

Screening Now: Standardizing Mental Health Assessments for NICU Parents

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Outline

Megan's story

Background

Quality improvement
initiative

Moving forward



From Surviving to Thriving: A Parent's Story of NICU Mental Health and Outcomes



Megan Paulsen, MD

NICU Mom to Peter & Nathaniel

Neonatologist, Children's Minnesota



Who I Am



Panic Attack



Invisible Wounds



The Outcomes We Miss



Context Matters



What Help Looked Like



The Next Frontier



Full Circle



Background



Perinatal Mental Health Concerns



The leading cause of
pregnancy-related death

<https://www.cdc.gov/media/releases/2022/p0919-pregnancy-related-deaths.html>



Problem

- Untreated parent mental health disorders are an adverse childhood experience with lasting impact (Earls et al)
- Parents of infants in the NICU are at increased risk for perinatal mental health concerns but miss screening at AAP-recommended well child check intervals when their infants remain hospitalized
- Mothers and partners have similar risk, but partners are less likely to receive mental health support or NICU support (Pace et al)
- AAP recommends depression screening during NICU stay as part of 2023 neonatal standards of care (Stark et al)



Data on Dads

- When dads (n=24) were screened at a postpartum primary care clinic, 30% screened positive for depression on EPDS (threshold 8 or suicidal ideation)
 - 26% were uninsured
 - 54% did not have a primary care providers

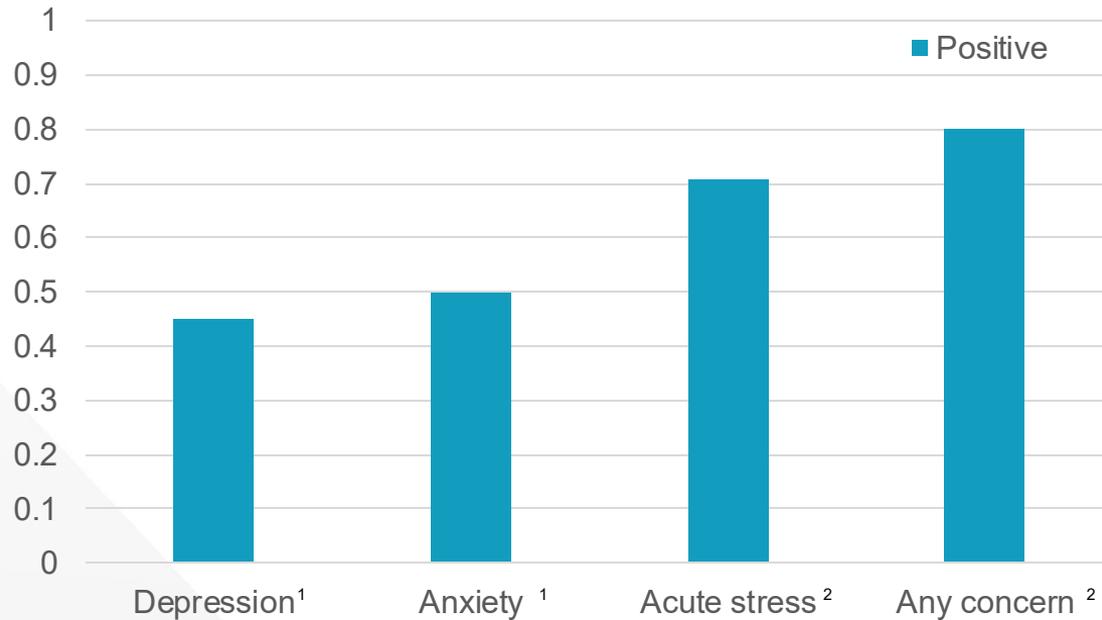
Wainwright et al. BMC Pregnancy Childbirth, 2023.
<https://doi.org/10.1186/s12884-023-05966-y>

- When dads have postpartum depression, children are twice as likely to experience 3+ Adverse Childhood Experiences by age 5

Schmitz. Abstract, AAP NCE, 2023.



