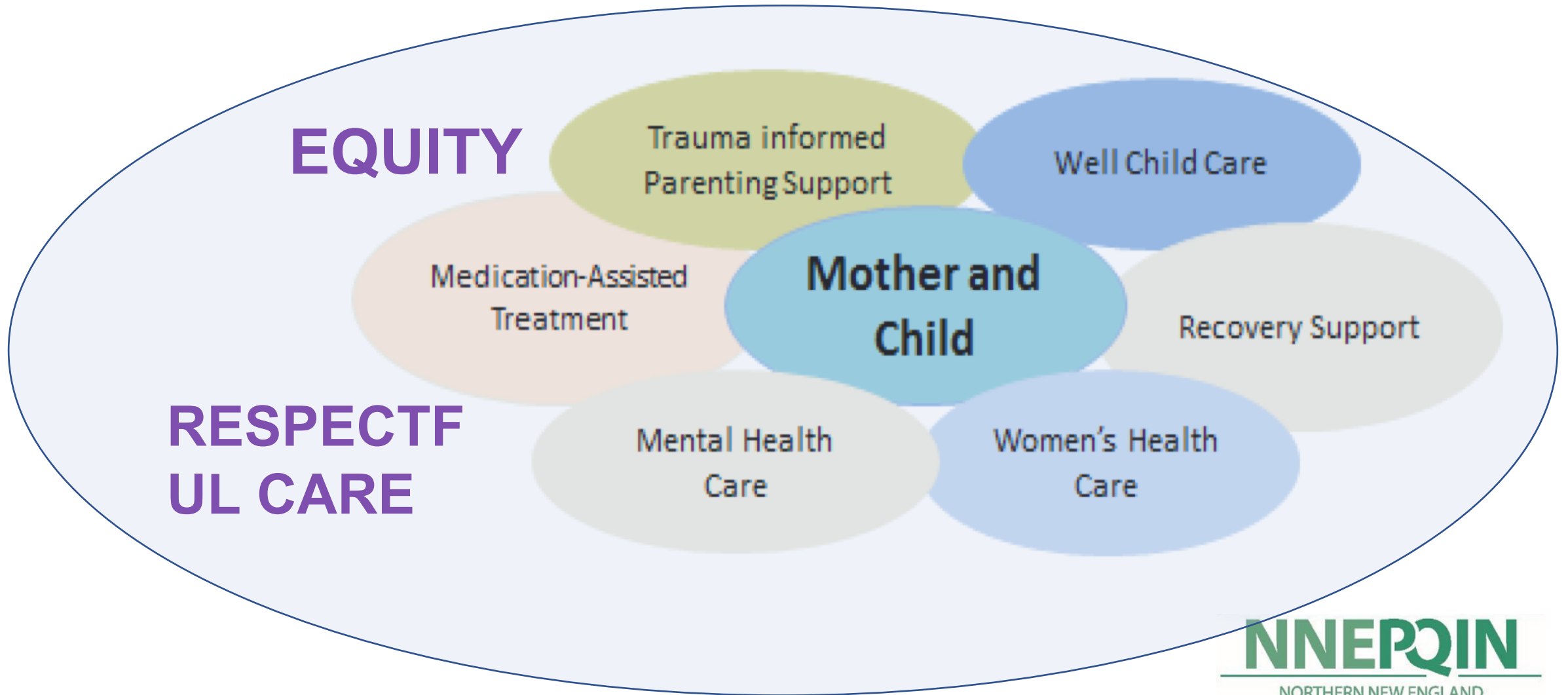
- Decreased face-to-face contact
- Emphasis on digital technology
  - Disparities in access (devices/internet)
  - Lack of privacy
  - Cost
- Loss of peer support/community
- Fear of engaging with healthcare
- Social services accessible primarily by phone/web

“Services for pregnant and breastfeeding women with substance use disorders *should have a level of comprehensiveness that matches the complexity and multifaceted nature of substance use disorders and their antecedents.*”

(World Health Organization, 2014)



