

Fragile Infant Forums for Implementation of IFCDC Standards: Infant and Family Centered Developmental Care Standards, Competencies, and Best Practices: Proposed Revisions to the Concept Model Using Systems Thinking

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“A Collective Effort to Improve the Experience of NICU families between the National Perinatal Association’s Discharge NICU Discharge Preparation and Transition Planning Guidelines and Recommendations as well as the Standards, Competencies, and Recommended Best Practices for Infant and Family-Centered Developmental Care in the Intensive Care Unit”

Overview:

The First Consensus Conference’s First Report on Standards, Competencies, and Best Practices for Infant and Family-Centered Developmental Care in the Intensive Care Unit, published in 2020, is under revision. (1) The second edition is expected to be posted on the <https://nicudesign.nd.edu/nicu-care-standards/> by the end of 2024. The objective of this article is to: 1. describe the proposed

revisions impacting Infant and Family-Centered Developmental Care (IFCDC) practice standards and competencies and 2. discuss the implementation of the IFCDC standards using systems thinking.

Consensus panel members agree on the following key foundational elements of IFCDC practice:

- IFCDC is central to medical care, NOT an additive, “fluff,” or “nice to do” comfort measure for the baby, and should be considered foundational to all intensive care.
- Systems Thinking guides the re-envisioning of intensive neonatal care, resulting in optimum baby and family outcomes throughout the baby’s lifespan.
- The baby is recognized as a competent interactor and can communicate needs through physiologic responses, expression, and behavior.
- Parents are not visitors; they are considered the baby’s primary caregivers.
- Parents are essential to developing a nurturing interactive relationship with the baby and should be considered partners in all care.
- Parents provide essential regulatory support from birth through in-patient care, the transition to home, and continuing care.

Key areas of revisions in IFCDC principles:

Additions — Systems’ Thinking within complex adaptive systems include new applications which influence all aspects of sustained change in caregiving practices.

Newly articulated principles — Focus on principles of infant and parent mental health including practice of non-separation of baby and parent.

Re-defined and emphasized — The baby as a competent interactor, parents as essential partners within the interprofessional team and the primary caregiver in practice, and individualized care of the baby and family.

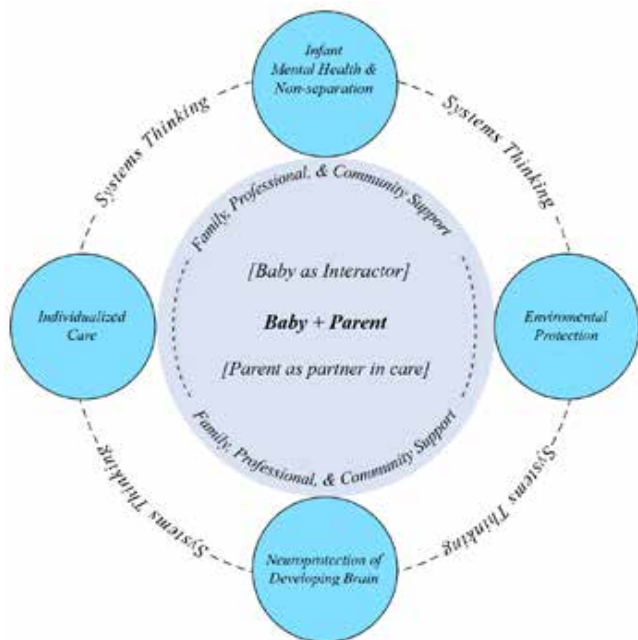
Broadened — Neuroprotection of the developing brain and environmental protection

Key areas of revisions in IFCDC standards and competencies:

New application within all standards — Updates in supporting evidence as well as assurance of supportive environments that diminish adverse responses from the baby and increases the opportunity for intimate interactions with parents

IFCDC Concept Model

The IFCDC consensus panel initially developed a Concept Model to provide guiding principles for caregiving. With evolving evidence and critical thinking, the panel proposes the following revisions to the model. Explanations of principles are



provided below and visualized in Figure 1.

