

N006 Validation of Canadian clinical practice guidelines for nutrition support in mechanically ventilated, critically ill adult patients: results of a prospective observational study.

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Background: In the critical care setting, nutrition support clearly influences patient outcome. Yet, there is tremendous variability in how nutrition support is provided to critically ill patients suggesting that care may not always be applied optimally. Recently, evidence-based, clinical practice guidelines (CPGs) have been developed for the critical care setting. To validate these guidelines, we hypothesized that intensive care units (ICUs) whose practice, on average, was more compliant with the guidelines would have greater success with enteral nutrition (EN).

Methods: We conducted a prospective, observational study in 59 ICUs in Canada. In May of 2003, each ICU recorded nutrition support practices on a consecutive cohort of mechanically ventilated patients in their ICU that stayed for a minimum of 72 hours. The sites enrolled an average of 10.8 (range 4-18) patients for a total of 638 patients. Patients were observed for an average of 10.7 days (range 3-12). The median age was 65 (range 15-94), the most common admission diagnosis was medical (52.0%), and the median length of stay in ICU was 15.4 days. We then examined the association between 5 key CPGs (use of EN and PN, feeding protocol, early EN, small bowel feedings, and motility agents) and adequacy of EN. We defined adequacy of EN as the percent of prescribed calories that patients actually received.

Results: Across sites, the average adequacy of EN over the observed stay in ICU ranged from 1.8% to 76.6% (average= 40.4 %). ICUs with a greater than median utilization of PN (>15.5% patient days) had a much lower adequacy of EN (31.7 vs. 48.8%, $p < 0.0001$). ICUs that utilized a feeding protocol had a higher adequacy of EN than those that did not (41.9 vs. 36.9%,

$p=0.07$). ICUs that initiated EN on $> 50\%$ of their patients within the first 48 hours had a higher adequacy of EN than those that had fewer patients with early EN initiation (49.5 vs. 31.7%, $p<0.0001$). ICUs that had a $>50\%$ utilization of motility agents and/or any small bowel feedings in patients with high gastric residuals had a higher adequacy of EN than those ICUs who used them less than average (45.0 vs. 36.8%, [$p=0.05$] and 48.9 vs 40.2% [$p=0.08$], respectively).

Conclusions: ICUs that were more compliant with the Canadian CPGs were more likely to successfully feed patients EN. Adoption of the Canadian CPGs will likely lead to improved nutrition support practice in ICUs across the world. This may translate into better outcomes for critically ill patients receiving nutrition support