Perinatal Mental Health Concerns in NICU Parents



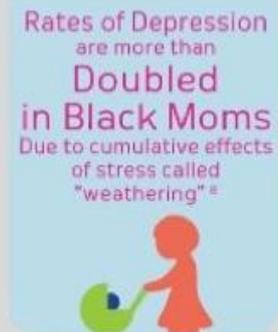
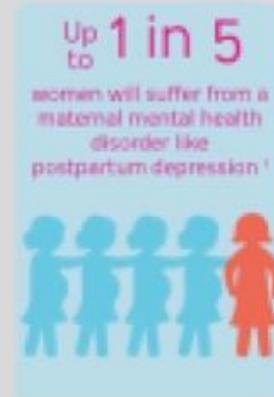
¹Pace et al., Evolution of depression and anxiety symptoms in parents of very preterm infants during the newborn period. *JAMA Pediatrics* (2016).

²Shaw et al., Screening for Symptoms of Postpartum Traumatic Stress in a Sample of Mothers with Preterm Infants. *Issues in Mental Health Nursing* (2014).



Equity concerns

- Birthing people from marginalized populations are at increased risk for mental health concerns in the perinatal period
- Karvonen et al. (2021)
 - Black birthing parents of preterm infants are more likely to have a mental health-related emergency room visit (RR 1.8, 95% CI 1.5-2) and hospitalization (RR 1.9, 95% CI 1.5-2.3)



Infographics by 2020Mom.org

Karvonen et al., AJOG MFM, 2021. <http://dx.doi.org/10.1016/j.ajogmf.2021.100546>



Pediatric Psychosocial Preventive Health Model



Pediatric Psychosocial Preventative Health Model. Copyright 2005 by the Center for Pediatric Traumatic Stress (Anne E. Kazak, PhD, ABPP, Director), Children's Hospital of Philadelphia



Gaps remain

How to screen?

Who to screen?

When to screen?

What tools to use?

What thresholds?

What to screen for?

- Depression
- Anxiety
- Trauma



Current systems

- Survey of CHNC NICUs (Lagoski et al, 2024)
 - 34/44 NICUs responded
 - Less than half (41%) screen parents for mental health concerns using a validated tool
 - Only 38% have psychologists within the NICU
- Survey of medical directors (Bloyd et al, 2022)
 - 75/700 NICUs responded
 - Less than half (44%) routinely screen parents for mental health concerns
 - Of these, less than half (45%) include fathers
 - Almost a quarter (23%) did not provide any mental health screening
 - Community NICUs less likely to provide screening compared to academic centers
 - Only 11% had psychologists within the NICU
 - Minority (30%) felt they had adequate psychosocial support within their units



Initial goal

Improve local
mental health
support for families
while in the NICU
through
implementation of
routine mental
health screening



Secondary goal

Use local screening dataset to

1. inform further interventions and
2. advocate for increased resources within our institution



Screening Implementation



Overview of initiative

- Multidisciplinary team created driver diagram and determined specific aim, measures, and screening protocols
- Social work team collected baseline data regarding mental health concerns detected through informal assessments (March – September 2022)
- Screening implemented in October 2022 using Edinburgh Postnatal Depression Scale (EPDS) and anxiety subscale (EPDS-3A), performed by social work team
 - Mother thresholds: EPDS 10, EPDS-3A 4
 - Partner thresholds: EPDS 8, EPDS-3A 4
 - Scores above threshold prompted referral to mental health or primary care providers per screening algorithm
 - Peer mentor/support group referrals were made per social work discretion
 - Parents receiving mental healthcare were not routinely rescreened
- Pre/post surveys regarding mental health support were given to parents attending NICU follow up visits



Specific Aim

- Implement standardized, longitudinal mental health screening for parents of infants hospitalized in the NICU at the AAP-recommended intervals of 1, 2, 4, and 6 months and increase screen completion rate from a baseline of 0% to 70% within 6 months.



Measures

Outcome

- Percent of parents undergoing depression and anxiety screening

Process

- Percent of parents screening above thresholds concerning for clinical depression and anxiety
- Percent of parents with positive screens who were referred
- Percent of parents declining screening or social work involvement



