

ST34-1- Validating Benefits of Piloting an Electromagnetic-Guided Enteral Access System Using a Designated Team in an Intensive Care Unit

Donald K. Maxwell, DO, MM, FCCM, FCCP; Laura Melendez, RN, MSN;
Heather Leinbach, Pharm Critical Care, Banner Desert Medical Center, Mesa, AZ.

Introduction: Enteral feeding is the preferred route of delivering nutrition to critically ill patients, but often is delayed by unsuccessful, blind post-pyloric placement attempts and repetitive abdominal radiographs. Multiple attempts at this procedure increase the risk for patient injury and require additional hospital resources.

Methods: After manual review of abdominal single view x-rays (KUBs) with an indication for feeding tube placement between January 2006 and June 2006, an electromagnetic feeding tube placement device was introduced into the intensive care units on July 2008. Analysis of data pre and post-implementation of this device was performed after pilot study completion.

Results: During a retrospective review from January 2006 to June 2006, 139 blindly placed feeding tubes requiring 270 KUBs were identified. Three tubes were placed in the respiratory tract and nine in the esophagus. One cardiopulmonary arrest occurred because of pulmonary injury from a malpositioned tube. Less than 18% of all blindly placed tubes were post-pyloric.

After introduction of an electromagnetic-guided enteral access system, 96 enteric feeding tubes were placed from July 2008 to November 2008. There were zero respiratory and esophageal (0%), 19 gastric (19.8%), and 77 post-pyloric (80.2%) feeding tubes placed using this device.

There were no pneumothoraces, bronchopleural fistulas, or bowel injury ($p=0.0015$) and the post-pyloric accuracy was better than blind placement ($p<0.001$). The average number of KUBs per tube decreased from 1.94 to 1.27 while piloting this device. Costs were reduced by \$231.61 per tube placed with a total savings of up to \$54,292.58.

Conclusions: There is validation that the use of an electromagnetic-guided enteral access system by a designated team prevents feeding tube placement complications, improves accurate postpyloric tube position, and reduces tube insertion related costs.