

# Supporting Women With Opioid Use in Making Informed Decisions and Reaching their Infant Feeding Goals

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PA PQC Meeting - March 31, 2022

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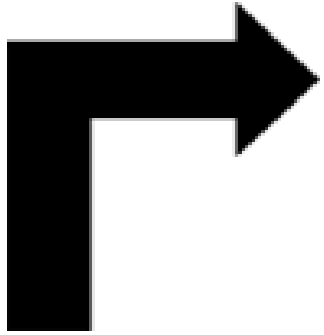
Pediatrician, Former Clinical Researcher

- Volunteer Medical Director Mid-Atlantic Mothers' Milk Bank
- Views I share today are mine and based on best evidence I found



# Outline

- Motivation of pregnancy for behavior change
- Breastfeeding quick reminder
- Basic review of drug transfer into breastmilk
- Role of breastfeeding in treatment for NOWS –
  - Recommendations by professional organizations
  - Role of hospital policies and breastfeeding
  - Donor human milk?
- Suggest ways to support informed maternal infant feeding decisions



Pregnant Women Greatly Reduce their Use of:

- Cigarettes
- Alcohol
- Cannabis
- Illicit substances

NSDUH – past month of use

[https://www.samhsa.gov/data/sites/default/files/cbhsq-reports/Assistant-Secretary-nsduh2018\\_presentation.pdf](https://www.samhsa.gov/data/sites/default/files/cbhsq-reports/Assistant-Secretary-nsduh2018_presentation.pdf)

# Benefits of Breastfeeding (or breastmilk)

## ▶ **For infants**

- ▶ Asthma
- ▶ Obesity
- ▶ Type 2 diabetes
- ▶ Ear and lower respiratory infections
- ▶ SUIDS
- ▶ Preterm infants (NEC, earlier discharge, faster to full enteral feeding)

## ▶ **Attachment**

## ▶ **Skin-to-Skin (temp regulation, lower rates hypoglycemia)**

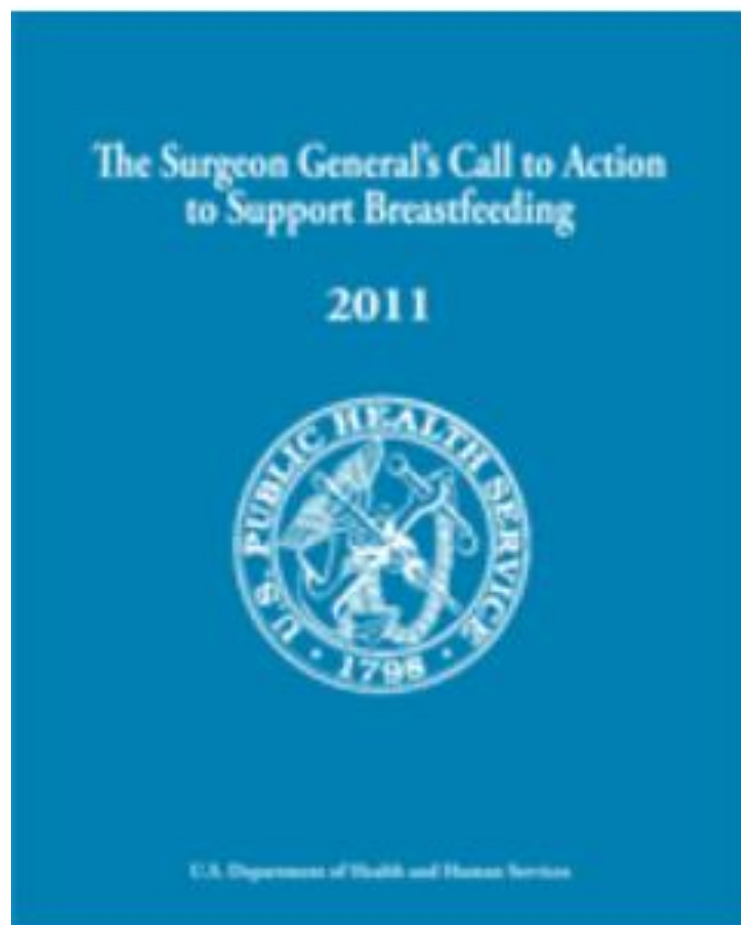
## ▶ **For mothers**

- ▶ CV disease / hypertension
- ▶ Type 2 diabetes
- ▶ Ovarian and breast cancer

## ▶ **Society**

- ▶ Less waste – green!
- ▶ Free
- ▶ Huge health care savings

## Appendix 2 Excess Health Risks Associated with Not Breastfeeding



U.S. Department of Health and Human Services. *The Surgeon General's Call to Action to Support Breastfeeding*. Washington, DC: U.S. Department of Health and Human Services, Office of the Surgeon General; 2011.

Outcome	Excess Risk <sup>*</sup> (%) (95% CI) <sup>†</sup>	Comparison Groups
<i>Among full-term infants</i>		
Acute ear infections (otitis media) <sup>2</sup>	100 (56, 233)	EFF <sup>‡</sup> vs. EBF <sup>§</sup> for 3 or 6 mos
Eczema (atopic dermatitis) <sup>11</sup>	47 (14, 92)	EBF <3 mos vs. EBF ≥3 mos
Diarrhea and vomiting (gastrointestinal infection) <sup>3</sup>	178 (144, 213)	Never BF <sup>¶</sup> vs. ever BF
Hospitalization for lower respiratory tract diseases in the first year <sup>4</sup>	257 (85, 614)	Never BF vs. EBF ≥4 mos
Asthma, with family history <sup>2</sup>	67 (22, 133)	BF <3 mos vs. ≥3 mos
Asthma, no family history <sup>2</sup>	35 (9, 67)	BF <3 mos vs. ≥3 mos
Childhood obesity <sup>7</sup>	32 (16, 49)	Never BF vs. ever BF
Type 2 diabetes mellitus <sup>6</sup>	64 (18, 127)	Never BF vs. ever BF
Acute lymphocytic leukemia <sup>2</sup>	23 (10, 41)	Never BF vs. >6 mos
Acute myelogenous leukemia <sup>5</sup>	18 (2, 37)	Never BF vs. >6 mos
Sudden infant death syndrome <sup>2</sup>	56 (23, 96)	Never BF vs. ever BF
<i>Among preterm infants</i>		
Necrotizing enterocolitis <sup>2</sup>	138 (22, 2400)	Never BF vs. ever BF
<i>Among mothers</i>		
Breast cancer <sup>8</sup>	4 (3, 6)	Never BF vs. ever BF (per year of breastfeeding)
Ovarian cancer <sup>2</sup>	27 (10, 47)	Never BF vs. ever BF

\* The excess risk is approximated by using the odds ratios reported in the referenced studies.

† CI = confidence interval.

‡ EFF = exclusive formula feeding.

