

# NOVEL News asp<sup>en</sup>

## New Opportunities for Verification of Enteral Tube Location Project

### Letter from the Chair

Greetings all and welcome to the 5th edition of our newsletter. It is my hope that we can keep you engaged in the New Opportunities for Verification of Enteral tube Location (NOVEL) project by updating you on our accomplishments and current projects. This is our 5<sup>th</sup> year for the NOVEL project and most of the original members are still with us along with a few additions.

Here is a list of the current NOVEL project members:

Beth Lyman MSN, RN, CNSC Children's Mercy Kansas City (Project Chair, representing ASPEN)

Sharon Irving PhD, CRNP, FCCM, FAAN; University of Pennsylvania School of Nursing (representing AACN)

Carol Kemper PhD, RN; Children's Mercy Kansas City (representing Patient Safety Officers)

Candice Moore, BSN, RN; Cincinnati Children's Hospital (representing home care)

LaDonna Northington RN, DNS; University of Mississippi School of Nursing (representing Society of Pediatric Nursing)

Katie Oleksak, MSN, FNP; Pediatric Gastroenterology, Levine Children's Specialty Center (representing Association of Pediatric Gastroenterology and Nutrition Nurses (APGNN))

Gina Rempel MD, FRCPC, FAAP; Children's Hospital Winnipeg (representing ASPEN and international members)

Wednesday Sevilla, MD, MPH, CNSC; Children's Hospital of Pittsburgh, UPMC (representing ASPEN)

Kerry Wilder RN MBA from Texas Scottish Rite Hospital (representing NANN)

Deahna Visscher; Parent Representative and Safety Advocate Denver, CO

Peggi Guenter PhD, RN, FAAN, FASPEN; ASPEN staff liaison and advisor

Our 2018 Action Plan is now being developed as there is more that needs to be done. We plan to continue to push best practices for tube verification through publications, presentations, videos, and continued research. We welcome your suggestions.

Beth Lyman, RN, MSN, CNSC

NOVEL Project Chair and Senior Program Coordinator for the Nutrition Support Team, Children's Mercy Hospital, Kansas City, MO [blyman@cmh.edu](mailto:blyman@cmh.edu)

### EDUCATION PAPER PUBLISHED

In keeping with the goal of the NOVEL project to promote consistency of practice in using existing bedside methods for verification of nasogastric (NG) tube location after placement and before each NG tube use, and in response to questions surrounding how we teach these safe practices, in both the hospital and the home environment, the NOVEL project established a subgroup to look at educational materials that support this important patient safety initiative. Teaching materials from one Australian and one Canadian site that used pH measurement as one of the methods to verify tube location, served as the framework for the teaching template that was developed. An article was written into which the Safe Practices for NG Placement Verification template was embedded. This teaching package/template can be adapted in a variety of care settings in different countries to make it relevant and promote patient safety. This paper, [Use of Nasogastric Feeding Tubes for Children at Home: A Template for Caregiver Education](#), was published in *Nutrition in Clinical Practice* with the full education booklet published in the NCP supplementary material.

## NICU pH STUDY

A small interdisciplinary team is completing a research project to evaluate the use of pH measurement of the aspirate from an enteral tube as a method to verify tube placement in infants and neonates. The use of enteral feeding tubes in this population is commonplace within the inpatient setting and the consequences of misplacement are significant. Use of pH is a recommended bedside method for evaluating enteral tube placement, however, questions remain regarding the utility of the use of pH measurement with infants and neonates. Concerns about use of pH often focus on various factors that are thought to influence the pH of gastric aspirate in infants including the presence of formula in the aspirate, the maturity of the neonatal and ability to produce gastric acid and the impact of gastric acid reducing medications. Generally, a pH of less than or equal to a pH of 5 is the cut-off used to verify the tube is correctly placed, while a pH above 5 indicates the tube may be misplaced.

Nearly 8000 pH readings from over 1000 patients are being analyzed to determine the distribution of pH readings above 5 and those that were < or = to 5. In addition, the relationships between pH measurement and various factors such as gestational age, time since last feeding, and administration of acid reducing medications was analyzed to evaluate patterns. This manuscript will be submitted to a neonatal focused journal.

## HOME CARE SURVEY PUBLISHED

There is very little literature on how parents manage nasogastric (NG) tubes in the home. A survey study was conducted of parents and medical equipment/home care companies. The results of this study mirrored what was found in the original hospital study. Parents are taught how to insert, trouble shoot, and replace the NGT by nurses in the hospital prior to discharge.

Most families use the NEMU (nose, earlobe, midway umbilicus) as the method of insertion. Results indicate that parents routinely replaced these tubes anytime from once weekly to monthly. The procedure for replacing the tube and checking for correct placement varied greatly. Methods used included pH paper measurement, listening with a stethoscope, withdrawing stomach contents or some combination. There was not any consistency. The results also indicated that complications experienced by children when tubes are misplaced include coughing, choking, gagging, turning blue. Sometimes these complications warranted follow up with health care providers. Because of this finding, the NOVEL group continues to explore the best practices that can be taught to families to minimize complications at home. LaDonna Northington led the publication of the survey in [Journal of Pediatric Nursing](#) and then the findings were translated into a paper for Home Healthcare Nurse which has been accepted for publication.

## NOVEL PROJECT POSITION PAPER

The NOVEL Project is developing an ASPEN Board Approved position paper on best practices to be used for pediatric tube placement verification. It is anticipated that this paper will be published in 2018.

## BEST PRACTICES VIDEOS UNDER DEVELOPMENT

The NOVEL Project has received an educational grant from Cardinal Health (formerly Medtronic) to develop videos for tube placement and verification in children and infants. These best practice videos will be available in 2018 for use by clinicians and caregivers.

## PATIENT SAFETY MOVEMENT FOUNDATION

The [Patient Safety Movement Foundation](#) has asked Deahna Visscher and Beth Lyman to assist them in developing and presenting an international paper on the topic of NG misplacements. This paper is to be presented in London in February of 2018. This international workgroup voted this topic as their number 1 priority for 2018. The work will cover the entire age span and is working closely with staff at the National Health Service of the United Kingdom as they have made much progress toward making NG tube misplacement a Never Event. Our entrée into this group was via our parent member, Deahna Visscher, who addressed the group at their mid-year meeting in the summer. She shared her experience with her 10-day old son Grant who died after an NG tube was accidentally placed in his lung and feeds were administered. Deahna will be making a video at the London meeting at the request of the foundation.

## NICU STUDY GROUP

A national NICU research team has been identified to minimize the risk of complications due to misplaced orogastric and nasogastric feeding tubes. They have worked closely together for the past 24 months to develop a research proposal. The team represents NICUs from San Diego, Dallas, Colorado Springs, Kansas City, Duke University and the University of Florida—all Level III to IV nurseries. The research team had to back up a bit to get more preliminary data to convince reviewers at NICHD that this is an important clinical issue in this population.

## ASPEN 2018 NUTRITION SCIENCE & PRACTICE CONFERENCE

The NOVEL Project group will meet at the [ASPEN 2018 Nutrition Science & Practice Conference](#), formerly known as Clinical Nutrition Week. This meeting will be held in Las Vegas on Tuesday January 23rd, 2018 at 2P in the meeting venue at Caesars Palace. Anyone interested in this issue, from clinicians to industry members, is welcome to attend.