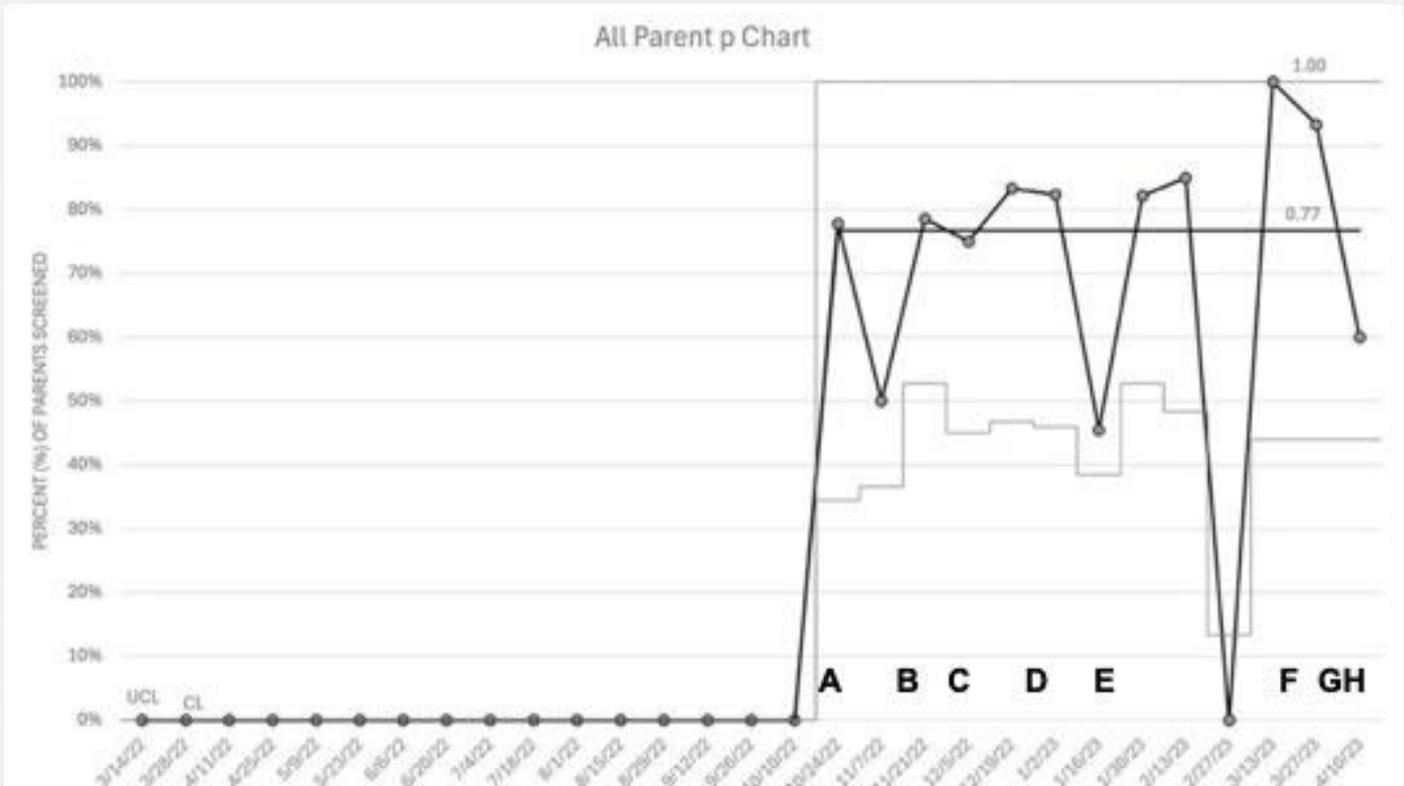
Balancing measures

Items on Survey

Parent	Mental health screening for NICU parents positively impacts the health of myself and my baby. I found it difficult to complete this questionnaire.
Social Work	Routine screening of parents in the NICU for perinatal mood and anxiety disorders is valuable. The workload associated with routine mental health screening for parents in the NICU is manageable.
Neonatologist	Routine screening of parents in the NICU for perinatal mood and anxiety disorders is valuable. The workload associated with routine mental health screening for parents in the NICU is manageable.