# Breastmilk feeding for mothers and infants with opioid exposure: What is best?

Debra L. Bogen <sup>a</sup>  , Bonny L. Whalen <sup>b</sup> 

With rare exception, breastfeeding is the optimal way to feed infants, and has special benefits for women and infants with perinatal opioid exposure. Infants breastfed and/or fed their mother's own breastmilk experience less severe opioid withdrawal symptoms, have shorter hospital stays, and are less likely to be treated with medication for withdrawal. The specific impact of mothers' milk feeding on opioid withdrawal may be related to the act of breastfeeding and associated skin-to-skin contact, qualities of breastmilk, healthier microbiome, small amounts of opioid drug in breastmilk, or a combination of these. Women with opioid use disorder face significant breastfeeding obstacles, including psychosocial, behavioral, concomitant medications, and tobacco use and thus may require high levels of support to achieve their breastfeeding goals. They often don't receive information to make informed infant feeding decisions. Hospital practices such as prenatal education, rooming-in and having a policy that minimizes barriers to breastfeeding are associated with increased breastfeeding rates.

# Breastfeeding and NOWS

- Consistent Literature findings – more than a dozen studies
- Breastfeeding or breastmilk feeding associated with
  - Less severe opioid withdrawal symptoms
  - Shorter hospital stays
  - Less likely to be treated with medication for NOWS; less likely to need two meds
- Study Limitations
  - Retrospective study design – socioeconomic differences in who breastfeeds; when control for SES, breastmilk independent predictor of NOWS severity
  - Few differentiate breastfeeding from breastmilk feeding
  - Few examined quantity of breastmilk exposure - limited data support exclusive breastmilk has larger impact on short-term NOWS outcomes than partial
  - None examine impact on maternal outcomes

## Mechanism(s) for improved outcomes with breastfeeding?

<b>Infant suck and swallow</b>	<ul style="list-style-type: none"><li>• Intrauterine drug exposure impacts development of brainstem respiratory and swallow centers</li><li>• Breastfeeding more natural/ innate way to feed infants – more control</li></ul>
<b>Hyperphagia</b>	<ul style="list-style-type: none"><li>• Small, frequent feedings initiated at early hunger cues hallmark of breastfeeding</li><li>• Small volume feedings of colostrum maybe better tolerated and more calming</li><li>• Decreasing fussiness may decrease points given for crying and excessive suck</li></ul>
<b>Skin-to-skin care</b>	<ul style="list-style-type: none"><li>• Promote more diverse and healthier microbiome (animal models: opioids modify gut microbiome and gut-brain connection)</li><li>• Helps regulate infant temperature</li><li>• Lower rates of infectious diarrhea</li></ul>
<b>Breastmilk more compatible with infant gut</b>	<ul style="list-style-type: none"><li>• Breastmilk digested faster, emptied more quickly from stomach and small intestines</li><li>• May reduce GI symptoms (reflux, vomiting, diarrhea)</li><li>• May reduce Finnegan scoring from GI symptoms</li></ul>
<b>Small amount med in milk</b>	<ul style="list-style-type: none"><li>• Case series (n=2) abrupt BF cessation with methadone associated with readmission</li><li>• Another larger studies not shown this – and no reports in older infants</li></ul>

## Possible Mechanism(s) for improved outcomes with breastfeeding?

### Promotes Maternal-Infant Attachment

- Opioids impact reward pathways in brain
- Women with OUD have their own experiences with attachment and stress
- Infants with poor attachment experience significant long-term behavioral, psychological and emotional difficulties
- Skin-to-skin care may be especially beneficial as promotes early attachment
  - Oxytocin surge that occurs with each breastfeeding supports relaxation and reduces stress responses
  - Women who breastfeed have higher levels of oxytocin and prolactin, and lower levels of cortisol

### Reduce guilt of NOWS in baby

- Women report feelings of guilt around exposing their infant to their medications
- Act of breastfeeding may help a mother with her feelings of guilt when she sees how it calms her infant and helps decrease neurobehavioral difficulties

### Promote ongoing maternal behavior changes

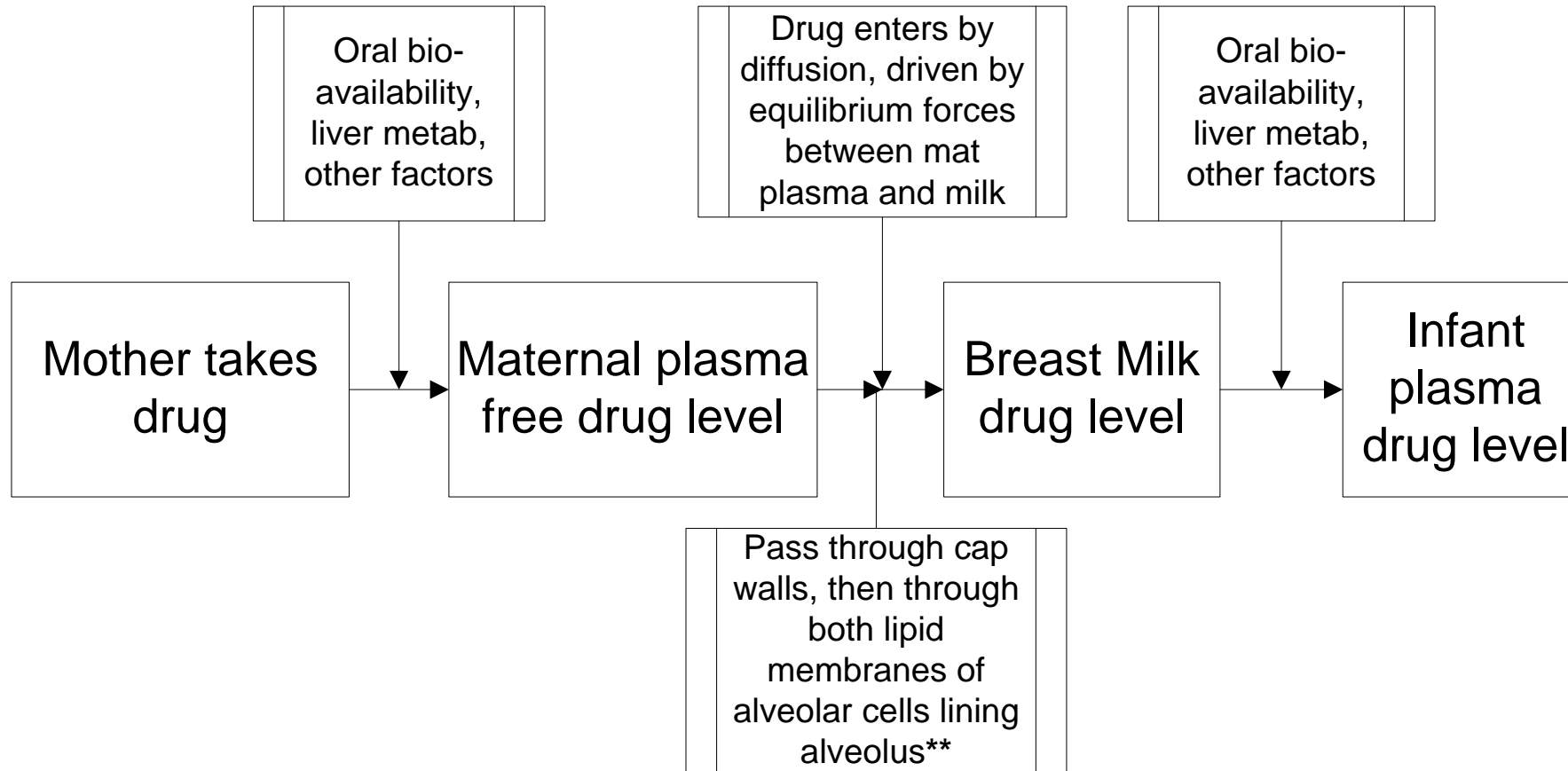
- Reduce substance use during pregnancy –
- Build on this motivation of physical connection
- Prolong abstinence from use – demonstrate longer success builds over time