Figure 1. IFCDC Concept Model (Revisions 2024)

Principle additions: Systems Thinking within a complex adaptive system:

In the Executive Summary: Standards, Competencies and Best Practices for Infant and Family Centered Care in the Intensive Care Unit, Browne, Jaeger, Kenner, et al. (2020) stated, “The principles of IFCDC are strongly influenced by the process of systems thinking within a complex, dynamic, and continually evolving system. Systems thinking examines the components of a system—human or organization—from a holistic perspective, considering each system component as interrelated, capable of influencing, and being influenced by each other.” (2) Systems thinking guides to standardize neonatal care in the ICU for optimum outcomes of the baby’s and family’s lifespan. As a principle and a practice section of IFCDC, systems thinking is a process that guides the implementation of strategic vision, culture development, team collaboration, practice, and evaluation through all the IFCDC sections. Diversity, Equity, Inclusion, and Justice (DEIJ) has been added to the description of the principle of systems thinking to emphasize the importance and application of DEIJ to the communication and interaction among professionals, staff, babies, parents, and families. (3)

Advocacy has also been added to systems thinking to describe the support, promotion, activism, and commitment within the health care system/organization to effect change in perinatal practice that advances IFCDC. Advocacy includes practices that

empower both the baby’s and the parent’s family in their roles within the complex perinatal caregiving environment, recognizing their cultural, spiritual, and lifestyle belief systems. Changing the NICU policies, practices, culture, and performance competencies from healthcare-led to parent-led care of the baby is essential to support parent confidence and competence in caregiving and decision-making. (4)

“Diversity, Equity, Inclusion, and Justice (DEIJ) has been added to the description of the principle of systems thinking to emphasize the importance and application of DEIJ to the communication and interaction among professionals, staff, babies, parents, and families. Advocacy has also been added to systems thinking to describe the support, promotion, activism, and commitment within the health care system/organization to effect change in perinatal practice that advances IFCDC.”

A description of NICU couplet care has been added as an example of IFCDC in practice using systems thinking, including aspects of diversity, inclusion, and advocacy. See the next section for further description of couplet care.

Newly articulated principles: Infant Mental Health Focus and the non-separation of baby and parent:

An Infant Mental Health (IMH) Focus has been added to the principles of IFCDC. IMH is “the developing capacity of the secure adult and peer relationships to experience, manage, and express a full range of emotions, and explore the environment and learn—all in the context of family, community, and culture.” (<https://www.zerotothree.org/resources/1951-the-basics-of-infant-and-early-childhood-mental-health-a-briefing-paper>). IMH emphasizes the importance of developing effective physical, social, and emotional

Figure 2. The baby+parent



regulation between the baby and parent. This regulation establishes and depends on reciprocal relationships between the baby and parent/primary caregiver(s); as such, it is demonstrated in the inner circle of the model (Figure 2).

Providers should be able to reflect on the baby's experience to provide safe, individualized, nurturing, and regulating growth opportunities. Further, to promote and support the baby's social and emotional well-being, IMH should be part of the primary focus of caregiving in intensive care. (5, 6)

“The inner circle of the IFCDC Model illustrates the nurturing relationships essential to the baby/parent(s)/family from birth through in-patient care, transition to home, and continuing healthcare. The ‘baby + parent’ has replaced “baby + mother dyad = baby + m/other” from the previous concept model..”

The inner circle of the IFCDC Model illustrates the nurturing relationships essential to the baby/parent(s)/family from birth through in-patient care, transition to home, and continuing healthcare. The ‘baby + parent’ has replaced “baby + mother dyad = baby + m/other” from the previous concept model.

The inclusive term ‘parent’ is intended to encompass a range of individuals who may take on the baby's primary caregiver role, including the mother, father, grandparent, aunt, uncle, foster parents, or whomever the family designates as the primary caregiver. Family is defined as the individuals who are or will be the baby's primary caregivers before and after discharge from the hospital, whether biologically related or not. Family, professionals, and community support has been added to the circle of relationships to signify the importance of assistance and reinforcement.