# *What Does Quality Look Like?*





# Clinical Pathway

- ✓ Linkage to care
  - Behavioral Health care
  - Substance use treatment
  - Naloxone access
- ✓ Screening for infectious disease/follow up
  - HIV
  - Hepatitis
  - Sexually transmitted infections
- ✓ Screen for and address material needs
  - Housing
  - Food insecurity
  - Safety
- ✓ Anticipatory guidance
  - Infant care/NOWS
  - Hospital policies
  - Plan of Safe Care
- ✓ Education
  - Breastfeeding
  - Pain management
  - Birth spacing/contraceptive options
  - Overdose prevention
- ✓ Focus on equity
  - Anti-bias and cultural humility training for staff
  - Seamless language and communication access
  - Accurate collection of demographic data
  - Analyze outcomes by race, ethnicity, payor, rurality



- READINESS**
- RECOGNITION & PREVENTION**
- RESPONSE**
- REPORTING & SYSTEMS LEARNING**

PATIENT SAFETY BUNDLE

*Obstetric Care for Women with Opioid Use Disorder*

# Patient Safety Bundle: Obstetric Care of Women with Opioid Use Disorder

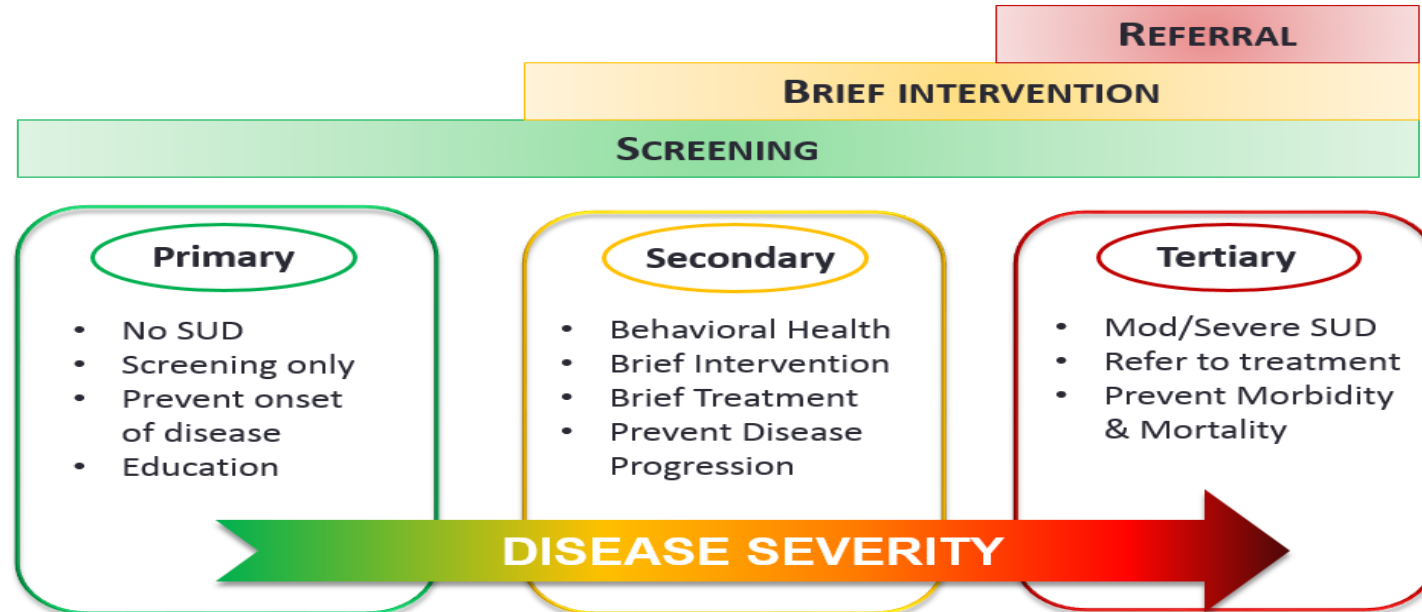
## READINESS

- Provide education to promote understanding of opioid use disorder (OUD) as a chronic disease.
  - Emphasize that opioid pharmacotherapy and behavioral therapy are effective treatments
- Identify local SUD treatment facilities that provide women-centered care.
- Know state reporting guidelines regarding the use of opioid pharmacotherapy and identification of illicit substance use during pregnancy.
- Know federal (Child Abuse Prevention Treatment Act – CAPTA), state and county reporting guidelines for substance-exposed infants.