# Do women with OUD Breastfeed?



At lower rates than  
women without OUD

# Transfer of drugs from mother to infant via breast milk



\*\* first 72 hours, can pass between alveolar cells because large gaps exist. By end of 1st week, alveolar cells swell under influence of prolactin, thus preventing transcellular entry of drugs and proteins into milk

## METHADONE

- AAP Recommendations
  - 1994 not if dose > 20 mg/day
  - 2001 removed from contraindicated list (Retired)
- LactMed 1-3% RID, occasionally 5-6%
- Gets into milk – variable – but orders of magnitude less than in womb
- OK even at high mat dose – no clear association between mat. dose and breastmilk concentration

- Caution if starting long-acting opioids postpartum while woman nursing!!
- Infant naïve to long-acting opioid – concern for respiratory depression

## BUPRENORPHINE

- Low oral bio-availability
  - Given as sublingual tablet, film, depot
- Low drug concentrations in serum and urine of breastfed infants
- Low RID (<1%) of drug and metabolites

## NALTREXONE

- Limited data indicate minimally excreted into breastmilk.
- Low levels drug and metabolite in milk but low oral bioavailability – one infant none detected
- If naltrexone needed by mother, not a reason to discontinue breastfeeding



## Green Light

This substance may continue to be used by the breastfeeding mother.  
This mother may continue to breastfeed or provide expressed breast milk with her current diagnosis or condition.

Substance or Condition	Special Considerations
Acetaminophen + oxycodone (Percocet)	When the substance is prescribed. If NAS is observed in the infant, continue to encourage breastfeeding.
Buprenorphine (Subutex)	When the substance is prescribed as part of a treatment program. If NAS is observed in the infant, continue to encourage breastfeeding.
Buprenorphine + Naloxone (Suboxone)	When the substance is prescribed as part of a treatment program. If NAS is observed in the infant, continue to encourage breastfeeding.
Caffeine	Moderate intake. If the infant appears jittery or irritable, reducing caffeine consumption may be advised.
Lorazepam	When the substance is prescribed. If NAS is observed in the infant, continue to encourage breastfeeding.
Methadone	When the substance is prescribed as part of a treatment program. If NAS is observed in the infant, continue to encourage breastfeeding.
Selective Serotonin Reuptake Inhibitors (SSRIs) <ul style="list-style-type: none"><li>• citalopram (Celexa)</li><li>• escitalopram (Lexapro),</li><li>• fluoxetine (Prozac)</li><li>• fluvoxamine (Luvox)</li><li>• paroxetine (Paxil)</li><li>• sertraline (Zoloft)</li></ul>	<p>Some SSRIs are preferred over others; however, <b>all SSRIs are considered compatible with breastfeeding</b>. Discussion regarding specific SSRIs can occur between the mother and her prescriber.</p> <p>If NAS/toxicity is observed in the infant, continue to encourage breastfeeding.</p>

## Yellow Light

This substance may continue to be used by the breastfeeding mother **with caution, but it is recommended to reduce or eliminate use**. This mother may continue to breast feed or feed expressed breast milk with the listed diagnosis or condition **under the specified conditions**.

Substance or Condition	Special Considerations
Cannabis	Data is insufficient to determine if maternal cannabis use is safe for the breastfeeding infant. At this time while the mother may continue to breastfeed, it is strongly encouraged that she stops cannabis use.
Hepatitis B	Breastfeeding should not be delayed for the infant to receive the Hep B immunization. In the case of an open wound on the nipple, the mother should temporarily suspend breastfeeding until the wound has healed while pumping to support her milk supply. Contact lactation services for a consultation.
Hepatitis C	In the case of an open wound on the nipple, the mother should temporarily suspend breastfeeding until the wound has healed while pumping to support her milk supply. Contact lactation services for a consultation.
Herpes, inactive or active with no lesions on the breast	When herpes is active with lesions present on the breast, breastfeeding should be suspended until the lesions have resolved. The mother should pump to support her milk supply. Contact lactation services for a consultation.
Nicotine	All mothers should be encouraged to reduce or eliminate nicotine use. Breastfeeding may continue while reducing or eliminating use of nicotine. Recommendations include smoking after, not before, feeding and smoking outside the infant's home.

Hepatitis C – theoretical risk of transmission – no reported cases  
Need to prevent cracked nipples!

## Red Light

This substance is **contraindicated** during breastfeeding.

This mother **may not** continue to breastfeed with the listed diagnosis or condition.

Substance or Condition	Special Considerations
Cocaine	Street drugs are contraindicated during breastfeeding. See lactation services for the Academy of Breastfeeding Medicine's recommendations for mothers with cocaine substance use disorder.
Heroin	Street drugs are contraindicated during breastfeeding. Mothers who admit to heroin use during pregnancy should be encouraged to breastfeed during their hospital stay and enter a drug treatment program, but discontinue breastfeeding if they plan to continue heroin use.
HIV	At this time the CDC advises against breastfeeding for HIV+ mothers, even when being treated with anti-retroviral therapy.