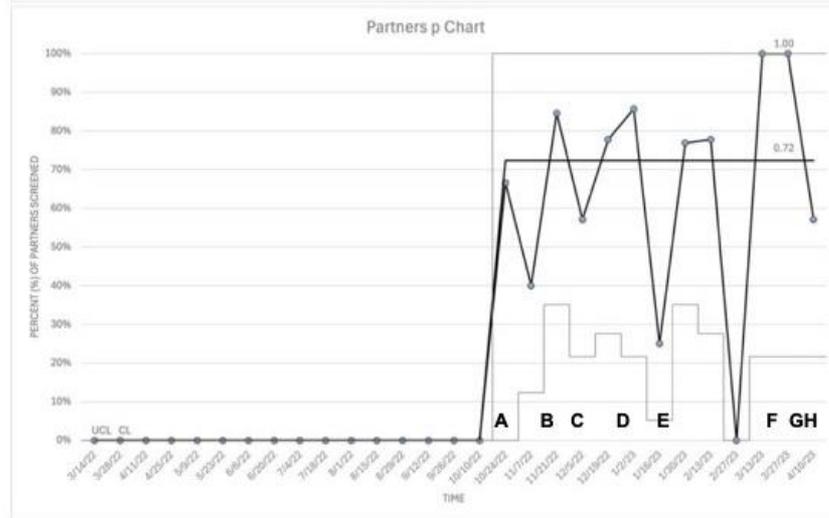
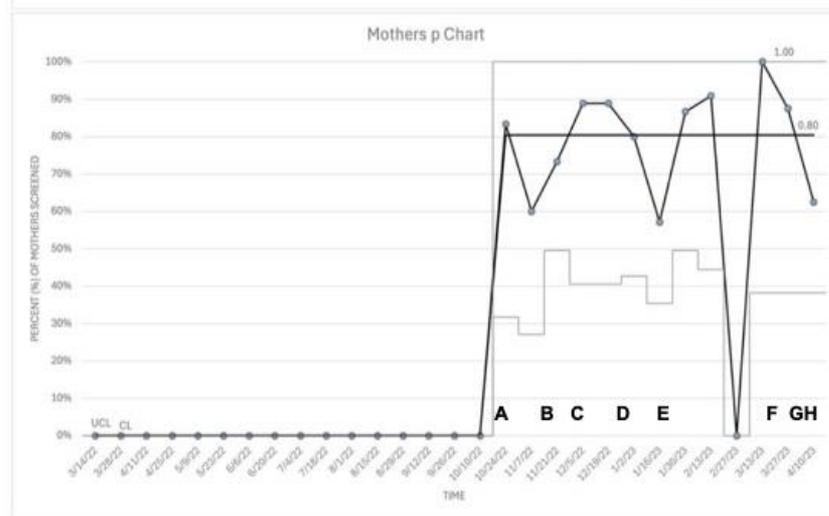
Results



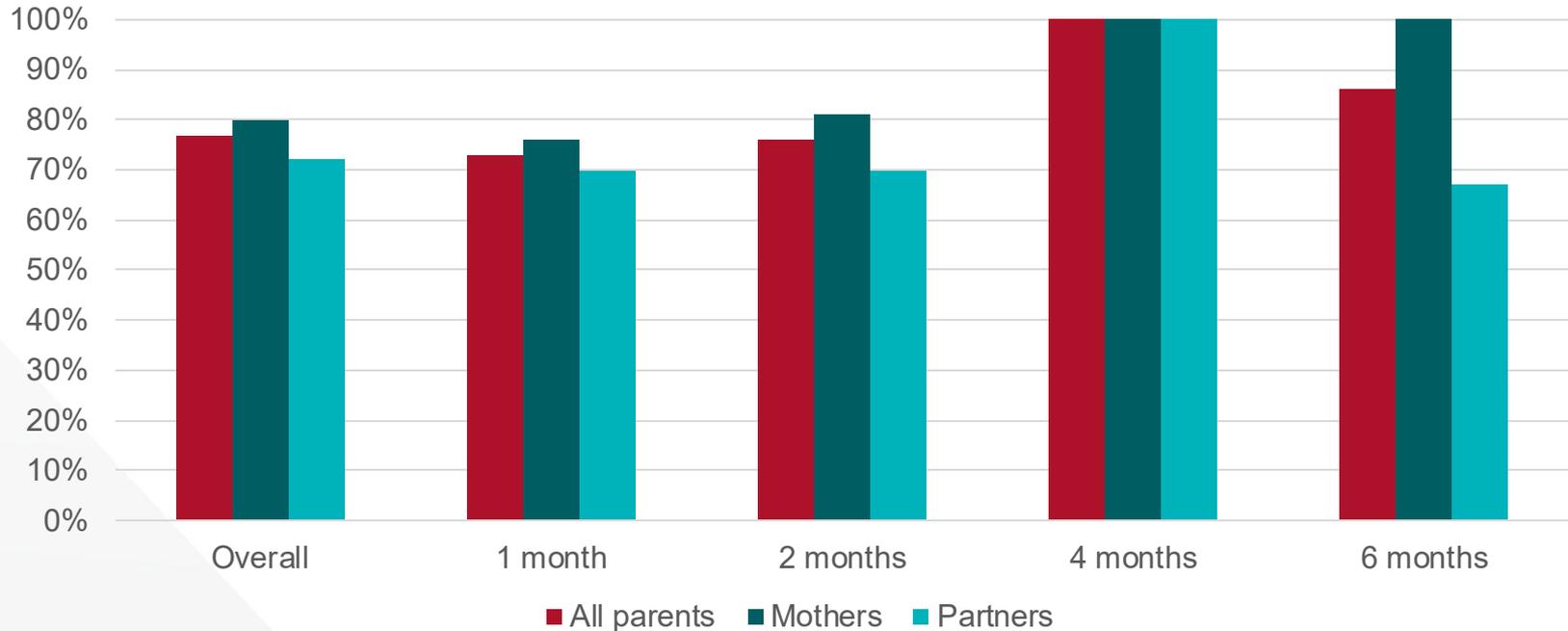
Swenson et al., 2025.



