Letters are welcome and encouraged. They should raise points of current interest in the care of critical or high acuity patients or address topics that previously have appeared in the American Journal of Critical Care. Please be concise; letters are subject to editing for length and clarity. Include your name, credentials, title (optional), institutional affiliation, city and state, and phone number (for verification, not publication). Address letters to ajcc@aacn.org. Correspondence also may be sent via eLetters from the journal’s Web site, www.ajcconline.org.

Reminding Us That We Are “Tough and Competent”

Thank you for the inspiring (and for me, timely) editorial, “Tough and Competent.”

I grew up in awe of space travel and desperately wanted to be a “nurse in space” on the space shuttle. So I read the editorial that recounted the history of NASA with enjoyment and fascination.

In this current health care environment, there is a lack of leaders who will shine the light on “carelessness, incapacity, and neglect.” They are not inspiring us to be tough and competent, and to never compromise regarding our responsibilities.

But this piece spoke to my head and heart when you referred to NASA’s operations and the parallels to critical care. A couple of weeks ago I had lost my inspiration when 5 health care–associated infections were sent to me tagged to the units in my division. This occurred after we had several months of 1 or 2 health care–associated infections. I was feeling defeated and worried that all of the work on reducing them was meaningless. The next day I decided to move forward and embrace the current state of events as a continued challenge.

You are right about critical care professionals, we are tough and competent. We just need to be reminded of that.

CRYSTAL LOGSDON, ACNS-BC, MSN, CCNS, CCRN
Savannah, Georgia

FINANCIAL DISCLOSURES
None reported.

REFERENCES

doi: http://dx.doi.org/10.4037/ajcc2016138

Accuracy of Electromagnetic Placement Devices

I wanted to respond to the article by Bryant et al, titled “Verifying Placement of Small-Bore Feeding Tubes: Electromagnetic Device Images Versus Abdominal Radiography.”

Although the authors’ conclusions did not support eliminating radiographs to confirm correct tube placement following use of an electromagnetic tube placement device (EMPD), there are some major concerns with this study that need to be highlighted.

First, training and competency are absolutely essential before a clinician uses any medical device. This holds true for any piece of equipment including the EMPD for feeding tube placement.

The authors focused on the perceived inaccuracy of the EMPD. However, a focus and concern should be on inadequate nurse training and allowing clinicians without demonstrated competence to use a piece of equipment. With the EMPD, it is essential to include not only competency for tube placement, but also interpretation of the tracings.

In this study, nurse training was probably inadequate. The authors state “some degree of training” but “no documented evidence of standardized training or competency was found.” They also state there was “no provision for annual revalidations of clinical or written competencies.” Some nurses had zero supervised placements before placing feeding tubes. This is unacceptable. Numerous institutions use EMPD effectively and have safely eliminated routine radiograph confirmation for feeding tubes. These institutions have in-depth education, a minimum number of supervised placements, and competency demonstrations on placement and interpretation before clinicians can use the device.

Institutions with limited numbers of trained clinicians (tube teams) or with significant opportunities for feeding tube placements and more training have eliminated lung placements. In stark contrast to the Bryant et al study, I and my colleagues found clear accuracy with using EMPD placements and have safely eliminated radiographs. Also, Kaffarnik’s radiographic interpretations correlated 100% with Cortrak data even in patients with anatomic anomalies after surgery, and the Kaffarnik study ceased performing abdominal radiographs in most cases after the first 10 patients. In that study they used contrast with radiographs. The study I led found that after injecting contrast there was a 12% error in radiographic interpretation with small-bore feeding tube placement verification. The EMPD with cross-sectional view was found to be more accurate in predicting location of small-bore feeding tubes as opposed to the 2-dimensional view on a radiograph. In the Bryant et al study contrast was not used with radiographs.

The retrospective nature of this study did not allow review of critical factors in the use of EMPD and did not take into account possible procedural deviations. One key factor not addressed by this research is basic positioning and use of the EMPD. No data...
were provided on the level on the depth cross-sectional or lateral views. This is critical information when determining placement in the small bowel. During a placement, when the tube traverses from the stomach to the small bowel, there will be an increase in depth as the small bowel is posterior to the stomach. The EMPD shows depth of placement in real time and if this was not observed, then the tube is most likely not in the small bowel. Previous studies have shown that radiographic interpretations can be misleading due to the limited anteroposterior view and the depth information on the EMPD contributes to more accurate interpretations.