**\*\*This list is not meant to imply absolute safety of any medication while pregnant or breastfeeding\*\***

5/2019

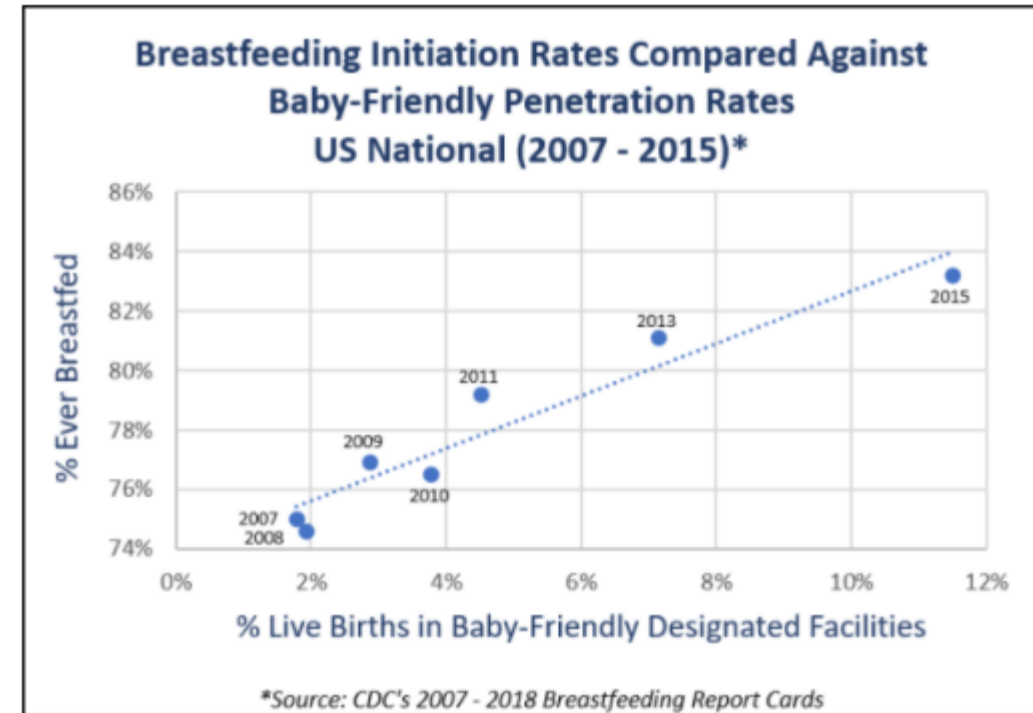
**Magland, Eliza RN, IBCLC; Migone, Celina MD; Lembeck, Amy DO**

# Relative Infant Dose (RID) often Misinterpreted

- If mother's daily methadone dose is 100mg/day, weighs 70kg, and peak methadone concentration in breastmilk 0.5 mg/L
- $\text{TID (mg/kg/day)} = (\text{max mg/L concentration of methadone}) \times (0.15 \text{ L/kg/day})$ 
  - $(0.5 \text{ mg/L} \times 0.15 \text{ L/kg/day}) = \boxed{0.075 \text{ mg/kg/day}}$
  - Maternal Weight-adjusted dose  $(100 \text{ mg/day} / 70 \text{ kg}) = \underline{1.43 \text{ mg/kg/day}}$
  - **Assume same exposure across dosing interval and exclusive BF so worst-case scenario**
  - Few studies measure levels in infant directly ...
- $\text{RID (\%)} = \text{TID} / (\text{mat daily mg/day methadone dose} / \text{maternal kg weight})$   
 $\text{RID} = (0.075 \text{ mg/kg/day} / 1.43 \text{ mg/kg/day}) \times 100 = \mathbf{5.2\%}.$   
RID of < 10% often considered acceptable with lactation

# Hospital Policies Impact Breastfeeding

- Baby Friendly Hospital Program (WHO & UNICEF) started 1991
- Baby Friendly USA oversees U.S. program
- PA has 14 designated hospitals
- Keystone 10 Initiative built from BFHI
- How does hospital policy impact BF among women with OUD?
  - 3 examples (Dartmouth, Yale, BMC)



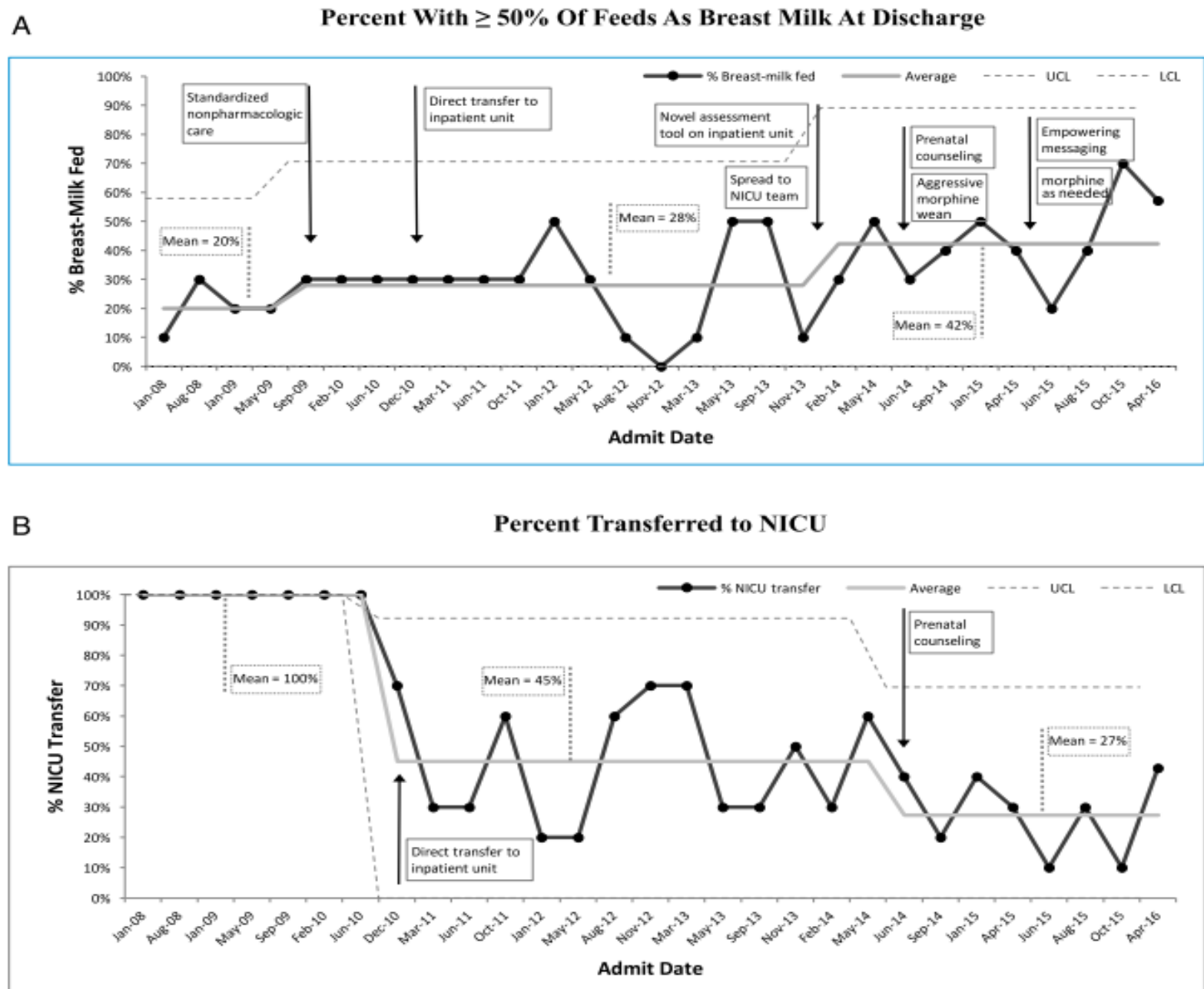
# Made Mother/Parent 1st Line Treatment for NOWS

