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Addressing Unmet Maternal Health Needs at a Pediatric Specialty Infant Care Clinic

Matthew L. Zerden, MD, MPH [a,b,*], Anna Falkovich, MPH [c], Erin K. McClain, MA, MPH [d], Sarah Verbiest, DrPH, MSW, MPH [a,d], Diane D. Warner, MD, MPH [e], Janice Kay Wereszczak, MSN, CPNP [e], Alison Stuebe, MD, MSc [a,c]

[a] *Department of Obstetrics & Gynecology, University of North Carolina School of Medicine, Chapel Hill, North Carolina*
[b] *WakeMed Health & Hospitals, Raleigh, North Carolina*
[c] *Gillings School of Global Public Health, University of North Carolina, Chapel Hill, North Carolina*
[d] *Center for Maternal and Infant Health, University of North Carolina, Chapel Hill, North Carolina*
[e] *Department of Pediatrics, University of North Carolina School of Medicine, Chapel Hill, North Carolina*

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A B S T R A C T

Objective: The objective of this intervention was to evaluate the feasibility of screening mothers of medically fragile infants in the domains of 1) depression, 2) tobacco exposure, and 3) family planning at a post-neonatal intensive care unit (NICU) developmental pediatric visit. Additionally, we sought to estimate the percentage who met criteria for further evaluation in the three domains assessed.
Methods: A cross-sectional questionnaire was administered to 100 caregivers of medically fragile infants at a specialty, post-NICU clinic visit. Participants' responses in three domains were evaluated and appropriate referrals were provided. Analysis was then restricted to the 87 biological mothers who completed the screening. Study staff contacted the mothers 2 months later to determine whether services had been accessed and to assess overall satisfaction with the screening within the pediatric visit. Qualitative interviews were conducted with pediatric clinic staff.
Results: Screening questionnaires were completed by 87 biological mothers. Twenty-two mothers (25%) met referral criteria. Pediatric clinic staff and providers were comfortable administering the screening instrument, and there was minimal disruption to clinic flow.
Conclusions: Mothers of medically fragile infants are likely to have unmet health care needs that can be identified at a specialty pediatric clinic visit. A screening and referral intervention can be implemented with minimal interruption in pediatric clinic flow and is acceptable to mothers and pediatric providers.

The postpartum period is challenging for all families, and it is particularly challenging for mothers of medically fragile infants (MMFI) who have been discharged from the neonatal intensive care unit (NICU). The complex health needs of these infants may lead MMFI to disregard their own physical and mental health, placing MMFI at risk for multiple health issues. These include postpartum depression, unhealthy coping behaviors such as tobacco use, and neglecting family planning, which will increase their risk for an unintended pregnancy.

MMFI are prone to mental health issues such as depression and post-traumatic stress disorder (Lefkowitz, Baxt, & Evans, 2010), resulting in a higher risk of developing depression compared with mothers of healthy infants (O'hara & Swain, 1996; Vigod, Villegas, Dennis, & Ross, 2010). The increase in mental health disorders may result from the increased psychological distress and anxiety experienced in the NICU (Bakewell-Sachs & Gennaro, 2004; Vigod et al., 2010). Moreover, stress and anxiety are major risk factors for tobacco use relapse among women who quit during pregnancy, with 85% resuming smoking by their child's first birthday (Phillips et al., 2012). In a pilot study of 28 MMFI attending a post-NICU pediatric infant clinic, unmet maternal health needs were

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* Correspondence to: Matthew L. Zerden, MD, MPH, 4002 Old Clinic Bldg, CB #7570, Chapel Hill, NC 27599-7570. Phone: (919) 843-5633; fax: (919) 843-6691.
E-mail address: mzerden@gmail.com (M.L. Zerden).

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common: 23% had no primary care provider, 23% were uninsured, and 38% reported they had recently delayed or ignored medical care for themselves during the past year (Anderson, Verbiest, S., Warner, D., Horton, E., McClain, E., Leff, S.,… Dean, A., 2013, unpublished data). Mood symptoms were common, with nearly one in five women having an elevated Edinburgh Postnatal Depression Scale (EPDS) score (Anderson et al., 2013, unpublished data). Additionally, one-third of these MMFI had clinically significant trauma symptoms, indexed by the modified Perinatal PTSD questionnaire (Callahan, Borja, & Hynan, 2006). Of note, the American Academy of Pediatrics has endorsed screening for maternal depression and for tobacco exposure in the pediatric clinic setting (Best, 2009; Earls, 2010).

