

Are Anesthesiologists the Right Persons to Perform Neonatal Resuscitation?

Fatoumata Kromah MD FASA; Manuel Vallejo MD, DMD[†]

Department of Anesthesiology, Virginia Commonwealth University Health, Richmond, Virginia, United States

[†]Department of Anesthesiology, West Virginia University School of Medicine, Morgantown, West Virginia, United States

Introduction

- 1 million newborns die each year because of asphyxia at birth. Around 10% of all infants will require some intervention. 1% of all newborns necessitate intensive resuscitation at birth. One anesthesiologist cared for the patient and neonate in many neonatal resuscitation cases. Due to their training in airway management and critical care, anesthesiologists are well-suited for neonatal resuscitation. During the labor and delivery period, anesthesiologists play a vital role in ensuring the safety of both the mother and newborn. They are responsible for administering analgesia and anesthesia to the mother during childbirth, and in some cases, they may be required to assist further in the delivery process. In cases where the newborn experiences respiratory distress or failure, the anesthesiologist may be called upon to provide immediate neonatal resuscitation.
- Anesthesiologists often participate in neonatal resuscitation alongside neonatologists, obstetricians, and other healthcare providers. In some cases, they may be the primary providers of neonatal resuscitation, especially in situations where neonatologists are not available, or there is an emergency that requires immediate intervention. As a result, ACGME obstetric anesthesiology fellows must be trained in neonatal resuscitation techniques to optimize outcomes for the newborn. Anesthesia providers, particularly anesthesiologists, are often called upon to assist with neonatal resuscitation due to their training in airway management, pharmacology, and critical care. However, the specific role of anesthesiologists in neonatal resuscitation and their level of competence in this area remains a topic of debate among healthcare professionals.
- The study by Drzymalski et al. (2019) sheds light on the level of neonatal resuscitation knowledge and comfort among anesthesia providers across academic anesthesia institutions in the United States. The study is particularly relevant as it is one of the few studies to assess anesthesia providers' neonatal resuscitation skills and competence across multiple institutions. The results of the study suggest that anesthesia providers, in general, have high levels of neonatal resuscitation knowledge and comfort. However, there are areas where knowledge and comfort are lacking, highlighting the need for ongoing training and education. The study also highlights the importance of previous training and experience in neonatal resuscitation. The findings suggest that the more experience and training an anesthesia provider has in neonatal resuscitation, the more likely they are to feel comfortable and confident in performing the procedure. This emphasizes the need for ongoing education and training programs for anesthesia providers to ensure that they are equipped with the necessary knowledge and skills to perform neonatal resuscitation effectively.
- While anesthesiologists may not always receive formal training in neonatal resuscitation, many have gained extensive experience through their work in the labor and delivery department. However, it is important to note that proper training and certification in neonatal resuscitation can help reduce the risk of unintentional injuries during the procedure.

Image



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Case 1:

38 years old woman, G3P0 at 41 weeks gestation, with gestational diabetes mellitus presented in labor due to ruptured membranes. She remained in labor for 16 hours and pushed for 2h and 40 minutes. The fetus weight was 4kg. A cesarean section was performed as the fetus showed signs of non-reassuring heart rate. At delivery, meconium stain was noticed. Despite PPV and stimulation, there was no respiratory effort, APGAR 1/5, HR 70/min. As the NICU team was late due to a faulty paging, the anesthesiologist intubated the infant, after which HR increased, and breath sounds became present. Due to vaginal and cervical tears, which required extensive repair, the mother lost 2l of blood. She received 1u of PRBC. The newborn remained in NICU for 3 days, and on day 4, the newborn and mother were discharged in stable condition.

Case 2:

Healthy 38 y/o G3P0 at 41 weeks gestation presents for labor induction. Labor lasted for 28 hours and was pushing for 1h and 40 min. She delivered a floppy, grey, 9 lbs baby who was grunting and was not making an adequate respiratory effort with APGAR 3/6. The anesthesiologist dosing the patient before delivery noticed that the nursing team was struggling and started PPV and stimulation. The NICU team was paged. The newborn was taken to the NICU and remained on nasal CPAP for one day, followed by nasal oxygen. The baby returned to their parents on the second postpartum day and was discharged home on the third day.

