NICU Policy Shifts During Uncertain Times

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The National Perinatal Association (NPA) is an interdisciplinary organization that strives to be a leading voice for perinatal care in the United States. Our diverse membership is comprised of healthcare providers, parents & caregivers, educators, and service providers, all driven by their desire to give voice to and support babies and families at risk across the country.

Members of the NPA write a regular peer-reviewed column in Neonatology Today.

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Since the onset of the COVID19 pandemic in the United States in March 2020, neonatal intensive care units (NICUs) across the country have enacted a range of internal policies to protect infants, their families, and staff from contracting COVID19 . (1) Even within single institutions, hospital policy has shifted over the course of the pandemic based on community infection rates, location of national hotspots, vaccination availability/rates, and perceived risk. Unfortunately, while necessary to promote safety in the face of uncertainty, such policies affect delivery of family-centered care as well as parent-infant bonding. News reports as well as recent publications have indicated that these policies have resulted in limited parent visitation (e.g., length of visit, number of providers at bedside) and restrictive infant-parent interaction (e.g., limited holding and caretaking, mask over face blocking infant’s view of face). (2-5) These reports are corroborated by global survey and the experiences of members of the National Network of NICU Psychologists (NNNP) working in settings throughout the country. (6) Increased parent-infant separation and restricted parent-infant interactions at the bedside may have immediate negative consequences on parent mental health and short-and-long-term-effects on infant development. (7)

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NICU parents already report higher rates of anxiety and depression in the post-partum period relative to other subgroups of new parents. (8) It is likely that COVID19 policies restricting parent visitation to the NICU and interaction at the bedside have exacerbated the negative mental health implications already associated with a NICU hospitalization. (2,9) For example, some COVID19 NICU policies have resulted in limited access to mental health services, religious support services, and social support from parents of other infants hospitalized in the same NICU during the same time period. Parents have also likely limited their contact with family, friends and other potential support providers outside of the hospital due to public health recommendations to protect their infant and the spread of COVID19.

NICU infants demonstrate higher prevalence rates of neurodevelopmental delays and disabilities than other infants. (10) While a number of factors likely contribute to these outcomes, researchers have begun to question whether the aversive NICU environment contributes to the increased prevalence of language delays and cognitive disorders among NICU graduates due to limited social interaction and limited exposure to stimuli. (11) Current research supports this hypothesis; recent studies have found that NICU infants who have more social interactions demonstrate significantly higher scores on neurodevelopmental tests even at 24-to-36-months. (12-13) Reduced quantity, and quality, of parental interaction during a critical period of development has likely been even further reduced due to shifts in COVID19 NICU policies. In particular, changes in NICU parent visitation policies have influenced the frequency and duration of

parental visits, while policies relevant to parent-infant interaction have reduced, or at times even eliminated, the potential for skin-to-skin contact and exposure to the human face due to masks blocking facial features and expressions. Moreover, maternal and paternal mental health conditions repeatedly have been found to be associated with adverse childhood and adolescent cognitive, language, and socioemotional outcomes. (14-15) These negative neurodevelopmental outcomes may be even more apparent for infants hospitalized in NICUs during the COVID19 pandemic as a result of limited interactions during their hospitalization and the impact of parental mental health on long-term development and adaptive functioning.

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Ultimately, a large national multi-site, longitudinal, cohort study is necessary to fully understand the impact of COVID19 NICU policies on parental mental health and the combined impact of COVID19 NICU policies and parental mental health on child neurodevelopmental and socio-emotional outcomes. At this time, even the short-term impact of parent mental health consequences during COVID19, above what is typically seen in a NICU setting, is not fully understood given the continuation and shifting of restrictions. While prevention of COVID19 infection is the primary goal, it is unclear what, if any, data are informing decision-making around policy shifts. Data are necessary not only to conceptualize the problem but also to inform policy decisions moving forward.

As an initial step, members of the NNNP Research Committee have initiated a national survey of parents who have had a child hospitalized in a level III or level IV NICU since April 2020. Funded through the Henry Ford Health System (HFHS) Proposal Development Fund (Principal Investigators, M. Maye & P. Geller), the first aim of the study is to understand the scope, stability, variability, and drivers (e.g., local COVID19 prevalence rates) of NICU policies that parents of a NICU infant experienced/are experiencing during the ongoing COVID19 pandemic. A second aim is to explore the short-term impact of these NICU policies on parental mental health. Specifically, we are actively collecting data from 450 parents that explores the scope and stability of the COVID19 visitation and parent interaction policies in place during their infant’s hospitaliza-

tion. The survey also explores any variability that may have occurred during the infant’s hospitalization (e.g., increasing restrictions, lax implementation, loosening of restrictions). Our measure collects basic socio-demographic (e.g., race, insurance type, parent education) and NICU hospitalization information (e.g., date of admittance, date of discharge). Parent mental health data (i.e., anxiety, depression, stress, sleep) are collected using well-validated self-report instruments.

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Can you help us connect with parents who had a child in the NICU during COVID19?

During this active phase of recruitment, we are looking for parents to take a 15-minute anonymous survey to help us learn more about COVID19 NICU parent visitation/interaction policies and their impact on parent mental health. Participation is voluntary and all participants who choose to complete the survey will be compensated for their time. The project has been approved by the Institutional Review Boards of HFHS and Drexel University and permits recruitment of NICU parents through relevant listservs and social media. If you have the capacity to connect with NICU parents, we would value your assistance with recruitment efforts. Please contact study personnel at mmaye1@hfhs.org for more information.