Another domain of maternal health care often neglected among MMFI is reproductive life planning and contraception. Recent studies have found that MMFI have variable rates of uptake of the most effective forms of contraception, ranging from 6% to 50% (Bloch, Webb, Mathew, & Culhane, 2012; Clark et al., 2014). The majority of infants who require NICU-level care are born prematurely, and the greatest risk factor for preterm birth is a history of preterm delivery (Bloom, Yost, McIntire, & Leveno, 2001; Esplin et al., 2008). There is strong evidence that recurrent preterm birth is reduced with interpregnancy intervals of at least 18 months (Conde-Agudelo, Rosas-Bermúdez, & Kafury-Goeta, 2006). Therefore, reproductive life planning counseling and access to highly effective contraception is particularly important for MMFI. Additional research found that 45% of high-risk women did not present for a postpartum medical visit (Bryant, Haas, McElrath, & McCormick, 2006). This finding underscores the need for novel approaches to address the health care needs of MMFI.

This project encompasses an innovative screening and referral intervention offered to MMFI, administered as part of routine care in a post-NICU infant developmental follow-up clinic. We integrated maternal mental health, tobacco exposure, and family planning into the infant's follow-up visit in an effort to arrange indicated counseling and services and optimize the health of the entire family. We hypothesized that maternal health screening could be effectively integrated into a post-NICU developmental care visit, as measured by the ability to engage 100 caregivers to complete the screening tool within an 8-month period. We also aimed to determine the proportion of MMFI with an identified unmet health need who received the indicated referral service within 2 months of screening. Finally, we sought to understand how the implementation of this intervention would affect the logistics and flow of the infant specialty clinic.

Materials and Methods

This research project was designed to identify unmet health needs among MMFI bringing their infant to a post-NICU Special Infant Care Clinic (SICC). The University of North Carolina Institutional Review Board reviewed the project and provided an exemption. The SICC integrates infant health services and provides developmental evaluation for high-risk infants after discharge from the NICU and for up to 2 years of age. The clinic operates within an academic children's hospital and serves approximately 350 families annually. The first appointment is usually scheduled at 6 months adjusted age or, for very high-risk infants, at 1 to 3 months after NICU discharge. Inclusion criteria for infants in the SICC include, but are not limited to, preterm delivery (<30 weeks' gestation), hypoxic ischemic encephalopathy, major congenital heart disease, genetic disorders, feeding difficulties, and other neonatal conditions that require coordinated pediatric services. Post-NICU infants typically have four to six visits at the SICC over their initial 6 to 24 months.

Starting in October 2014, a convenience sample of 100 MMFI and other caregivers of medically fragile infants were approached to complete the screening tool. This sample of 100 participants over 8 months was determined to be sufficient to determine the feasibility of screening for caregiver needs within the pediatric clinic. The screening instrument consisted of 28 questions in the following domains: 1) demographic and baseline information related to previous health care experience and health insurance status, 2) Mental health—the 10-question EPDS (Cox, 1996; Cox, Holden, & Sagovsky, 1987), 3) tobacco exposure—four questions, one related to the tobacco use habits of the caregiver and three related to secondhand smoke exposure for the child (Anonymous, 2010), 4) family planning—six questions to assess family planning intentions and contraceptive use adapted from the Centers for Disease Control and Prevention's Pregnancy Risk Assessment Monitoring System (Centers for Disease Control and Prevention [CDC], 2015). The screening instrument could be independently completed by the MMFI or caregiver in approximately 10 to 15 minutes (Appendix). The inclusion criteria were broad; we included any primary caregiver who was English speaking.

The questionnaires were scored by clinic personnel, which included nurse practitioners and neonatologists. The study team identified scores (for the EPDS and tobacco exposure) and responses (for the family planning questions) that would prompt referrals for further evaluation and/or treatment. Clinic personnel made on-site referrals or provided information to caregiver to facilitate a referral closer to their home. We used the EPDS to identify women at risk for minor depression (score 10–12) or major depression (>12). For MMFI with a score suggesting minor depression, we provided an educational booklet and made a referral to the UNC Perinatal Mood Disorders Clinic. If an MMFI or caregiver reported suicidal ideation, clinic staff was instructed to escort the caregiver to the emergency department for an immediate mental health evaluation. MMFI and caregivers who reported tobacco use or exposure were provided tobacco cessation resources, and a referral was faxed to QuitlineNC, the free, evidence-based, telephonic tobacco cessation helpline in North Carolina (UNC Center for Maternal & Infant Health, n.d.). Finally, if the MMFI did not have an effective contraceptive method and did not want to become pregnant or wished to receive more information about family planning, a same-day family planning appointment at the hospital clinic was offered, or information from Bedsider.org to locate a local provider was given.

To evaluate the effectiveness of the referral process, the study coordinator attempted to follow-up with all the MMFI and caregivers who agreed to be contacted 1 to 2 months after they completed the initial questionnaire. Follow-up was conducted by phone, email, or a secure texting system. The coordinator attempted to contact participants up to five times. If a participant listed two preferred methods of contact, the study staff member attempted the first preferred method three times, and the second preferred method twice. Calls were placed on different days and times. The texting system was eliminated approximately halfway through the intervention owing to concerns about maintaining confidentiality. By speaking with the MMFI or caregiver using a nine-question survey, study staff determined if appropriate services were established and assessed patient satisfaction with those services.