

Background Information

- Children's Hospital of Pittsburgh (CHP) is a level 4 NICU in Pittsburgh, PA.
- The ability to feed orally is often the last discharge requirement met for a preterm infant - increasing length of stay and financial burden²
- The inability to oral feed orally may be attributed to delayed oral-motor development and oral sensory aversion from treatment methods in the NICU²
- The Premature Infant Oral-Motor Intervention (PIOMI) is a 5-minute intervention designed specifically for preterm infants to build the range of motion, strength, and coordination required to feed orally¹

Occupational Therapy's Role

Occupational therapists have unique expertise in promoting feeding development, specifically addressing oral-motor development and oral sensory aversion.

Objectives

1. Create training materials for nursing staff for use of strategies to prevent oral sensory aversion and use of the PIOMI to facilitate oral feeding development.
2. Develop educational materials for caregivers on PIOMI and sensory strategies for continued feeding development following NICU discharge.

Methods

Objective 1



- Pre-Knowledge Survey:**
 - Current knowledge and confidence regarding oral-motor and sensory strategies in the NICU
- Module Distribution:**
 - Sensory Considerations for Feeding in the NICU
 - Sensory Strategies for Feeding in the NICU
 - Introduction to PIOMI
 - Steps of the PIOMI
- Knowledge Check:**
 - Three questions following each of the modules
- Post-Survey:**
 - Knowledge and confidence regarding oral-motor and sensory strategies in the NICU following module completion

Objective 2



- Needs Assessment:**
 - Surveyed NICU team
 - Reviewed site's Empower Program™ for gaps in information
- Literature Search:**
 - Oral-motor and sensory strategies for home
 - Health literacy considerations
- Creation of Education:**
 - Feedback and implementation
- Dissemination:**
 - Incorporated into site's Empower Program™

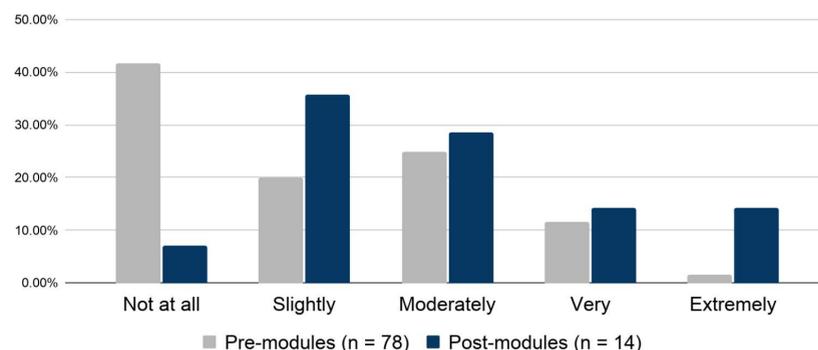
Supportive Programming



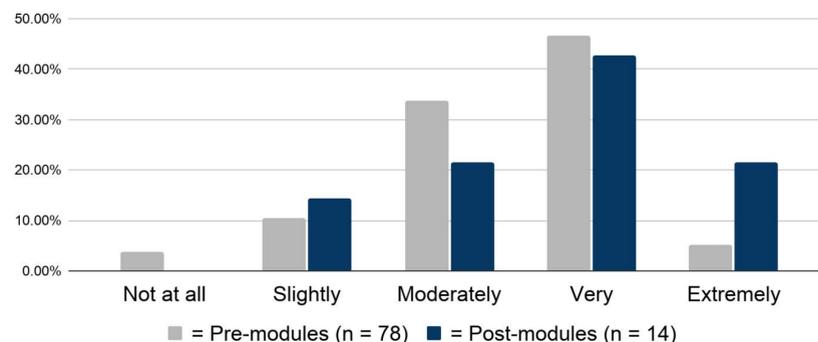
Results: Objective 1

Survey Results: Pre- and Post-Module Completion

How familiar are you with the PIOMI protocol for oral feeding readiness?



How familiar are you with strategies within nursing care to improve oral sensory processing and decrease sensory aversion?



