

# Improving Multiple Birth Outcomes: What Role Could The European Standards of Care for Newborn Health Play?

The European Standards of Care for Newborn Health (ESCNH) were developed by the European Foundation for the Care of Newborn Infants (EFCNI), and address healthcare disparities with the aim to improve outcomes for preterm, at-risk infants and their families across Europe. Multiple births face significant challenges due to higher rates of preterm birth and high NICU admissions, complications, increased risks of neonatal issues like low birth weight and cerebral palsy, and maternal complications. We explore how the ESCNH could improve outcomes for these children.

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Disclosure: Author one is a member of the Parent, Patient and Public Advisory Board for the ESCNH. Author two is a member of the chair committee for the ESCNH

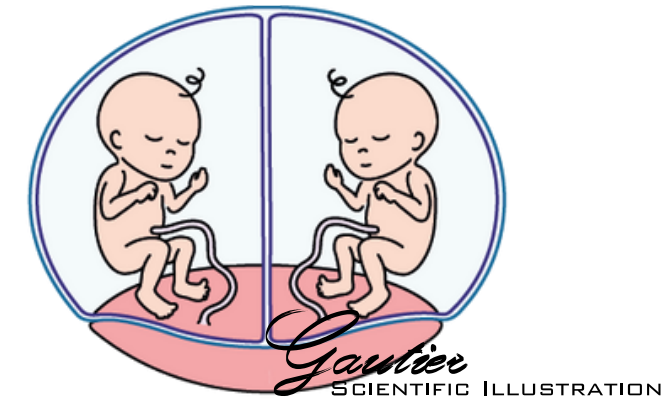
## 1 Introduction

The European Standards of Care for Newborn Health (ESCNH) are a pan-European project designed to examine the discrepancies in the delivery and standards of healthcare across Europe. While there are limited provisions made in relation to multiple births within the standards for twins and higher order multiples, with more than 60% of twins born pre-term, and the incidence of complications specific to monochorionic twins higher than average, multiple births face significant challenges before and after birth.

Extensive research highlights the heightened neonatal risks associated with multiple gestation pregnancies, including preterm birth, low birth weight, cerebral palsy, and perinatal mortality. Neonatal intensive care unit admission rates are notably high, with around 25% of twins, 75% of triplets, and almost all quadruplets requiring stays in neonatal units. Maternal complications, such as increased rates of pre-eclampsia, gestational diabetes, and HELLP syndrome, further underscore the challenges. With women carrying multiples being six times more likely to experience hospitalization due to complications compared to those with singleton pregnancies, multiple births pose a significant public health issue.

Associated with preterm births is neurodevelopmental impairment, and this, in combination with other complications of multiple births (low birthweight, (selective) fetal growth restriction (SFGR), twin-twin transfusion syndrome (TTTS), twin anemia-polycythemia sequence (TAPS) and so on, creates a need for comprehensive long term follow-ups for these children. Families are also impacted, with perinatal mental health recorded as being worse in parents of multiples vs parents of singletons.

The ESCNH provide a comprehensive basis for the needs of both the children and the parents in preterm and at risk births, and implementing these standards of care can also by extension, created better outcomes for multiple births.



## 2 About the ESCNH

The ESCNH provide 11 standards topics and were developed by 220 professionals, from more than thirty countries, along with 50 parents and industry partners. The standards include: Birth and Transfer, Ethical Decisions, NICU Design, Care Procedures, Followup and Continuing Care, Nutrition, Data Collection and Documentation, Infant- and Family-Centered Developmental Care, Patient Safety and Hygiene Practice, Education and Training, and Medical Care and Clinical Practice. For the purpose of this abstract, we will focus on two standards only: Infant- and Family Centered Developmental Care, and Followup and Continuing Care.

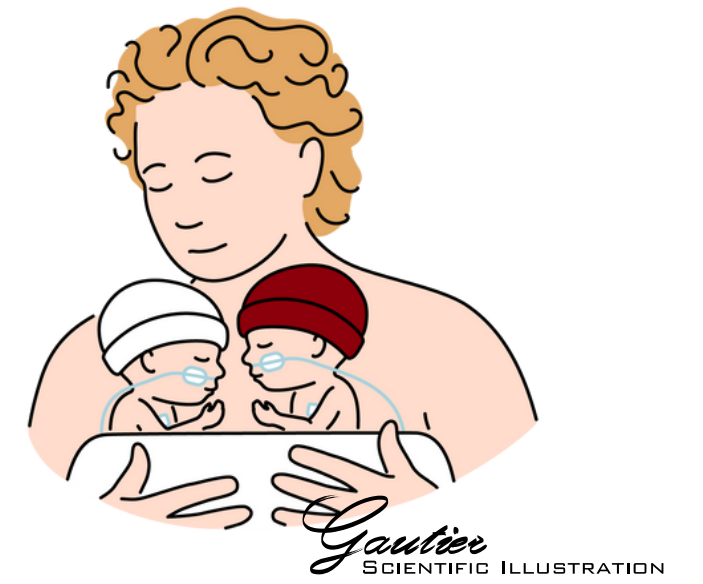
We examined the available evidence surrounding these two standards, and made suggestions on how this could impact and potentially improve care from a multiple birth perspective

