Translating Interventional Research into Interdisciplinary Practice

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Premature Infant Oral Motor Intervention (PIOMI)  
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The Intervention

**Purpose**
- To assess the effect of the Premature Infant Oral Motor Intervention (PIOMI), on feeding progression and length of hospital stay in preterm infants < 30 weeks PMA

**Feeding Difficulties in Preterm Infants**

- Feeding difficulties and prolonged hospitalizations
- Immature sucking skills
- Decreased lip strength
- Decreased tongue range of motion
- Decreased swallowing

**Oral Musculature**

- Premature infants have poor oral-motor control related to:
  - weaker muscle tone around mouth
  - less sensation
  - decreased lip strength and lip seal
  - decreased tongue strength
- Decreased sucking strength and endurance

The PIOMI

- Provides assisted movement to activate muscle contraction.
- Provides movement against resistance to build strength.
- Focuses on increasing functional response to pressure and to movement, and control of movement for the lips, cheeks, jaw, and tongue.
- Cheeks, lips, gums, tongue and palate are targeted using a specific oral motor technique for 3 minutes
- Ends with non-nutritive sucking for 2 minutes

**Diffusion of Innovations Model** (Rogers, 2003)
Adoption of an innovation is influenced by the nature of it and the manner in which it is communicated to users in a social system.

**Study Timeline**

- Study begins at birth
- PIOMI begins at 26-29 weeks PMA
- PIOMI ends at 30 weeks PMA

**PIOMI = 5 days sooner to Total Oral Feeds**

- The PIOMI group transitioned to oral feedings 5 days sooner than controls \( (p = 0.042) \)
- 29 week PMA infants tolerated the PIOMI. Of the 152 times the PIOMI was done, it was never terminated due to adverse responses of infants. There were only 4 single delays for apnea, which were self-correction, and the PIOMI was continued.

**PIOMI = Reduced LOS by 2.6 days**

- The PIOMI group was discharged 2.6 days sooner than controls \( (p = .541) \)
- A 3-day decrease in LOS would save our nation more than $2 billion annually

**Reliability Study on the PIOMI:** 98% Agreement

- Researchers engaged key players in discussions:
  - RN’s
  - Neonatologists
  - Policy makers
  - Speech-Language Path’s
  - Target “Opinion Leaders” and “Early Adopters”
  - 10% of system members adopt an innovation = rapid adoption by remaining members
- Strong interpersonal ties with opinion leaders is more effective than mass-media campaigns
- Tipping Points:
  - FREE (no equipment)
  - Benefits (feeding)
  - East of Use (simple)
  - Time (quick)

**Future Research**

- Evaluate training methods
- Periodic testing of reliability
- Continue research

**Primary Reference**


**Training Materials**

- DVD
- Quick Reference
- PIOMI Tool
- PIOMI Website: www.PIOMI.com

**Evaluate Training Methods**

- Adopt as Unit/Department Policy
- Researcher consulted in policy development
- Nurse Practice Council
- Feeding Council
- Train Staff
  - RN’s
  - SLP’s
  - PIOMI “Super-Users” or “Champions”
- Develop professional training materials
  - DVD
  - PIOMI Tool
  - Quick Reference
  - Reliability Checklist

**PIOMI Tool**

- Cross all disciplines
- Enhanced by staff
- Adop Redness in LOS
- 2X
- 1X each
- 2X
- 1X each
- 100%
- PMA
- Feeding Council
- Policy makers
- Early Adopters
- “Opinion Leaders”
- Improved
- Difficulties in Preterm Infants
- Feeding Council
- Nursing
- Parent/Staff responses to the PIOMI
- PMA
- Feeding Difficulties in Preterm Infants
- PIOMI Tools
- Premature Infant Oral Motor Intervention (PIOMI)
- Motor Intervention on Feeding Progression and Length of Stay in Preterm Infants,