Screen completion by parent type



Screen completion rate by interval



Majority of concerns detected through informal assessments occurred within 1st week after birth

Informal assessments (6-month period)

52 parents with mental health concerns

- 73% detected within 1 week of birth

Standardized screening program (6-month period)

60/158 parents (38%) with mental health concerns

- Informal assessments continued unmeasured

Lesson

1



Standardized screening detected more concerns 1 month or more after birth

Informal assessments (6-month period)

- 12 concerns (23%) detected 1 month or more after birth

Lesson

2

Standardized screening program (6-month period)

- 60 concerns identified 1 month or more after birth



Standardized screening detected more parents with suicidal ideation

Informal assessments (6-month period)

- 21% of referred parents had established mental health providers

Standardized screening program (6-month period)

- 26% of referred parents had established mental health providers



Standardized screening detected more parents with suicidal ideation

Informal assessments (6-month period)

- No suicidal ideation detected

Standardized screening program (6-month period)

- 4% of parents who were screened disclosed passive suicidal ideation



Gap

- 46 parents (77%) were referred for positive screen
 - Missed referrals were most frequent when EPDS/EPDS-3A scores were near threshold for referral



Standardized screening detected more fathers with mental health concerns

**Informal assessments
(6-month period)**

- 6% were fathers/partners

**Standardized screening program
(6-month period)**

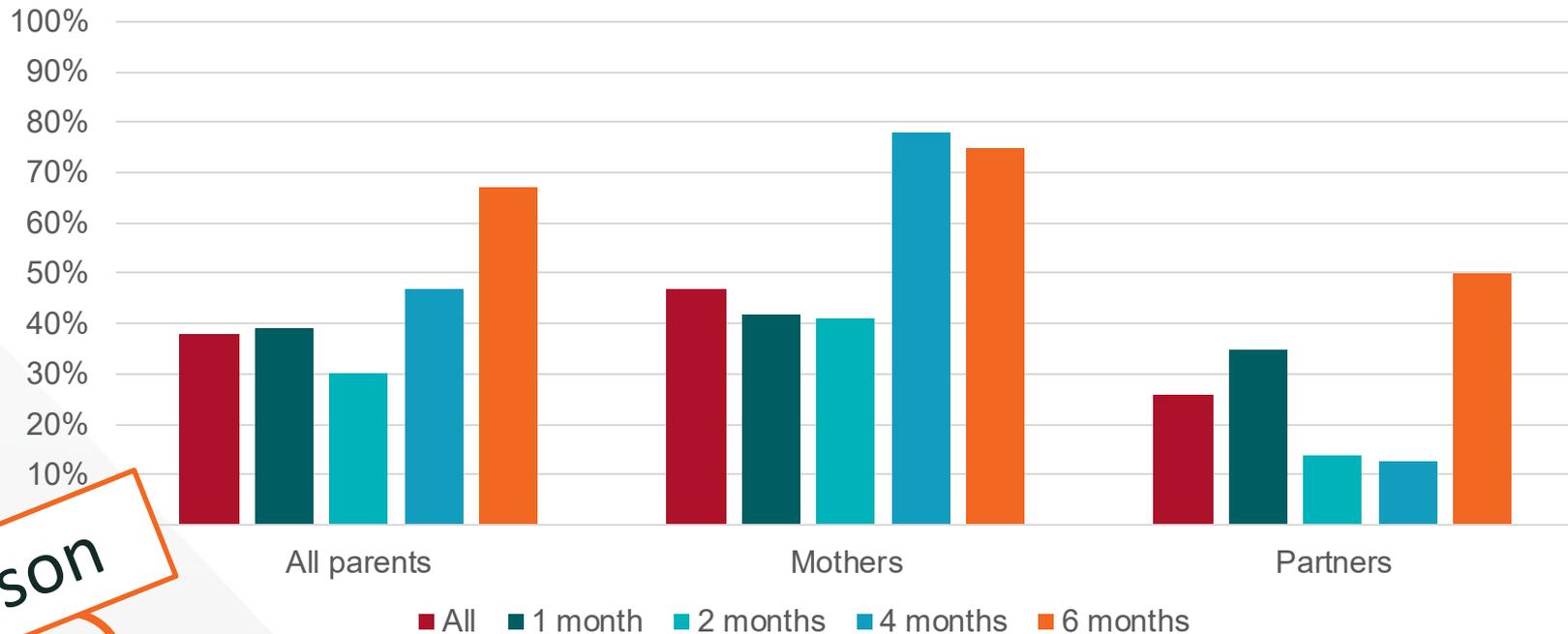
- 30% were fathers/partners

Lesson

3



Positive screens by screening interval



Lesson

4

Swenson et al., 2025.





Swenson, unpublished.

In parents' words

- “I wish there was **more [mental health] support in the last weeks of admission and in follow ups** for a few months after discharge. Those first few months on the [high acuity unit] were just a blur. It wasn't until later in the stay and immediately after discharge that **I needed support**”