## RECOGNITION & PREVENTION

### *Every provider/clinical setting*

- Assess all pregnant women for SUDs.
  - Incorporate a screening, brief intervention and referral to treatment (SBIRT) approach in the maternity care setting.
- Match treatment response to each woman's stage of recovery and/or readiness



## RECOGNITION & PREVENTION

### ***Every provider/clinical setting***

- Screen and evaluate all pregnant women with OUD for commonly occurring co-morbidities.
  - Ensure the ability to screen for infectious disease
  - Ensure the ability to screen for psychiatric disorders, physical and sexual violence.
  - Provide interventions for smoking cessation.

## RESPONSE

- Establish communication with OUD treatment providers and obtain consents
- Incorporate family planning, breastfeeding, pain management and infant care counseling, education and resources into prenatal, intrapartum and postpartum clinical pathways.

# Implementing Patient Safety Bundle Elements Using a Checklist

Perinatal SUD Checklist

Element	Date	Comments
Federal consent to share medical information		Name of Consent signed and shared with substance use treatment provider
HIV status		<b>Obtain consent to share information with treatment provider</b>
Hepatitis C antibody, if + draw viral load		
Hepatic Function Test		
Institutional drug testing policy reviewed		
Plan of Safe Care and mandated reporting requirements discussed		
Behavioral Health		
Needs assessment and/or Care Management		
Risks of non-prescribed drugs and alcohol discussed		<b>Treatment for tobacco</b>
Marijuana counseling		
Tobacco counseling		<b>Provide access to naloxone</b>
Narcan counselling and Rx offered		
<b>Third Trimester</b>		
Repeat HIV, HBSAG GC/CT		
HCV antibody, if + draw viral load		<b>Screen for Hepatitis C with follow up testing if indicated</b>
Ultrasound for growth/fluid		
UDAU with confirmation sent (consent required)		
Review Plan of Safe Care		
NAS information reviewed		
Breastfeeding information reviewed		
Pain management discussed		
Family Planning discussed		
OTHER		