Placement of the EMPD receiver is another critical element. This study was done retrospectively and accuracy of the receiver placement was not observed. If the receiver was placed too high on the patient, then tracings would appear lower than they actually were. Also, the receiver should be parallel to the patient's spine, so if the receiver was angled up or down due to patient anatomy (i.e., large abdomen or barrel chest), this alteration in position can also impact the placement.

The most concerning aspect of this study was the unrecognized lung placements. Inadvertent pulmonary placement is easily detected upon initial insertion using the EMPD, which is one of the key advantages of using a real-time visualization system. When the receiver is positioned properly with the front foot at the patient's xiphoid process, pulmonary placement can be detected by a deviation off midline of the track into the upper quadrants. However, if the device was not started within the first 5 to 10 cm, or when passing the posterior pharynx, then it is possible that the final tracing could have shown the tube already in the lung and looked similar to a stomach placement. The critical aspect is observing the tracing upon insertion and watching the entire pathway of the tracing. If nurses were not trained adequately, this essential step may have been overlooked and could have resulted in the lung placements not being recognized.

Bryant et al. concluded, “Based on results of this investigation, a process review and retraining of clinicians was initiated at the study institution.” This is a much needed, appropriate, positive outcome based on the results presented by the authors.

In summary, it is imperative that the results of this investigation not be taken out of context. These results are concerning, but we must consider that a lack of training in use and interpretation of the EMPD placements are the probable culprits, rather than malfunction or ineffectiveness of the device itself. As with any piece of medical equipment, when used incorrectly by untrained clinicians, patient injury can result. If the device is used by competent, trained, skilled clinicians in the manner intended, then the EMPD has been shown in many previous research studies to be safe and accurate for feeding tube placements.

JAN POWERS, RN, PhD, CCNS, CCRN, CNRN, NE-BC
Indianapolis, Indiana

FINANCIAL DISCLOSURES
The author serves on the following speakers’ bureaus: Abbott Nutrition, Corpak, and Sage Products.

REFERENCES

doi: http://dx.doi.org/10.4037/ajcc2016815

Response:
We appreciate the thoughtful critique of our article and would like to respond to the key points raised by Dr. Powers. First, we thoroughly agree that adequate training is needed for the electromagnetic placement device (EMPD) to be used successfully. We acknowledge that training on use of the device in our institution was likely inadequate. The question is, “What is adequate?” The successes described in studies cited by Powers were achieved by highly trained individuals. For example, prior to data collection, clinicians in the Koopmann et al study had 2 months experience with the device after being trained by a company representative. Perhaps the answer is for institutions wishing to use the EMPD to require similar degrees of training and experience for any clinician before he or she is allowed to use the device. However, the practicality and cost of this lengthy training program might be prohibitive to some institutions.

Second, we did not imply that the EMPD is a defective device. Instead, we described the inability of individuals in our institution to use the device effectively. According to case reports in the MAUIDE (US Food and Drug Administration’s Manufacturer and User Facility Device Experience) database, other institutions are experiencing similar problems. We have no commercial interest (positive or negative) regarding the device. Our interest is in promoting patient safety.

Third, the writer indicates that “numerous institutions use the EMPD effectively and have
safely eliminated radiograph confirmation for feeding tubes.” It would be helpful to know what kinds of training are used in these facilities. Again, this is important since there are clearly other institutions reporting far less success (as indicated in the MAUDE database).

Fourth, the reviewer commented on the disturbing problem of unrecognized lung placements in our retrospective study. We share this concern. That is precisely why we published our paper. The problem of inadvertent respiratory placements is not limited to our institution. Again, one only has to review case reports in the MAUDE database to recognize this fact.

In closing, we are hopeful that clinicians will consider the pros and cons of eliminating a confirmatory radiograph after EMPD-assisted tube insertions. Is the cost savings from such an action worth the potential risk to a patient?

VERA BRYANT, DNP, ARNP, ANCP-BC, CCRN, CMC, CNRN, SCRN
Miami, Florida

FINANCIAL DISCLOSURES
None reported.

REFERENCES

doi: http://dx.doi.org/10.4037/ajcc2016265
Response
Vera Bryant

Am J Crit Care 2016;25 199-200 10.4037/ajcc2016265
©2016 American Association of Critical-Care Nurses
Published online http://ajcc.aacnjournals.org/

Personal use only. For copyright permission information:
http://ajcc.aacnjournals.org/cgi/external_ref?link_type=PERMISSIONDIRECT

Subscription Information
http://ajcc.aacnjournals.org/subscriptions/

Information for authors
http://ajcc.aacnjournals.org/misc/ifora.xhtml

Submit a manuscript
http://www.editorialmanager.com/ajcc

Email alerts
http://ajcc.aacnjournals.org/subscriptions/etoc.xhtml