- Dartmouth QI experience (Holmes et al. Pediatrics 2016:137(6))
  - ↓ proportion of infants treated for NAS: 46 to 27%
  - ↓ use of phenobarbital: 13% to 2%
  - ↓ average LOS for morphine treated newborns: 16.9 to 12.3 days
  - ↓ av. hospital costs/treated baby \$19,737 to \$8755; at-risk: \$11000 to \$5300
  - No adverse events, and 30-day readmission rates remained stable
- Parents presence at bedside alone, after adjusting for BF, associated with shorter LOS and treatment rate
- New model associated with more breastmilk feeding

# YALE EXPERIENCE – developed Eat-Sleep-Console

Grossman, M. R., et al. (2017). "An Initiative to Improve the Quality of Care of Infants With Neonatal Abstinence Syndrome." Pediatrics.

- Prenatal counseling
- Empowering messaging



**FIGURE 3**

A (% breast-milk fed) and B (% transferred to the NICU), SPC p-charts where each point represents 10 infants exposed to methadone prenatally. The centerline for A shifted upward in February 2010 and January 2014. The centerline for B shifted downward in January 2010 and June 2014. LCL, lower control limit; UCL, upper control limit.

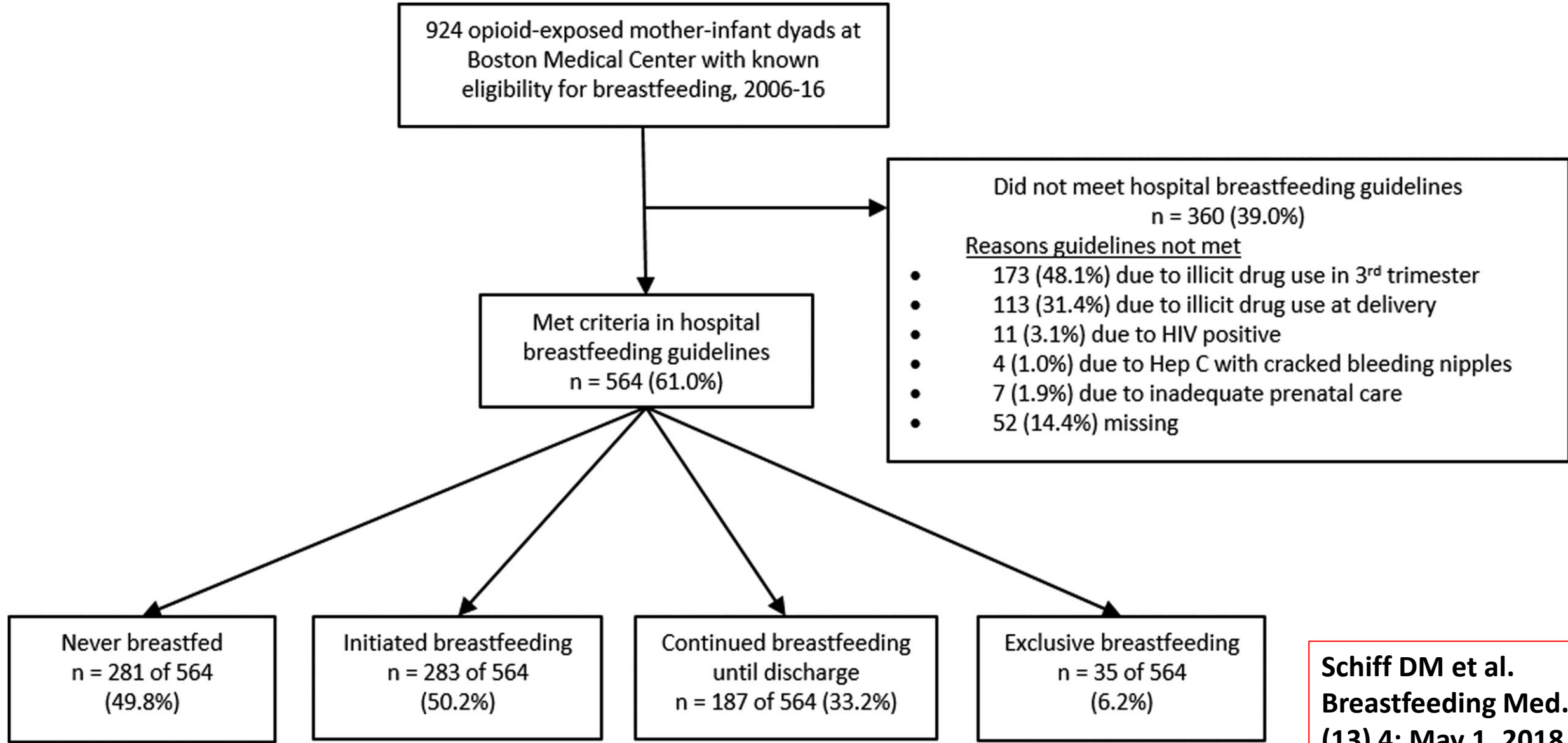
# Boston Medical Center – revised guideline over time

- Aims of guidelines are to
  - Safely promote BF in all mothers with OUD who are in recovery
  - Improve NAS outcomes by use of BF as key nonpharmacologic treatment
  - Improve staff communication and consistency on subject of BF
- Expanded on ABM criteria by
  - Defined consistent prenatal care as attendance of at least 50 % of scheduled visits, including 2 visits within last 2 months
  - “4-week guideline” of no positive urine drug screens for BF initiation

Wachman, E.M.. *Revision of Breastfeeding Guidelines in the Setting of Maternal Opioid Use Disorder: One Institution's Experience. J Hum Lact*, 2016. 32(2): p. 382-7.