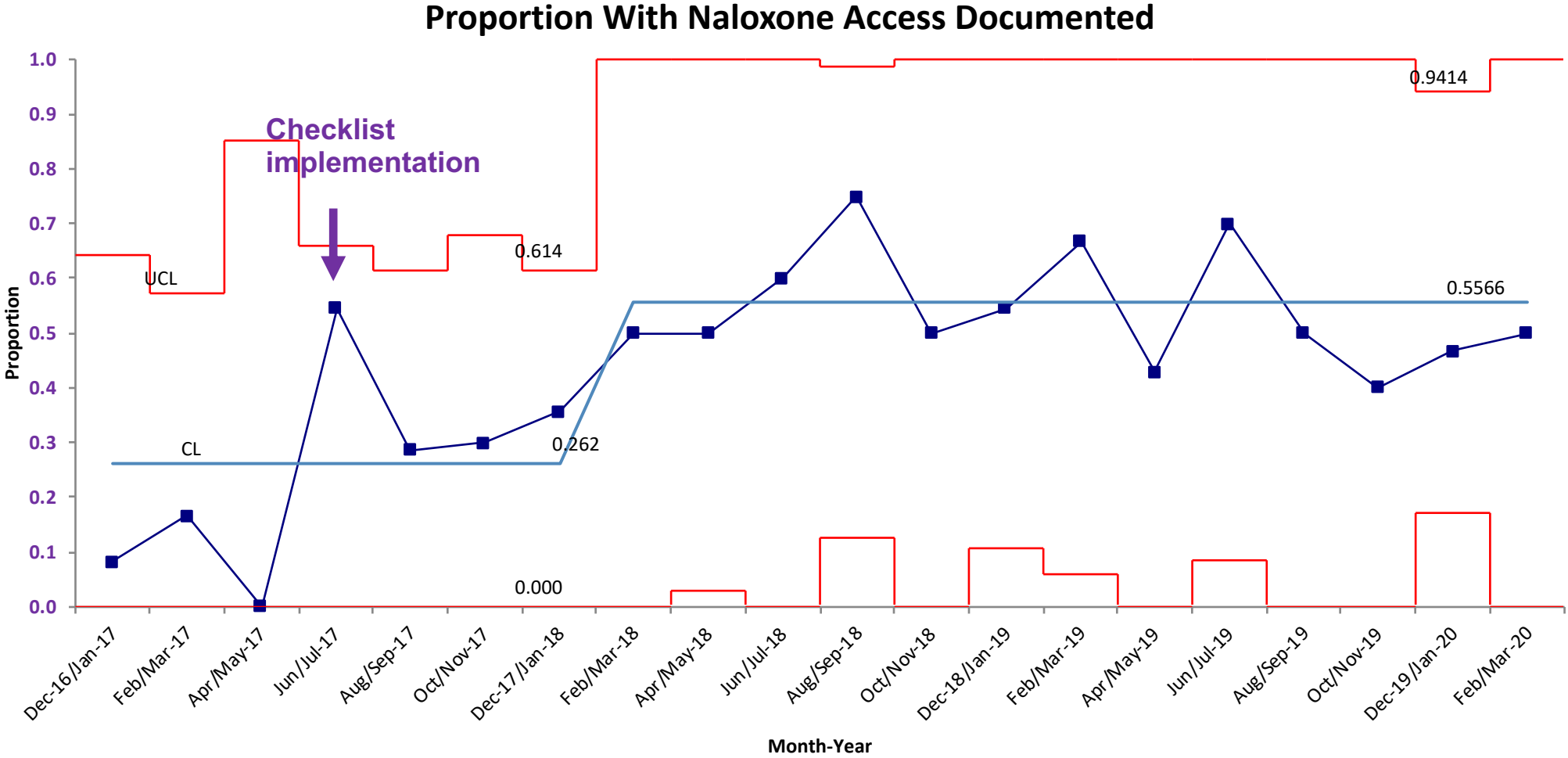
# Pre- vs Post Checklist Implementation

QUALITY OF CARE	Pre (n=55)	Post (n=168)	<i>p</i>
Treated for co-occurring mental health condition	18.2%	29.3%	NS
Provided access to Naloxone	10.9%	36.3%	<.001
Screened for Hepatitis C	89.1%	95.2%	NS
Tested for Hepatitis C chronicity	66.7%	88.9%	.04
Provided NRT	7.3%	23.8%	<.01

## CLINICAL OUTCOMES

Tobacco use at time of delivery	80 %	84.5%	NS
Positive Drug Screen, 3 <sup>rd</sup> Trimester or Admission	38.2%	29.9%	NS
Singleton low birthweight	16.7%	12.2%	NS
Preterm delivery rate	11.1%	10.4%	NS

# Access to Naloxone for Perinatal Patients with Opioid Use Disorder





# Using Data For Continual Improvement

- ***Meds to Beds Program***

- Naloxone dispensed to patients with OUD diagnosis as part of discharge process
- Temporarily on hold due to COVID-19, plan to resume soon

- **Ob/Gyn outpatient naloxone program (*under construction*)**

- Will dispense naloxone in prenatal clinic to patients at risk or with family members at risk of overdose
- Anticipated launch: September 2020

# Required Measures (All AIM Participants)

## Outcomes

O1: Severe Maternal Morbidity

O2: Severe Maternal Morbidity

O3: Pregnancy Associated Opioid Deaths

O4: Average length of stay for newborns with Neonatal Abstinence Syndrome (NAS)

## Process

P1: Percent of women with OUD during pregnancy who receive medication assisted treatment MAT or behavioral health tx

P2: Percent of Opioid Exposed Newborns receiving mother's milk at newborn discharge

P3: Percent of Opioid Exposed Newborns who go home to biological mother

P4: Universal Screening at Prenatal Care Sites

## Structure

S1: Universal Screening on L&D

S2: General pain management practices

S3: OUD pain management guidelines

## State Surveillance

SS1: Percent of newborns diagnosed as affected by maternal use of opiates

SS2: Percent of newborns diagnosed with NAS

“Health disparities and quality are two sides of the same coin...that’s it in a nutshell. If you’re going to provide quality care and services, then you need to address health disparities.”