- “We didn't feel the social worker helped much at the **end of our journey**”
- “I probably needed mental health support while my baby was in the NICU, but I **definitely** needed it after they came home”



Parent perceptions of screening



140/206 (68%) returned surveys on parent perceptions of screening

93% agreed screening was valuable
11% agreed screening was difficult



4 parents (2%) explicitly declined screens or social work involvement

1 declined screening, citing privacy concerns, lack of time
2 declined SW involvement
1 returned blank screen



Parent survey

- Using a Likert scale with options strongly agree, agree, slightly agree, slightly disagree, disagree, strongly disagree.

1. I have had concerns about my partner's* mental health since my child was born. *N/A option as well

2. I have had concerns about my mental health since my child was born.

3. NICU providers (for example, social workers, nurses, lactation consultants, developmental therapists, physicians) checked in with me about NICU-related stress during my baby's hospital stay.

4. My family received adequate resources (for example, peer support, peer mentorship, information about parent support organizations, written information, and education) from NICU providers for dealing with NICU-related stress.

5. My family received adequate referrals (for example, to a therapist or primary care doctor) for dealing with NICU-related stress.



Preliminary data

	Team checked in with me	Received adequate resources	Received adequate referrals
Prior to implementation of standardized, longitudinal MH screening mean (n=22)	1.7	2.5	2.9
After implementation of MH screening (n=5)	1.25	1.75	1.5

1. Strongly agree
2. Agree
3. Slightly agree
4. Slightly agree
5. Disagree
6. Strongly disagree



Therefore



DO screen despite imperfect systems,
prioritizing quality discussion of
screen results including resources
and referrals where appropriate