References:

1. Hyman, M. T. (2020). Covid-19 and the need for perinatal mental health professionals: Now more than ever before. *Journal of Perinatology*, 40(7), 985–986. <https://doi.org/10.1038/s41372-020-0696-z>
2. Arnaez, J., Montes, M. T., Herranz-Rubia, N., & Garcia-Alix, A. (2020). The Impact of the Current SARS-CoV-2 Pandemic on Neonatal Care. *Frontiers in Pediatrics*, 8, 247. <https://doi.org/10.3389/fped.2020.00247>
3. Litmanovitz, I., Silberstein, D., Butler, S., & Vittner, D. (2021). Care of hospitalized infants and their families during the COVID-19 pandemic: An international survey. *Journal of Perinatology*, 41(5), 981–987. <https://doi.org/10.1038/s41372-021-00960-8>
4. Harding, C., Aloysius, A., Bell, N., Edney, S., Gordon, Z., Lewis, H., Sweeting, M., & Murphy, R. (2021).

- Reflections on COVID -19 and the potential impact on preterm infant feeding and speech, language and communication development. *Journal of Neonatal Nursing*, 27(3), 220–222. <https://doi.org/10.1016/j.jnn.2020.09.001>
5. Rao, S. P. N., Minckas, N., Medvedev, M. M., Gathara, D., N, P. Y., Estifanos, A. S., Silitonga, A. C., Jadaun, A. S., Adejuyigbe, E. A., Brotherton, H., Arya, S., Gera, R., Ezeaka, C. V., Gai, A., Gobezeayehu, A. G., Dube, Q., Kumar, A., Naburi, H., Chiume, M., ... Lawn, J. E. (2021). Small and sick newborn care during the COVID-19 pandemic: Global survey and thematic analysis of healthcare providers' voices and experiences. *BMJ Global Health*, 6(3), e004347. <https://doi.org/10.1136/bmjgh-2020-004347>
 6. Darcy-Mahoney, A., White, R. D., Velasquez, A., Barrett, T. S., Clark, R. H., & Ahmad, K. A. (2020). Impact of Restrictions on Parental Presence in Neonatal Intensive Care Units Related to COVID-19 (p. 2020.07.22.20158949). <https://doi.org/10.1101/2020.07.22.20158949>
 7. Hoffman, C., Dunn, D. M., & Njoroge, W. F. M. (2017). Impact of postpartum mental illness upon infant development. *Current Psychiatry Reports*, 19(12), 100. <https://doi.org/10.1007/s11920-017-0857-8>
 8. Hynan, M. T., Mounts, K. O., & Vanderbilt, D. L. (2013). Screening parents of high-risk infants for emotional distress: Rationale and recommendations. *Journal of Perinatology: Official Journal of the California Perinatal Association*, 33(10), 748–753. <https://doi.org/10.1038/jp.2013.72>
 9. Manuela, F., Barcos-Munoz, F., Monaci, M. G., Lordier, L., Camejo, M. P., De Almeida, J. S., Grandjean, D., Hüppi, P. S., & Borradori-Tolsa, C. (2021). Maternal stress, depression, and attachment in the neonatal intensive care unit before and during the COVID pandemic: An exploratory study. *Frontiers in Psychology*, 12, 4326. <https://doi.org/10.3389/fpsyg.2021.734640>
 10. Willett, S. (2018). Developmental Care in the Nursery. In H. Needelman & B. J. Jackson (Eds.), *Follow-Up for NICU Graduates: Promoting Positive Developmental and Behavioral Outcomes for At-Risk Infants* (pp. 15–58). Springer International Publishing. https://doi.org/10.1007/978-3-319-73275-6_2
 11. Rand, K., & Lahav, A. (2014). Impact of the NICU environment on language deprivation in preterm infants. *Acta Paediatrica* (Oslo, Norway: 1992), 103(3), 243–248. <https://doi.org/10.1111/apa.12481>
 12. Caskey, M., Stephens, B., Tucker, R., & Vohr, B. (2011). Importance of parent talk on the development of preterm infant vocalizations. *Pediatrics*, 128(5), 910–916. <https://doi.org/10.1542/peds.2011-0609>
 13. Gonya, J., Feldman, K., Brown, K., Stein, M., Keim, S., Boone, K., Rumpf, W., Ray, W., Chawla, N., & Butter, E. (2018). Human interaction in the NICU and its association with outcomes on the Brief Infant-Toddler Social and Emotional Assessment (BITSEA). *Early Human Development*, 127, 6–14. <https://doi.org/10.1016/j.earlhumdev.2018.08.010>
 14. Kingston, D., & Tough, S. (2014). Prenatal and postnatal maternal mental health and school-age child development: A systematic review. *Maternal and Child Health Journal*, 18(7), 1728–1741. <https://doi.org/10.1007/s10995-013-1418-3>
 15. Sweeney, S., & MacBeth, A. (2016). The effects of paternal depression on child and adolescent outcomes: A systematic review. *Journal of Affective Disorders*, 205, 44–59. <https://doi.org/10.1016/j.jad.2016.05.073>
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