-Kimberlydawn Wisdom, MD

Senior Vice President of Community Health and Equity

Henry Ford Health System



## REPORTING & SYSTEMS LEARNING

### **Build a culture of equity, including systems for reporting, response, and learning**

- Develop mechanisms to collect data and monitor process and outcome metrics to ensure high quality healthcare delivery for women with SUDs.
  - Develop a data dashboard to monitor process and outcome measures
  - Create multidisciplinary case review teams to evaluate patient, provider and system-level issues.
  - Develop a disparities dashboard that monitors process and outcome metrics stratified by race and ethnicity
- Implement quality improvement projects that target disparities in healthcare access, treatment, and outcomes.
- Consider the role of race, ethnicity, language, poverty, literacy, and other social determinants of health, including racism at the interpersonal and system level when conducting reviews of severe maternal morbidity, mortality, and other clinically important metrics.

# Brief Summary...

- Reducing morbidity and mortality due to opioids requires maternal-child health providers address the full range of medical, psychiatric, substance-related, and social needs of our patients
- We can improve quality and outcomes for women with OUD/SUD through implementing key components of the AIM Safety Bundles
- Data is critical to identify disparities and keep improvement moving forward
- There is no quality without equity

# Citations

- American College of Obstetricians and Gynecologists. *Optimizing Postpartum Care*. Committee Opinion number 736.
- American Society of Addiction Medicine. *Definition of Addiction*. <https://www.asam.org/resources/definition-of-addiction>
- Council on Patient Safety in Women's Health. Alliance for Innovation in Maternal Health (AIM) Patient safety bundle for the obstetric care of women with opioid use disorder. Accessed 5/19/19: <https://safehealthcareforeverywoman.org/aim-program/>
- Center for Disease Control. Report from 9 Maternal Mortality Review Committees. 2018.
- Council on Patient Safety in Women's Health. Alliance for Innovation in Maternal Health (AIM) Patient safety bundle for the obstetric care of women with opioid use disorder. Accessed 5/19/19: <https://safehealthcareforeverywoman.org/aim-program/>
- Council on Patient Safety in Women's Health. Alliance for Innovation in Maternal Health (AIM) Patient safety bundle for Reduction of peripartum racial and ethnic disparities. Accessed 5/19/19: <https://safehealthcareforeverywoman.org/aim-program/>
- Goodman, D, Zagaria, A, Flanagan, V et al. Feasibility and Acceptability of a checklist and learning collaborative to promote quality and safety in the perinatal care of women with opioid use disorder. *JMWH* 2019; 64:104-111.
- Kaiser Family Foundation. 2017. Accessed from; <http://kff.org/other/state-indicator/opioid-overdose-death-rates/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D>

# Closing Thoughts

- Next webinar is **Tuesday, October 20th, 2020** from 12-1pm
- **QI Topic:** Key Driver Program
- **Guest Topic:** Linkages to Care
- **Assignment:** Think about your measures; please sign and return your hospital engagement contract with AdCare Educational Institute, Inc. and W9 form to Denise Henry ([denise@adcare-educational.org](mailto:denise@adcare-educational.org))

***Stay tuned for registration and agenda for the PNQIN Perinatal Opioid Use Summit – 11/17 and 11/18!***

# Questions or Concerns?





# Extra Slides & Resources

# Resources and Toolkits with QI Measures templates

- <http://www.ihl.org/resources/Pages/Tools/Quality-Improvement-Essentials-Toolkit.aspx>
- <http://www.ihl.org/resources/Pages/HowtoImprove/ScienceofImprovementEstablishingMeasures.aspx>
- [https://health.usf.edu/-/media/Files/Medicine/GME/quality-improvement/qi-workbook.ashx?utm\\_source=pdf\\_downloads&utm\\_medium=pdf&utm\\_campaign=gme&la=en&hash=49A09A0EA28F3934839F869085CC241BE4EF7CC3](https://health.usf.edu/-/media/Files/Medicine/GME/quality-improvement/qi-workbook.ashx?utm_source=pdf_downloads&utm_medium=pdf&utm_campaign=gme&la=en&hash=49A09A0EA28F3934839F869085CC241BE4EF7CC3)
- <https://www.topalbertadoctors.org/file/quality-improvement-guide.pdf>