An important addition to IMH is non-separation, the closeness and/or connection of the mother and sick or premature baby, defined in IFCDC practice as full access to the baby without restrictions from birth through the continuum of the baby's stay. There is no evidence to support the separation of mother and baby at/after birth. (7) The practice of separating the baby and mother to different specialty care areas after birth is residual from times when intensive medical support within designated areas was done for reasons of safety. (8) With better monitoring capability and portable technologic equipment, it is possible to maintain a close physical connection between primary caregivers and the mother/baby/parent dyad.

Non-separation is best described by “couplet care,” which is the practice initiative to provide care to both mother and sick or premature baby after birth in the same room by neonatal and obstetric caregivers without separation of the dyad. (9–11) The father/partner/family members can share in the care of physical connection with both mother and baby. Following the mother's

discharge, the baby can be moved from the NICU couplet room to a NICU single-family room (SFR), where the baby can remain until discharge from the NICU to home. The environment can provide care space, supplies, and equipment for the baby, and comfortable furnishings for the recovering mother and parent/partner to have unlimited access to the baby, share decision-making with the interprofessional team, learn care competencies, and become an active caregiver. (12)

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Re-defined and emphasized principles: The baby as a competent interactor, the parent as an essential partner, and the resulting provision of individualized care for baby and parent.

The principles of the baby as a competent interactor and the parent as an essential partner with the interprofessional team and the primary caregiver in practice are central to the baby + parent connection. Each baby has strengths and vulnerabilities and can lead individualized care by communicating distress, pain, comfort, and need for interaction. (13) Parents are care partners and must be empowered to support their baby competently and confidently as decision-makers and caregivers. Empowerment is the authority or power given to someone (baby/parents) through becoming stronger and more confident, especially in controlling one's life and claiming one's rights.

Individualized Care emphasizes the strengths, needs, and availability of the baby and family and the necessity to address physical and/or emotional distress identified by the parent(s), family, or interprofessional providers/caregivers. (13)

“While the focus is on “neuroprotection of the developing brain,” the IFCDC model has broadened the definition to recognize the need for attention to the neurophysiological development of the entire baby.”

Broadened principle: Neuroprotection of the developing brain:

The baby's brain develops faster and is more vulnerable during birth (regardless of the gestational age) than at any time in life. While the focus is on “neuroprotection of the developing brain,”

the IFCDC model has broadened the definition to recognize the need for attention to the neurophysiological development of the entire baby. (14)

“A Supportive Environment that diminishes adverse responses from the baby and increases the opportunity for intimate interactions with parents has been updated with references to include the NICU Design Standards.”

Principle: Environmental Protection:

A Supportive Environment that diminishes adverse responses from the baby and increases the opportunity for intimate interactions with parents has been updated with references to include the NICU Design Standards, 10th edition, 2023. (9, 10, 12, 15–18)

Changes in practice Sections of IFCDC Standards—revisions and new applications:

- **Systems thinking** in complex adaptive systems—applied to all IFCDC exemplars of evidence-based practices.
- **Reducing and managing pain and stress** in newborns and families
- **Positioning and touch** for the newborn
- **Sleep and arousal interventions** for the newborn
- **Skin-to-skin contact** with intimate family members
- Management of **feeding, eating, and nutrition** delivery

“The revisions of the practice standards and competencies will include updates based on new critical evidence published between 2019 and 2024, changes to reflect the application of the principles, and the addition of actions of implementation and measures and metrics for each standard.”

The revisions of the practice standards and competencies will include updates based on new critical evidence published between 2019 and 2024, changes to reflect the application of the principles, and the addition of actions of implementation and measures and metrics for each standard. (19, 20) As previously stated, the second edition of the Recommended Standards, Competencies, and Best Practices for Infant and Family Developmental Care in Intensive Care is expected to be published before the close of 2024 on the website <https://nicudesifn.nd.edu/nicu-care-standards/>

Implementing IFCDC—Re-imagining care in the ICU:

Systems thinking describes implementing IFCDC as integral to the ICU’s environment, operations, and practice. It does so by influencing the vision, values, infrastructure, education, performance competence, improvement process, evaluation, and sustainment of care. Systems thinking aims to achieve optimal outcomes for the baby by integrating a diverse, equitable, inclusive, and just culture of communication, supportive behavior, and shared decision-making between parents/family and the interprofessional team.

