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Parents' Perspectives: Knowledge and Use of Blue Bulb Suction Device

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Research and Creative Experience for Undergraduates (RCEU) Proposal

Parents' Perspectives: Knowledge and Use of Blue Bulb Suction Device

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Nursing faculty collaborator on this project is Dr. Ellise Adams, Associate Professor.

Project Summary

Overview/Specific Aims. Oropharyngeal and nasopharyngeal suctioning with a bulb suction device commonly occurs in neonates as a routine delivery procedure. The purpose of suctioning at the time of birth is to prevent aspiration of material into the lower airways. Randomized control trials have identified that there are improved neonatal outcomes when wiping of the mouth and nose versus suctioning the mouth and nose in normal, term neonates who show no signs of airway compromise. 2010 American Academy of Pediatrics Neonatal Resuscitation Program, American Heart Association, and the International Liaison Committee on Resuscitation 2010 consensus group on neonatal resuscitation recommend suctioning only when clearing of the airways to prevent airway obstruction. Suctioning is an intervention that causes apnea, hypoxemia, and bradycardia and should only be used when a neonate is not able to effectively cough and promote optimal airway clearance. Furthermore, ineffective and inappropriate suctioning may cause mucosal trauma and dispersion of secretions into the lower airways if the suctioning technique is not applied properly.

Parents are given a bulb suction device in the hospital and are informed to take home with the newborn as a safety measure in case respiratory insufficiency occurs. Manual secretion removal may be required, and the bulb suction device is convenient, portable, and easy to use and is recommended in randomized control trials compared to other suction devices on the market if airway obstruction is present. What is not reported in the literature is the education the parents receive related to when to use, how to use, neonatal physiological parameters to monitor during and after use, cleaning and storage of the bulb suction device.

This proposed methodological and descriptive study is part a research program to *Improve Neonatal Outcomes by Optimizing Suctioning Processes* in collaboration with Ellise Adams, PhD, CNM. The specific aims of this study are to conduct focus groups of parents to explore the practice of suctioning and observe parents demonstrating airway clearance techniques. This study will also begin scale development for a nationwide instrument to quantify the knowledge of new parents' airway clearance of the newborn.



Figure 1. Blue bulb suction and neonate.

Student Involvement

Student Duties. The undergraduate student will collaborate with an interdisciplinary team of researchers, Dr. O'Neal (Nursing) and Dr. Adams (Nursing), to contribute new knowledge to the science of nursing. The student will interact with parents in various settings such as parenting classes and in the hospital. The student researcher will begin with a thorough literature review related to the topic of parental knowledge of airway clearance of the newborn. Clinical hours will be provided to the student researcher to shadow intrapartum, neonatal and mother-baby nurses. The student learning objective for these clinical experiences will be to observe the process of airway clearance of the newborn and the process of parental education that occurs in the hospital setting. The student will conduct focus groups with parents to explore parental knowledge, use, and cleaning of the bulb suction device.

Student Qualifications. The student will be expected to be autonomous, self-directed, and professional in appearance and conduct. The student will work directly with parents in observing suctioning practices and conducting focus groups on the knowledge, use, and cleaning of the bulb suction device.

Student Benefits. The RCEU experience working with nursing faculty members will provide the undergraduate student an opportunity to learn about research development, ethics, and focus group strategies and dynamics. The student will complete a NIH certificate on Human Subject protection at <http://phrp.nihtraining.com/users/login.php> and will learn about the IRB process.

This RCEU experience provides a clear benefit of learning new techniques and being exposed to new environments that is over and above what is routinely provided in the nursing program. An outcome of this RCEU project is that the student will have an opportunity to develop an abstract for submission to the Southern Nursing Research Conference fall 2015. The student will be involved in the development of the abstract, presentation, and a possible manuscript related to this research project.

Student Learning Outcomes

By the end of summer 2015, the student will

1. Conduct a literature review on bulb suctioning in neonates
2. Review information on focus groups: purpose, design, facilitation, and analysis.
3. Demonstrate knowledge by presenting at conferences.

Mentor Supervision and Interaction

The student will have weekly meetings with Dr. O'Neal to discuss research progress and evaluate student developed learning outcomes. Dr. O'Neal will actively provide leadership and mentorship to assist the student in meeting his/her goals associated with this project. The selected student who is interested in this study will develop new skills on leading focus groups, assessing educational effectiveness, abstract submission, poster production, and possibly manuscript submission. This project meets criteria for the honors program.