Period	Participating in addiction Rx program	Prenatal care requirements	U-tox : # wks NO + test before delivery	BF eligibility guidelines and institution BF improvements
01/06–12/09	Yes	None	12	2006 1 <sup>st</sup> Written BF Guidelines
01/10–12/12	Yes	≥12 wks before delivery, ≤2 missed visits	10	2010 Revised Written BF Guidelines 2010 Brochure - Benefits of BF in OUD – devel. + distributed in prenatal clinic
01/13–03/15	Yes	≥12 wks before delivery, no more than 2 missed visits	10	2013 NAS QI Comm. formed; statewide QI collaborative started 2013–14 NAS QIC focus - std monitoring of NAS infants and early pharm Rx 2015 NAS QIC reviewed BF guidelines
04/15–12/16	Yes	Attendance at ≥50% or ≥5 prenatal visits	4	April 2015 revised BF guidelines; Started active face-to-face prenatal BF education 2015 NAS QIC focus: (1) skin-to-skin, (2) rooming-in, (3) lactation support, after mothers d/c, but infant still admitted.

# EXPERIENCE AT BOSTON MEDICAL CENTER (BABY FRIENDLY) 2006-16



**Schiff DM et al.**  
**Breastfeeding Med.**  
**(13) 4: May 1, 2018**

FIG 2. Trends in breastfeeding eligibility, initiation, and continuation among 924 opioid-exposed mother-infant dyads, Jan 2006–Dec 2016.

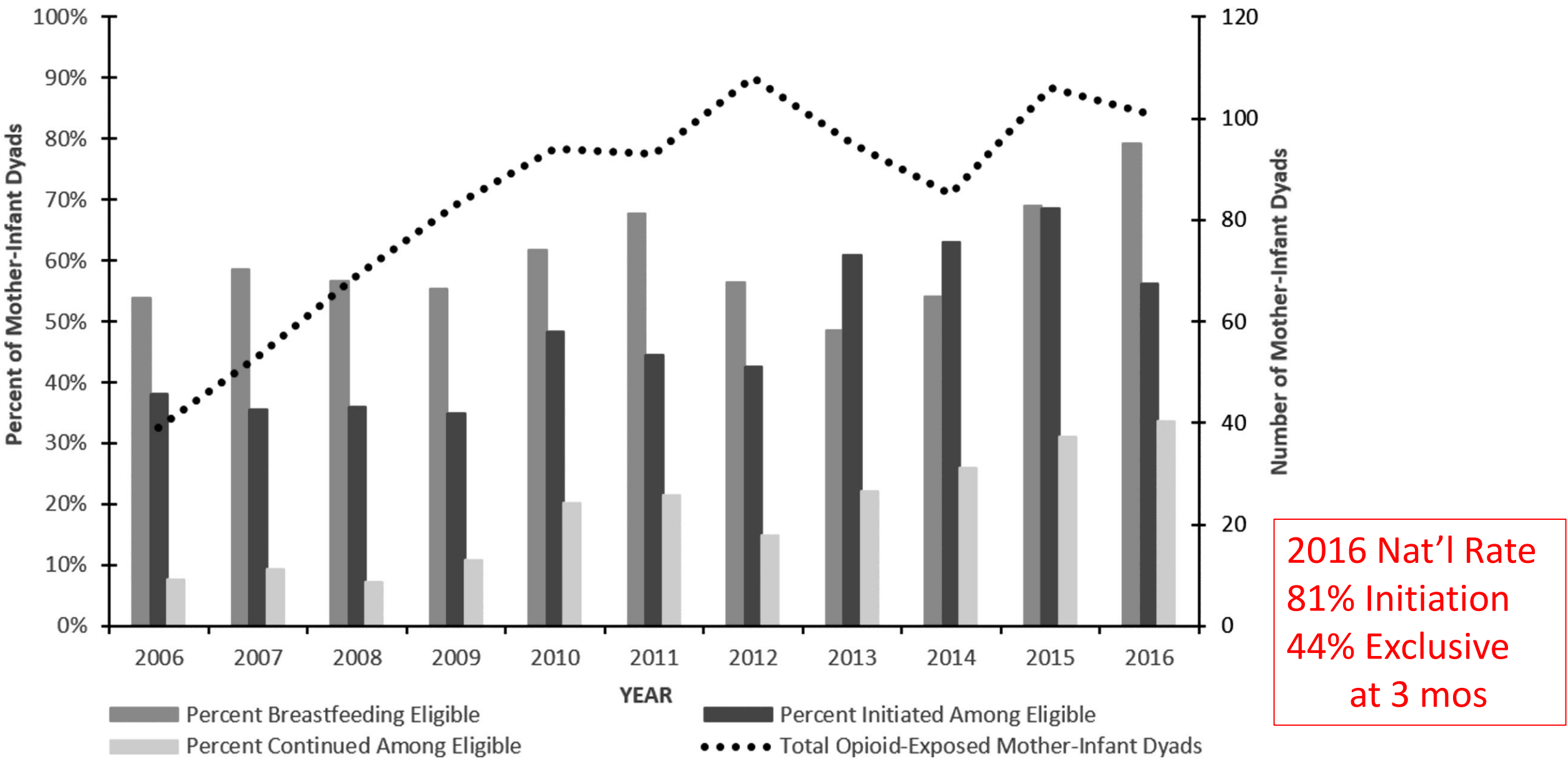


Table 3. Associations of Hospital Delivery Year, and Maternal and Infant Characteristics with Breastfeeding Initiation and Continuation Among Eligible Mother-Infant Dyads at Boston Medical Center 2006–2016

	<i>Initiated breastfeeding</i>			<i>Continued to discharge</i>		
	<i>Unadjusted OR Model 1 (95% CI)</i>	<i>aOR Model 2<sup>a</sup>(95% CI)</i>	<i>aOR Model 3<sup>b</sup>(95% CI)</i>	<i>Unadjusted OR Model 1 (95% CI)</i>	<i>aOR Model 2<sup>a</sup> (95% CI)</i>	<i>aOR Model 3<sup>b</sup> (95% CI)</i>
<b>Hospital characteristics, delivery year as proxy</b>						
Period 1 (01/2006–12/2009)	Ref.	n/a	Ref.	Ref.	n/a	Ref.
Period 2 (01/2010–12/2012)	1.47 (0.93–2.33)	n/a	1.15 (0.70–1.91)	2.50 (1.21–5.17) <sup>c</sup>	n/a	2.20 (0.94–5.13)
Period 3 (01/2013–03/2015)	3.09 (1.82–5.23) <sup>c</sup>	n/a	2.84 (1.61–5.02) <sup>c</sup>	3.61 (1.64–7.93) <sup>c</sup>	n/a	3.11 (1.29–7.55) <sup>c</sup>
Period 4 (04/2015–12/2016)	2.83 (1.74–4.61) <sup>c</sup>	n/a	2.60 (1.51–4.50) <sup>c</sup>	1.25 (0.64–2.43)	n/a	1.38 (0.58–3.29)

## Adjusted models

- Reducing restrictions in hospital BF guidelines and prenatal BF education
- Increased odds of any breast milk vs infants born with earlier hospital policies
- Cesarean vs. vag delivery: aOR 0.3 [95% CI 0.2–0.6] &
- Length of infant hosp: aOR 0.94 [95% CI 0.92–0.97] negatively associated with BF continuation

