



VITALS

for Medical Transport Professionals

A Weekly Safety Newsletter

ENDOTRACHEAL INTUBATION: Part 2 TO TUBE OR NOT TO TUBE, SHOULD THAT BE A QUESTION?

We must be introspective when we look at the use of endotracheal intubation (ETI). We shouldn't generalize and assume that our frequency of ETI will match that of the Pennsylvania experience described in the last "Vitals". After all, the frequency with which ETI is performed varies greatly from service to service. Although an exhaustive analysis was not done, it is reasonable to conclude that the number of successful ETIs required for completion of a paramedic course also varies. For example, the Kansas Board of EMS addresses ETI in paramedic training by mandating "successful performance of three endotracheal intubations on live patients, with written verification by a physician or CRNA competent in the procedure that the student is competent in performing the procedure." The NHTSA National EMS Scope of Practice Model Final Draft 4.0 includes ETI as one of the minimum psychomotor skills of the Paramedic.

If a National standard lists ETI as a minimum skill for paramedics, but paramedic students might have a small number of opportunities to perform live ETI during training and don't get to use the technique much once actually practicing, how can we ensure competency? There is ample evidence in the literature that endotracheal tubes inserted by medics on occasion either start out or end up in a place other than the trachea. It is not surprising that both the American College of Emergency Physicians and the National Association of EMS Physicians have Policy Statements or Position Papers on the verification of endotracheal tube placement.

Independent of the frequency with which ETI is performed, tube placement must be verified at the time of insertion and ongoing as a dynamic process as part of continuous patient assessment for each patient encounter. The methodologies used to verify tube placement fall into two categories; observed (direct visualization, observation of chest movement, auscultation of breath sounds, absence of epigastric sounds with respiration, presence of an exhaled tidal volume, reservoir bag compliance, endotracheal cuff maneuvers, absence of air escape, tube condensation with exhalation, and absence of gastric contents with exhalation) and measured (pulse oximetry, end-tidal carbon dioxide measurement, and esophageal detector device.). It must be remembered that no single technique is 100% reliable in all situations.

The Medical Director should determine the airway adjuncts and placement confirmatory devices/methods to be used by a service. Policies, procedures and protocols for all airway adjunct selection, as well as endotracheal tube placement, tube placement verification and pertinent documentation in the medical record should be developed under the direct supervision and approval of the Medical Director. More to come.

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