

Gravens by Design: The 10th edition of the Recommended Standards for Newborn ICU Design

Robert White, MD

“This new edition of the Recommended Standards contains a number of updated standards; most notable is a new standard that specifies the inclusion of couplet care rooms for any new NICU construction in hospitals with a delivery service.”

The 10th edition of the Recommended Standards for Newborn ICU Design is being published this month in a supplement to the Journal of Perinatology and several other papers on related topics. (1-3) This new edition of the Recommended Standards contains a number of updated standards; most notable is a new standard that specifies the inclusion of couplet care rooms for any new NICU construction in hospitals with a delivery service.

“Couplet care is the latest step in the evolution of NICUs from large multibed rooms to more suitable care environments for ill newborns and their families. In recent years, many NICUs have transitioned from these multibed rooms to include at least some single-family rooms, but typically, those rooms were not designed to allow for the care of the mother in the same room with the baby while she was still a patient in the postpartum period.”

Couplet care is the latest step in the evolution of NICUs from large multibed rooms to more suitable care environments for ill newborns and their families. In recent years, many NICUs have transitioned from these multibed rooms to include at least some single-family rooms, but typically, those rooms were not designed to allow for the care of the mother in the same room with the baby while she was still a patient in the postpartum period. Couplet care rooms permit this simultaneous, adjacent care of the mother and newborn, thus eliminating the separation usually experienced at a crucial and stressful moment in the lives of both the baby and the parents. Couplet care requires modification of several conventional NICU design and operational strategies, so this supplement contains two accompanying articles from pioneering NICUs, one from Bjorn Westrup and his colleagues in the Nordic coun-

tries and a second by Christie Bruno and her colleagues from Yale describing their design and operational strategies. Carol Jaeger and Leslie Altimier also provide a paper that describes valuable metrics to guide the implementation of couplet care.

This supplement contains several other papers useful for those planning to build a new NICU or upgrade their existing unit. Carmina Erdei (4) and her team from Brigham & Women’s in Boston report their experience in a “hybrid” NICU where babies are cared for in single-family rooms early in their course and then in multibed rooms during their convalescent stage. Sabah Mohammed and her colleagues summarize the results of a “Reimagining the NICU” project undertaken during two recent Gravens conferences in which participants brainstormed many ways we could employ creative, forward-thinking solutions to NICU design and operational challenges. (5) Mardelle Shepley and colleagues outline the value of incorporating color into NICU design and strategies for doing so, (6) while James Greenberg provides similar insight on using light and lighting in the NICU. (7) Joy Browne and her colleagues discuss the importance of family-centered care and describe ways NICU design can facilitate that effort. (1, 8)

“Mardelle Shepley and colleagues outline the value of incorporating color into NICU design and strategies for doing so, (6) while James Greenberg provides similar insight on using light and lighting in the NICU. (7) Joy Browne and her colleagues discuss the importance of family-centered care and describe ways NICU design can facilitate that effort. (1, 8)”

Taken together, the contents of this supplement will provide a strong foundation for teams planning new NICU construction or significant renovation so that their resulting design is innovative and fully supportive of babies, families, and caregivers. Many of these topics and others related to NICU Design and Family-Centered Care will be presented and further elaborated at the upcoming Gravens Conference on March 6-9, 2024.

References:

1. Altimier L, Barton SA, Bender J, Browne J, Harris D, Jaeger CB, et al. Recommended standards for newborn ICU design. J Perinatol. 2023;43(Suppl 1):2-16. Epub 2023/12/13. doi: 10.1038/s41372-023-01784-4. PubMed PMID: 38086961.
2. White R. Introduction to the 10th edition of the recommended standards for newborn ICU design. J Perinatol. 2023;43(Suppl 1):1. Epub 2023/12/13. doi: 10.1038/s41372-023-01813-

2. PubMed PMID: 38086960.
3. White RD, Smith JA, Shepley MM, Committee to Establish Recommended Standards for Newborn ICUD. Recommended standards for newborn ICU design, eighth edition. *J Perinatol.* 2013;33 Suppl 1:S2-16. Epub 2013/04/03. doi: 10.1038/jp.2013.10. PubMed PMID: 23536026.
 4. Erdei C, Corriveau GC, Inder TE. A unit's experience with hybrid NICU design: description of care model and implications for patients, families, and professionals. *J Perinatol.* 2023;43(Suppl 1):35-9. Epub 2023/12/13. doi: 10.1038/s41372-023-01815-0. PubMed PMID: 38086965.
 5. Mohammed S, Savage T, Smith J, Shepley MM, White RD. Reimagining the NICU: a human-centered design approach to healthcare innovation. *J Perinatol.* 2023;43(Suppl 1):40-4. Epub 2023/12/13. doi: 10.1038/s41372-023-01794-2. PubMed PMID: 38086966.
 6. Shepley MM, Ames RL, Lin CY. Color and newborn intensive care unit design: executive summary. *J Perinatol.* 2023;43(Suppl 1):45-8. Epub 2023/07/01. doi: 10.1038/s41372-023-01707-3. PubMed PMID: 37391506.
 7. Greenberg JM, Gruner KA, Rodney L, Struve JN, Kang D, Cao Y, et al. Biologically aware lighting for newborn intensive care. *J Perinatol.* 2023;43(Suppl 1):49-54. Epub 2023/12/13. doi: 10.1038/s41372-023-01816-z. PubMed PMID: 38086967.
 8. Browne JV. How NICU design and infant and family-centered developmental care act synergistically to support babies and families. *J Perinatol.* 2023;43(Suppl 1):55-8. Epub 2023/12/13. doi: 10.1038/s41372-023-01746-w. PubMed PMID: 38086968.

Disclosure: The author has no conflicts of interest

NT

Corresponding Author



Robert D. White, MD
Director, Regional Newborn Program
Beacon Children's Hospital
615 N. Michigan St.
South Bend, IN 46601
Phone: 574-647-7141
Fax: 574-647-3672
Email: Robert.White@pediatrix.com