# Published Guidelines Addressing Breastfeeding and OUD/SUD

<a href="#"><u>Academy of Breastfeeding Medicine, Revised 2015</u></a>	Clinical Protocol #21: Guidelines for Breastfeeding and Substance Use or Substance Use Disorder
<a href="#"><u>American College of Obstetrics and Gynecology (ACOG) Committee Opinion (# 711) - Aug 2017</u></a>	Opioid Use and Opioid Use Disorder in Pregnancy
American Academy of Pediatrics (AAP) Pediatrics 2012	Breastfeeding and the use of human milk.
	AAP Neonatal Drug Withdrawal
<a href="#"><u>Substance Abuse and Mental Health Services Administration: HHS Pub #(SMA)18-5054</u></a>	Clinical Guidance for Treating Pregnant and Parenting Women with Opioid Use Disorder and Their Infants
<a href="#"><u>Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN)</u></a>	Practice Brief # 4 Breastfeeding Recommendations for Women Who Receive Medication Assisted Treatment for Opioid Use Disorders (2016)
<a href="#"><u>World Health Organization (WHO)</u></a>	Guidelines for the Identification and Management of Substance Use and Substance Use Disorders in Pregnancy (2014)
<a href="#"><u>New South Wales, Australia</u></a>	<a href="#"><u>Clinical Guidelines for the Management of Substance Use During Pregnancy, Birth and the Postnatal Period (2014)</u></a>
<a href="#"><u>Canadian Pediatric Society (updated 2019)</u></a>	Managing infants born to mothers who have used opioids during pregnancy

# Summary of Policies

- In general policies support breastfeeding among women with OUD
- If they have
  - demonstrated some level of adherence to drug treatment program
  - allow communication between members of care team with their drug treatment program
  - received some level of prenatal care.
- Specifics of adherence vary and are not consistently defined likely due to limited literature to guide practice recommendations

# New South Wales

If a woman who breastfeeds chooses to use substances, a harm minimisation approach is recommended, provided that:

- the woman is informed about the likely effects on the infant of the substances she is, or may, use.
- the woman is assisted to plan minimum exposure of the infant to the effects of these substances.

Appropriate support for substance-dependent women who wish to breastfeed requires integrated services from drug and alcohol services, paediatrician, lactation consultant or other health professional with breastfeeding expertise.

Comment In these guidelines, a 'harm minimisation approach' does not mean that the woman should be routinely advised against breastfeeding.

In advising substance-dependent women with regard to breastfeeding, the specific potential risks in each woman's individual circumstances should be weighed up against the benefits of breastfeeding, and she should be informed of them

As with all breastfeeding women, substance dependent women should not wean rapidly.

# ABM Clinical Protocol #21: Guidelines for BF and Drug-Dependent Woman (revised 2015)

[www.bfmed.org](http://www.bfmed.org) (free BF protocols)

## Recommend BF

- Individualize Plan
- In treatment program and consent to communicate
  - Confirm with counselor treatment adherence
  - Confirm with mother plan for continued care after delivery
- 90 days drug free
- UDS negative at delivery
- Received prenatal care

## Recommend NOT Breastfeeding

- Limited or late prenatal care
- Relapsed < 30 days before delivery
- Not willing to engage in treatment and/or give consent for communication among providers
- Urine Drug Screen positive at delivery
- No plan for postpartum treatment
- Behaviors or other indicators of active illicit use

A retrospective cohort study examining the utility of perinatal urine toxicology testing to guide breastfeeding initiation - PMC (nih.gov) | Addict Med. 2021 Jul-Aug; 15(4): 311–317.

**1034** Deliveries to women with opioid use disorder between 2006-2015 (by 923 unique women)

**489** Deliveries excluded (by 420 unique women)

- *Medication treatment at delivery:*  
**187** deliveries to women not on buprenorphine or methadone treatment at delivery
- *Urine Toxicology Data*  
**141** deliveries to women with no third trimester urine toxicology test  
**153** deliveries to women with no postpartum urine toxicology test
- *Contraindications to breast feeding*  
**3** HIV positive  
**5** Hepatitis C positive with cracked, bleeding nipples

**545** Deliveries included (by 503 unique women)

Times examined: 1) 90 to 31 days before delivery, 2) 30 days before and up to delivery hospitalization, 3) delivery hospitalization.  
Coincide with 2015 ABM breastfeeding guidelines

	90-30d before delivery			30d before delivery			At delivery		
Post-Partum	≥ 1 Positive UDT 90-31d before delivery	Negative UDT 90-31d before delivery	Total	≥ 1 Positive UDT 30d before delivery	Negative UDT 30d before delivery	Total	≥ 1 Positive UDT at delivery	Negative UDT at delivery	Total
≥ 1 Positive UDT Post- Partum	57	72	129	33	93	126	34	93	127
Negative UDT Post- Partum	100	291	391	59	339	398	27	333	360
Total	157	363	520	92	432	524	61	426	487
Sensitivity	44.2%			26.2%			26.8%		
Specificity	74.4%			78.5%			92.5%		
Pos Predictive Value	36.3%			35.9%			55.74%		
Neg Predictive Value	80.2%			85.2%			78.2%		
Chi-Squared	P=0.033			P=0.006			P<0.001		

Multivariable Model using Generalized Estimating Equations (GEE)\* Looking at Factors Predictive of Any Non-Prescribed Substance Use Post-Partum

Parameter	Estimate	Standard Error	aOR**	95% CI	
Positive Delivery UDT	1.31	0.36	3.72	1.84	7.51
Positive 30d to Delivery hospitalization UDT	0.34	0.34	1.40	0.73	2.72
Positive 90-31d before Delivery	0.52	0.28	1.68	0.98	2.90
White non-Hispanic v. non-white race/ethnicity	-0.47	0.34	0.62	0.32	1.20
Public insurance v. Private/other	0.11	0.49	1.11	0.43	2.89
Methadone v. Buprenorphine treatment at delivery	0.67	0.25	1.96	1.20	3.22
Any psychiatric diagnosis	0.27	0.27	1.30	0.77	2.21
Hepatitis C	-0.038	0.014	0.97	0.94	0.99
Adequate v. Intermediate/ Inadequate Prenatal Care	0.46	0.26	1.59	0.95	2.64

Main outcome: any non-prescribed substance in first six months following delivery in postpartum women with OUD

# Conclusions of Authors

- Non-prescribed substance use declined throughout pregnancy, with lowest rate at delivery, but then increased in postpartum
- PPV and sensitivity of prenatal UDT results to predict postpartum use significantly lower than NPV
  - Suggests that while having no non-prescribed use prenatally correlated with continued abstinence, corollary was less strong
- For women who had a positive test within third trimester, multivariable model found
  - Non-prescribed substance use at delivery, but not between 90 and 31 or between 30 days and delivery hospitalization statistically associated with ongoing non-prescribed use postpartum.