Implementing IFCDC in the ICU begins with creating or reimagining the vision—what should IFCDC be like in our ICU? What do babies and parents want? The environment should keep the baby and parent(s) together in a comfortable private family-centered space, i.e., labor, delivery, recovery and postpartum (LDRP) birthing space, NICU couplet care, single family rooms (SFR), and/or a multi-space pod. (9, 10, 16) Collaboration among the interdisciplinary team of specialty providers, caregivers, and parent advisors is necessary to be able to guide and support the baby and parent(s) through the continuum of care—the antenatal period through birth, in-patient management, transition to home, and continuing care in the community. (21, 22) A partnership between parents and the professional team should include baby- and parent-led decision-making and caregiving. Further, the ICU should provide a culture of respect for diversity, equity, inclusion, and justice for babies, parents, families, staff, and professionals.

“Implementing IFCDC in the ICU begins with creating or reimagining the vision—what should IFCDC be like in our ICU? What do babies and parents want? The environment should keep the baby and parent(s) together in a comfortable private family-centered space, i.e., labor, delivery, recovery and postpartum (LDRP) birthing space.”

IFCDC practice within the ICU system can be developed through education, simulation training, and utilization of clinical guidelines to standardize performance competence for all collaborative team members and the parents/family. Promoting and evaluating competent performance for all team members can improve the outcome of practice and the baby’s health and well-being. Monitoring the outcome(s) to assess and trigger improvement is essential. Continuous improvement can help better understand the baby, parent, and family and improve the baby’s lifespan neurophysiologic outcomes. Competent and confident caregiving by parents and family members through the transition to home and continuing care in the community improves decision-making and the health and well-being of the baby, parents, and family. (23) The dissemination of improvement methods and data expands ICU providers’ and caregivers’ evidence and experience.

Summary and conclusions:

The consensus panel members are committed to providing ongoing evidence surveillance to support practice and adhering

to the foundational principles of IFCDC. With new evidence and changes in scientific knowledge and practical and ethical practice, the original standards and competencies published in 2020 are due for revisions and expansion. New to the work is the infusion of IFCDC principles into all practice standards, including the essential care components of diversity, equity, inclusion, and justice; advocacy and non-separation of babies and their parents; and including parents as partners in the care team. Although these recommendations may be challenging to implement in professional practice, using systems thinking to guide implementation should give babies and families the best start possible.

References:

1. Care. CColaFCD. Report of the First Consensus Conference on Standards, Competencies and Best Practices for Infant and Family Centered Developmental Care in the Intensive Care Unit. <https://nicudesign.nd.edu/nicu-care-standards/>; 2020 February 2020. Report No.
2. Browne JV, Jaeger CB, Kenner C. Executive summary: standards, competencies, and recommended best practices for infant- and family-centered developmental care in the intensive care unit. *Journal of perinatology : official journal of the California Perinatal Association*. 2020;40(Suppl 1):5–10. Epub 2020/08/30. doi: 10.1038/s41372-020-0767-1. PubMed PMID: 32859958.
3. McGlothen-Bell K, Lawrence C. Fragile Infant Forums for Implementation of IFCDC Standards: Integrating Diversity, Equity, Inclusion, and Justice into the Care of Families in the NICU: A Call to Action. *Neonatology Today*. 2023;18(11):75–9.
4. van Veenendaal NR, Auxier JN, van der Schoor SRD, Franck LS, Stelwagen MA, de Groof F, et al. Development and psychometric evaluation of the CO-PARTNER tool for collaboration and parent participation in neonatal care. *PloS one*. 2021;16(6):e0252074. Epub 20210609. doi: 10.1371/journal.pone.0252074. PubMed PMID: 34106929; PubMed Central PMCID: PMC8189480.
5. Browne JV. Infant mental health in intensive care: Laying a foundation for social, emotional and mental health outcomes through regulation, relationships and reflection. *Journal of Neonatal Nursing*. 2020. doi: 10.1016/j.jnn.2020.11.011.
6. Browne J. Fragile Infant Forums for Implementation of IFCDC Standards: Key Cornerstone of the IFCDC Standards: Infant Mental Health. *Neonatology Today*. 2023;18(5):230–4.
7. Bergman NJ. The neuroscience of birth--and the case for Zero Separation. *Curationis*. 2014;37(2):e1-e4. Epub 20141128. doi: 10.4102/curationis.v37i2.1440. PubMed PMID: 25685896.
8. Patriksson K, Selin L. Parents and newborn "togetherness" after birth. *Int J Qual Stud Health Well-being*. 2022;17(1):2026281. doi: 10.1080/17482631.2022.2026281. PubMed PMID: 35067210; PubMed Central PMCID: PMC8925922.
9. Altimier L, Barton SA, Bender J, Browne J, Harris D, Jaeger CB, et al. Recommended standards for newborn ICU design. *Journal of Perinatology*. 2023;43(1):2–16. doi: 10.1038/s41372-023-01784-4.
10. Klemming S, Lilliesköld S, Arwehed S, Jonas W, Lehtonen L, Westrup B. Mother-newborn couplet care: Nordic country experiences of organization, models and practice. *Journal of Perinatology*. 2023;43(1):17–25. doi: 10.1038/s41372-023-01812-3.
11. Redmond B, Gambardella T, Bruno CJ. Reimagination through renovation: incorporating couplet care in a level 4 academic NICU. *Journal of Perinatology*. 2023;43(1):26–9. doi: 10.1038/s41372-023-01814-1.
12. Browne JV. How NICU design and infant and family-centered developmental care act synergistically to support babies and families. *Journal of Perinatology*. 2023;43(1):55–8. doi: 10.1038/s41372-023-01746-w.
13. Ross ES. Fragile Infant Forums for Implementation of IFCDC Standards: Developmentally Supportive Care Means Individualized Care... *Neonatology Today*. 2023;18(1):54–9.
14. McGrath J.M., J. VA. Fragile Infant Forums for Implementation of IFCDC Standards: Neuroprotection - Protecting the Developing Brain. *Neonatology Today*. 2022;17(12):45–8.
15. Jaeger CB, Altimier L. NICU Couplet Care: metrics to guide an evolving model of care. *Journal of Perinatology*. 2023;43(1):30–4. doi: 10.1038/s41372-023-01783-5.
16. 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. *Journal of Perinatology*. 2023;43(1):35–9. doi: 10.1038/s41372-023-01815-0.
17. Greenberg JM, Gruner KA, Rodney L, Struve JN, Kang D, Cao Y, et al. Biologically aware lighting for newborn intensive care. *Journal of Perinatology*. 2023;43(1):49–54. doi: 10.1038/s41372-023-01816-z.
18. Shepley MM, Ames RL, Lin CY. Color and newborn intensive care unit design: executive summary. *Journal of Perinatology*. 2023;43(1):45-8. doi: 10.1038/s41372-023-01707-3.
19. Browne JV, Kolberg KJS. Gravens By Design: Infant and Family-Centered Developmental Care Standards, Competencies and Best Practices - What is the Evidence? *Neonatology Today*. 2021;16(12):38–9.
20. Kenner C, McGrath J. NANN's Developmental Care of Newborns and Infants: A guide for Health Professionals. 3rd ed. Philadelphia: Wolters Kluwer; 2023. p.378
21. Browne J.V. Fragile Infant and Family-Centered Developmental Care Evidence-based Standards: Why Interprofessional Implementation is Essential. *Neonatology Today*. 2022;17(6):59–61.
22. Ahlqvist-Björkroth S, Lehtonen L. Gravens by Design: Close Collaboration with Parents Intervention Improves Family-Centered Care and Increases Parent-Infant Closeness in Neonatal Intensive Care Units. *Neonatology Today*. 2023;18(11):66–70.
23. Mohammed S, Savage T, Smith J, Shepley MM, White RD. Reimagining the NICU: a human-centered design approach to healthcare innovation. *Journal of Perinatology*.

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