Average Nurse Performance on Module Knowledge Checks

95.56%
Introduction to PIOMI

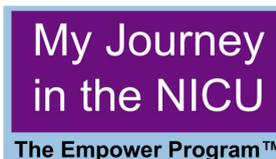
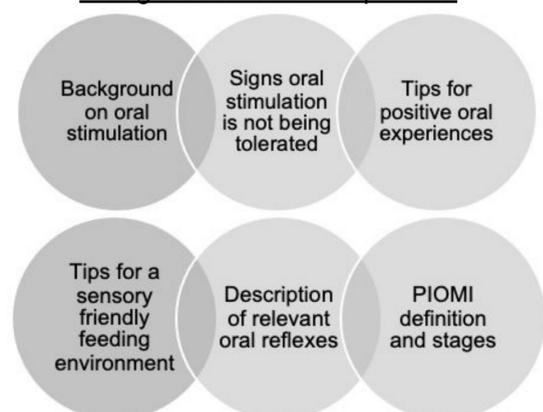
97.85%
Steps of the PIOMI

98.89%
Sensory Considerations

97.78%
Sensory Strategies

Results: Objective 2

Caregiver Handout Components



- Caregiver handout was incorporated into the existing Empower Program™
 - Empower Program™: Information booklet given to every NICU caregiver to help them feel more comfortable and prepared caring for their baby upon discharge

Discussion

- Educational modules analyzing sensory strategies and the PIOMI led to increased reported familiarity among nurses in the NICU. High knowledge check performance was reported following participation.
 - Understanding of these principles can guide the facilitation of oral motor feeding readiness among premature infants.
- Evidence-based caregiver education materials based on sensory strategies and the PIOMI were created and implemented to expand the current home programming for NICU caregivers following discharge.

Facilitators	Barriers
<ul style="list-style-type: none"> • Accessibility to site mentors and nursing educator • Program conducive to virtual platform • Widespread need recognition and buy in from staff on site 	<ul style="list-style-type: none"> • COVID-19 pandemic - limited opportunities within the NICU • Incompletion of program by nurses - four modules and post-survey • Limited time for module completion

Future Directions and Sustainability

- Incorporation into on-boarding process upon hire
- Documentation changes to include oral motor and sensory interventions
- Reserving paid time to complete modules during work day
- Creation of interactive caregiver education sessions to ensure handout carryover (videos, live sessions, etc.)

Conclusion

- The systematic, widespread standardization of oral feeding guidelines, focusing on sensory and oral motor strategies, is essential for facilitating quicker oral feeding readiness among premature infants in the NICU.
- These guidelines should include caregiver education to ensure carryover of strategies to the home following discharge.
- Occupational therapy practitioners are experts in taking a holistic approach to feeding and have the knowledge to implement these guidelines among the interdisciplinary team.
- With quicker development of feeding readiness in the NICU, premature infants may achieve discharge requirements earlier, decreasing length of stay and overall healthcare costs.

Acknowledgements

Thank you to all of the NICU staff at UPMC Children's Hospital for your continued support throughout our project implementation. Special thanks to our site mentors Kim Kubistek, OTD, OTR/L, Nicole Klasmier, CScD, OTR/L, Jamie Scheller, OTR/L, NTMTC, and Kelly Fill, MOT, OTR/L. Additional thanks to the creator of the PIOMI, Brenda Lessen Knoll, PhD, RN.

References

1. Ghomi, H., Yadegari, F., Soleimani, F., Knoll, B. L., Noroozi, M., & Mazouri, A. (2019). The effects of premature infant oral motor intervention (PIOMI) on oral feeding of preterm infants: A randomized clinical trial. *International Journal of Pediatric Otorhinolaryngology*, 120, 202-209. <https://doi.org/10.1016/j.ijporl.2019.02.005>
2. Lau, C. (2014). Interventions to improve oral feeding performance of preterm infants. *Perspectives on Swallowing and Swallowing Disorders (Dysphagia)*, 23(1), 23-45. <https://doi.org/10.1044/sas23.1.23>