# Donor Milk and NOWS

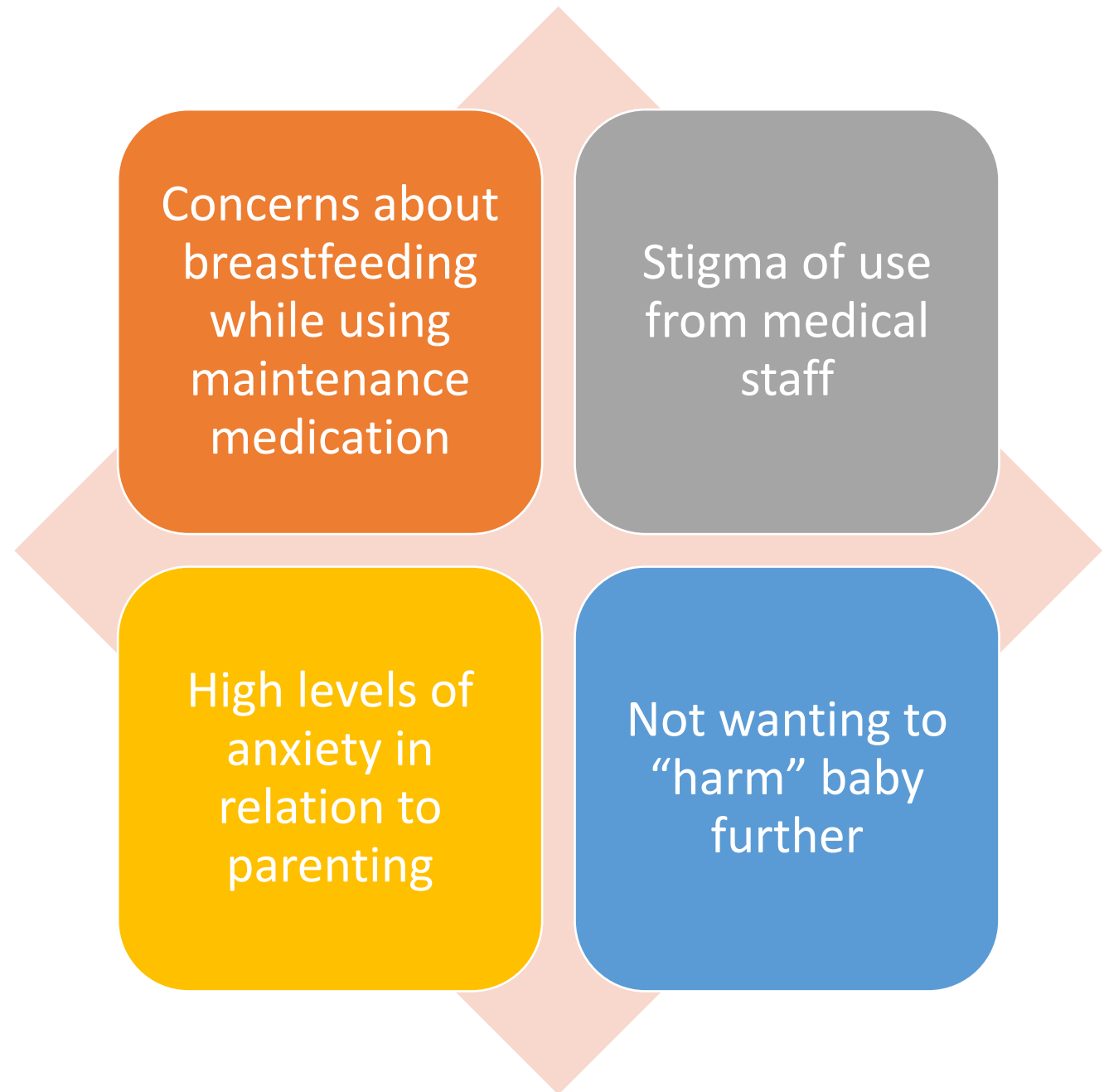
- Alexander C, Radmacher P, Devlin L. Donor human milk may decrease severe gastrointestinal distress in infants with neonatal abstinence syndrome. *Pregnancy and neonatal med* 2017; 1(1):11-15.
- QI Project at Penn Highlands (DuBois, PA) – PRELIM DATA
  - Giving donor milk to opioid exposed infants in NICU
  - Supplement for those who are BF and insufficient milk
  - Seems to be reducing GI symptoms
  - ~70% sign consent for donor milk
- **Suzanne J McCullough BSN, RN-NIC**, Director NICU, Apnea & Reflux Clinic, and Developmental Clinic, [SJMcCullough@phhealthcare.org](mailto:SJMcCullough@phhealthcare.org)
- Magee started similar QI project
- Await results from QI projects

# Plan NOW Study (Dr. Krans)

## Interviewed 20 Participants about Breastfeeding

- While pregnant, 85% (17/20) expressed desire to breastfeed
  - At time of interview, only 25% (5/20) women were breastfeeding
  - 47% (8/17) women reported that they were unable to reach goals
- Women who stopped breastfeeding reported
  - Perceived lack of support
  - Difficulties getting baby to latch
  - Being too much work
  - Difficulties with feeding and pumping while baby is in NICU
    - Common concerns for all mothers

# Perceived Obstacles for Women with OUD with Breastfeeding



# Deterrents to breastfeeding

- Maternal Hepatitis C infection
- Maintenance medication
  - Not being told it would be okay to breastfeed while on MAT
  - Feeling guilty and not wanting baby to continue to get drug through breastmilk
- Too much work
- Painful
- Guilt if unable to produce enough milk

# Perceived benefits of breastmilk over formula

Breastfeeding  
allowed for  
bonding

Nutrients

Antibodies

Better for  
digestion

Helps babies to  
grow smarter  
and healthier

Calmer

Better  
attachment

# Best Practice Approach – Start Prenatally

- Feeding intention strongly predicts feeding practices
- Discussions should be non-rushed, explorative, safe
- Provide good resources (firstdroplets.com – great short videos)
- Need to provide enough information to make informed decision
- Raise possible concerns if she does not
  - What about Hep C – is that a concern for you?
  - Smoking?
  - Other meds?
  - Intro to lactation support (peer, LC, CLC) during pregnancy ideal to build trust
  - Encourage them to take classes if available

# Best Practice Approach – Postnatal

- Develop Hospital Policies and Engage Staff
- Skin-to-skin at delivery and ongoing
  - Explain why it's important – support father/partner as well
- Help with latch and positioning
  - Build confidence
  - Address pain if any
- Review maternal concerns (smoking, meds, etc...)
- If separation likely – discuss and order pump
- Develop contingency plan – what happens if scenarios
- Will need ongoing support ...