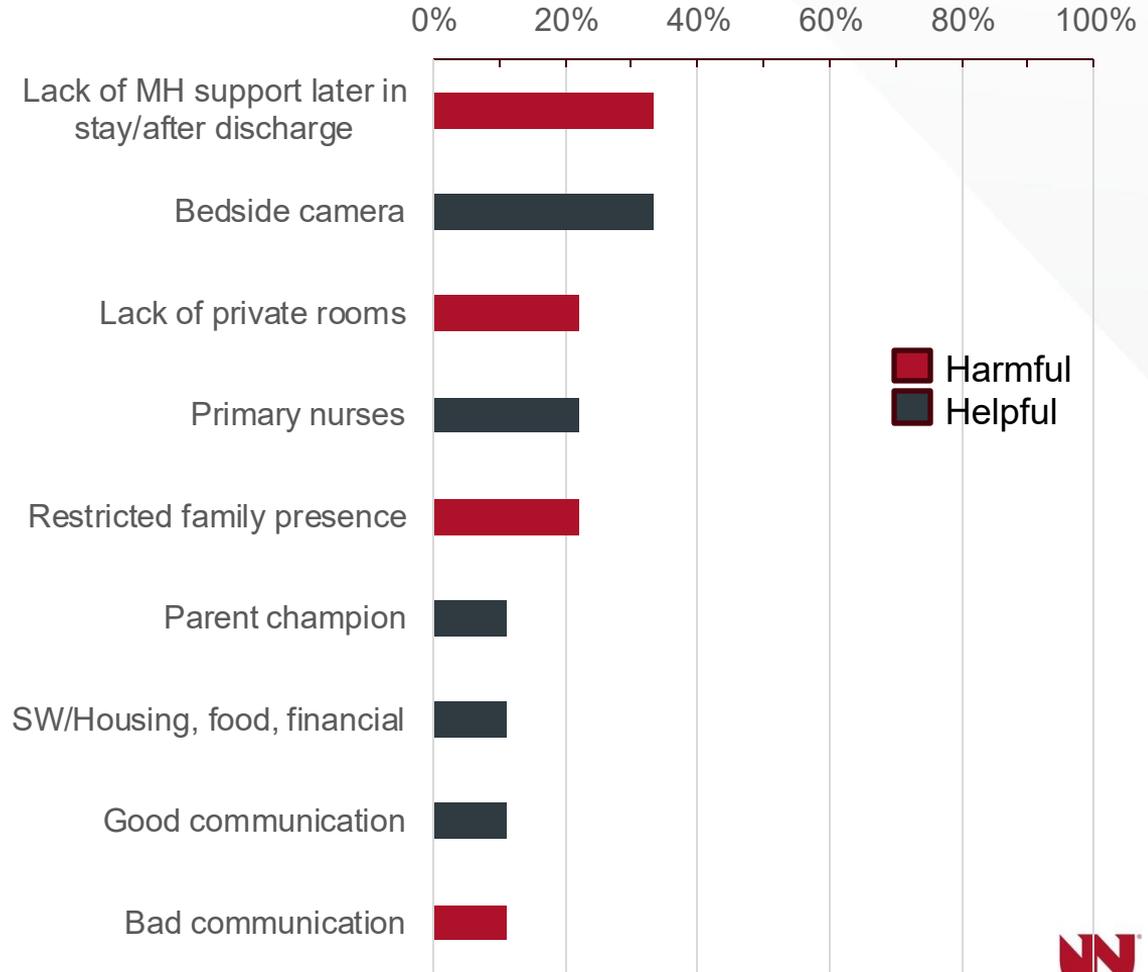
Do NOT screen just to check a box



Preliminary data from surveys of families in NICU follow up clinic

Pre-implementation of routine MH screening

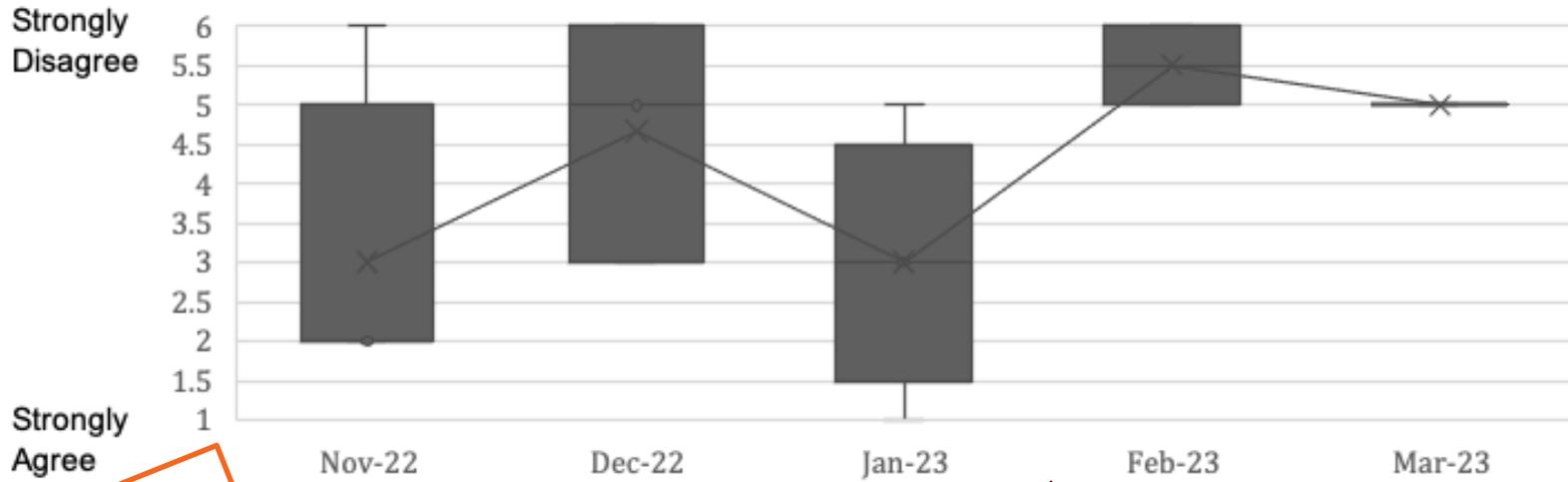
- 22 completed
- 9 parents left comments on what was working/what could have been better that fell into the following themes



Swenson, unpublished.