## 3 Infant and Family Centered Developmental Care

Infant and Family Centered Developmental Care is a holistic approach to newborn care, integrating neurodevelopmental theories, parent-infant interaction, and environmental adaptation. It emphasizes sensitive care, parent engagement, and customized NICU environments. Implementation involves family integration, early bonding, and continuous skin-to-skin contact, promoting sensory experiences and support services for families. Well-trained healthcare professionals are crucial for successful implementation.

For parents of twins in the NICU, Kangaroo Mother Care (KMC) is especially valuable in promoting bonding. KMC facilitates skin-to-skin contact, helping regulate both infants' temperatures, improving breastfeeding, and strengthening the emotional connection between parents and their babies.

The European Standards of Care for Newborn Health emphasize the importance of family-centered care, advocating for continuous parental presence and tailored support. These standards highlight the need to engage families fully in the caregiving process to improve infant outcomes and reduce parental stress. Such involvement positively impacts both the cognitive and physical development of infants, particularly in multiple births



## 4 Followup and Continuing Care

Preterm birth increases the risk of long-term complications, particularly in very premature infants or those with severe neonatal issues. Targeted follow-up care is recommended for infants born before 32 weeks gestation or those with significant risk factors. This care involves structured support from neonatal units to the home, addressing growth, feeding, health, sensory impairments, and developmental needs. Multidisciplinary collaboration is crucial to ensure comprehensive care and prevent treatment gaps. Mental health assessment for both infants and parents, along with counseling on healthy lifestyle practices, is essential. Case managers play a key role in facilitating continuity of care, ensuring evolving medical and educational needs are met.

Approximately 60% of twins are born preterm, with the percentage rising for higher-order multiples. This significantly increases the risk of neurodevelopmental impairments and other health complications. Additionally, twins and multiples are prone to specific complications such as twin-to-twin transfusion syndrome and growth discordance, which can further elevate health risks. Therefore, a comprehensive follow-up care plan tailored to the unique needs of multiples is critical.

Implementing the ESCNH standard on follow-up and continuing care, could significantly improve outcomes for twins and multiples born preterm. By ensuring a multidisciplinary team provides ongoing support for both infants and their parents, this approach would address not only the heightened medical risks, such as neurodevelopmental impairments and twin-specific complications, but also the increased emotional and psychological stress experienced by parents. Structured, long-term follow-up care tailored to the needs of multiples would help mitigate health risks, improve developmental outcomes, and offer essential mental health support to families.



## 5 Future Improvements

While the European Standards of Care for Newborn Health (ESCNH) offer a comprehensive framework for newborn care, they currently lack specific guidelines for twins and multiple births. This omission means that while the standards provide a strong general approach, they do not address the unique needs and challenges associated with multiple births. Nonetheless, even without these specific recommendations, adhering to the existing standards can significantly enhance the quality of care for newborns. Future systematic reviews of the ESCNH might include tailored guidelines for multiple births, potentially improving outcomes further.

## 6 Conclusion

In conclusion, the European Standards of Care for Newborn Health (ESCNH) offer a comprehensive framework for addressing the complex needs of newborns and their families across Europe. Despite limited provisions specifically addressing multiple births within the ESCNH, the challenges faced by families with twins, triplets, or higher-order multiples are significant. Research underscores the heightened risks associated with multiple gestation pregnancies, including preterm birth, low birth weight, and a range of complications such as twin-twin transfusion syndrome and selective fetal growth restriction.

By focusing on standards such as Infant- and Family-Centered Developmental Care and Follow-up and Continuing Care, tailored approaches can be implemented to address the unique needs of multiple births. Emphasizing early bonding, continuous skin-to-skin contact, and comprehensive follow-up care, these standards can improve outcomes for both infants and parents. Additionally, multidisciplinary collaboration is crucial to ensure that the diverse needs of families with multiples are met effectively.

While the ESCNH provide a solid foundation for newborn care, there is a clear need for further expansion to specifically address the complexities of multiple births. By incorporating targeted interventions and support services for families with twins, triplets, or more, the ESCNH can further enhance the quality of care and outcomes for these vulnerable populations. Ultimately, the implementation of ESCNH standards for newborn care has the potential to improve the overall health and well-being of multiple births, mitigating risks and promoting positive developmental outcomes for both infants and parents alike.

## Related literature

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