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Discussion

In many neonatal resuscitation cases, one anesthesiologist cared for the patient and neonate. Anesthesiologists are well-suited for neonatal resuscitation. However, most anesthesiologist in the L&D department lack formal NRP training during Obstetric anesthesia fellowship (2). Only 16% of anesthesiologists working in the L&D had current NRP certification, while 68% of anesthesiologists took an active part in neonatal resuscitation (3). NRP might decrease the risk of unintentional injuries that occurred in the past made by an anesthesiologist who performs neonatal resuscitation. Pediatric and neonatal anesthesia is a critical subspecialty that requires specialized training, expertise, and skills to ensure the safe and effective administration of anesthesia to children of all ages, from neonates to adolescents. The study by O'Leary and Crawford (2015) addresses the critical issue of the quality and adequacy of the core fellowship training in pediatric and neonatal anesthesia in Canada, which is a fundamental component of the education and training of pediatric anesthesia providers. The authors' emphasis on the need for ongoing evaluation and refinement of the core fellowship training program in pediatric anesthesia is particularly relevant in light of the rapidly evolving landscape of healthcare and the increasing complexity of pediatric anesthesia practice. The study's findings highlight the need for continued efforts to ensure that the core fellowship training program in pediatric anesthesia is up-to-date, comprehensive, and relevant to the current and future needs of pediatric anesthesia practice.

Furthermore, the authors' focus on the importance of standardized evaluation methods in the assessment of trainees is a crucial issue that has implications beyond the field of pediatric anesthesia. Standardized evaluation methods can help ensure consistency and fairness in the assessment of trainees and can provide valuable feedback for trainees and educators alike. The study's findings also emphasize the importance of ongoing education and training for pediatric anesthesia providers throughout their careers. As pediatric anesthesia practice continues to evolve and become more complex, ongoing education and training are essential to ensure that providers have the knowledge, skills, and expertise needed to provide the highest quality care to their pediatric patients.

The study by Bruno et al. (2017) is important in highlighting the need for neonatal resuscitation training for obstetric physicians. The authors note that while obstetric physicians are typically not the primary providers of neonatal resuscitation, they may play a critical role in facilitating the transfer of care from the delivery room to the neonatal intensive care unit (NICU). As such, it is important for obstetric physicians to have the knowledge and skills necessary to assess and stabilize newborns in the immediate post-delivery period. The authors also note that while neonatal resuscitation training is widely available to obstetric physicians, the quality and frequency of such training can vary widely. The study's findings suggest that there is a need for standardized and comprehensive neonatal resuscitation training for obstetric physicians, as well as a need for ongoing training and education to ensure that physicians maintain their skills and knowledge over time. The study's emphasis on the opinions of training program directors is also noteworthy. Training program directors are in a unique position to influence the content and quality of neonatal resuscitation training for obstetric physicians. By advocating for mandatory and comprehensive training, program directors can help ensure that obstetric physicians are adequately prepared to care for newborns in the immediate post-delivery period.

Should the same standards be applied to all anesthesiologist who care for obstetric patients in the delivery room?

References

1. Bucklin BA, Hawkins JL, Anderson JR, Ullrich FA. Obstetric Anesthesia Workforce Survey. *Anesthesiology*. 2005 Sep 1;103(3):645–53.
2. Gao W, Moss D, Schumann R, Drzymalski DM. Knowledge and comfort with neonatal resuscitation among practising anesthesiologists. *Int J Obstet Anesth*. 2019 Aug;39:148–9.
3. Davies JM, Posner KL, Lee LA, Cheney FW, Domino KB. Liability Associated with Obstetric Anesthesia. *Anesthesiology*. 2009 Jan 1;110(1):131–9.
4. Yaregal Melesse, D., & Enyew Ashagrie, H. (2022). Simulation-Based Neonatal Resuscitation Education for Undergraduate Anesthesia Students: A Pre- and Post-Evaluation of Knowledge and Clinical Skills. *Anesthesiology research and practice*, 2022, 7628220. <https://doi.org/10.1155/2022/7628220>
5. Bruno, C. J., Johnston, L., Lee, C., Bernstein, P. S., & Goffman, D. (2018). Opinions regarding neonatal resuscitation training for the obstetric physician: a survey of neonatal and obstetric training program directors. *The journal of maternal-fetal & neonatal medicine : the official journal of the European Association of Perinatal Medicine, the Federation of Asia and Oceania Perinatal Societies, the International Society of Perinatal Obstetricians*, 31(8), 1035–1039. <https://doi.org/10.1080/14767058.2017.1306052>