Social Work Perceptions of Workload as Manageable



Point after which only 2/5 NICU Social workers covering unit

Lesson

5



Limitations of data

- Screening rate was not 100%
- Some parents may not disclose mental health symptoms through screening
- Parents appear in dataset more than once
- Baseline data relied on a social work team
 - May underestimate mental health concerns detected through informal assessments
 - May overestimate concerns detected due to observer bias
- Unable to track concerns detected outside of screening during screening period



Limitations of screening program

- Did not assess trauma symptoms
- Did not screen post-discharge
- Did not track whether parents received mental healthcare after referral



Moving forward



Timing of screening

- Standardized screening may be especially beneficial beyond first few weeks of admission, when interactions with psychosocial team members may be less frequent
- Longitudinal screening appears to be important
- More work is needed to understand parent perspectives
 - Determine appropriate frequency of screening to detect symptoms that may arise later without becoming overly burdensome



Inclusion of partners

- Supporting mental health of all parents is important
- Mental health concerns in partners are likely to be missed without systematic attention and inclusion
- Partners are not routinely included in parent mental health screening that occurs during outpatient well child visits
- AAP Resolution
- Mental health of partners is less frequently discussed, not explicitly included in many perinatal mental health resources
 - Development of specific supports may be beneficial



Workload associated with screening warrants more attention

- Screening takes time to perform well
- Dedicated workforce is likely needed for screening programs to be successful
 - Designated staff for screening, referring, and auditing program (Perazzo et al)
- Others have recommended availability of psychotherapy within units (Hall et al)
- **We must advocate more psychosocial supports within our units and beyond**



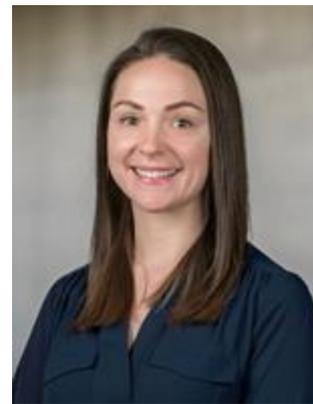
Consideration of electronic screening

- Possible benefits
 - Improve accuracy of algorithm adherence
 - Especially when algorithms are complex due to use of multiple screening tools or different thresholds
 - Decrease time between screen completion and parent discussion with psychosocial team member on screening results
 - Decrease workload associated with screening
 - Improve screen completion rate?



Thank you!

- **NICU families**
- **Family experts:** Stacy Abel, Francie Khalaf, Bridget Davern, Heather Brusegard
- **Social work team members at UMN:** Kate Goerd, MSW, LGSW, Rachael Stover-Haney, MSW, LICSW, Amy White, DSW, MSW, LICSW, Erin Morphew, MSW, LICSW, Anne Voeller-Witt, MSW, LICSW, Kalley Thurner, MSW, LGSW
- **Mentors:** Ann Downey, MB, BAO, BCh, MS, Megan Paulsen, MD, Erin Osterholm, MD, Maria Kroupina, PhD, Rachel Witt, MD, Shetal Shah, MD, Andrea Lampland, MD, Katie Satrom, MD, Ann Anderson Berry, MD, PhD, Lamia Soghier, MD, Levi Funches, MD, Valencia Walker, MD, MPH
- **Trainees:** Delaney Wilton, Brittney Skalland, Kelsey Carrigan, MD
- **Fellowship program directors:** Johannah Scheurer, MD and Cathy Bendel, MD
- **Others:** Marla Mills, NP, Arnoldo Curiel, EDD, MPA, Kristina Whitesell, MD, Christy Boraas, MD, MPH, Michael Hynan, PhD, Allison Dempsey, PhD, Sage Saxton, PsyD, Tiffany Willis, PsyD, Angelica Moreyra, PsyD, CHNC PMAD Focus Group



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