2015 CPGs vs 2018 Systematic Reviews
Summary of Changes

Legend

Text	Indication
Red text	Indicates changes from 2015 conclusions
is associated	Significant difference between groups
may be associated	Trend towards a difference between groups
has no effect	Insignificant difference between groups

Topic #	Topic Name	2015 CPG Conclusions	New articles	2018 Systematic Review Conclusions
1.0	EN vs PN	1) The use of EN compared to PN is not associated with a reduction in mortality in critically ill patients. 2) The use of EN compared to PN is associated with a significant reduction in the number of infectious complications in the critically ill. Canadian Clinical Practice Guidelines 3) The use of EN compared to PN was associated with a significant reduction in ICU LOS and a trend towards a reduction in hospital LOS, but no difference found in ventilator days. 4) The use of EN compared to PN may not be associated with an improvement in calories due to underfeeding in both groups 5) The use of EN may be associated with increased episodes of vomiting.	2	1) The use of EN compared to PN is not associated with a reduction inmortality in critically ill patients. 2) The use of EN compared to PN is associated with a reduction in the number of infectious complications in the critically ill in trials where patients in the PN group received more calories than in the EN group. 3) The use of EN compared to PN was may be associated with a significant reduction in ICU LOS and ventilator days, but it has no effect on hospital LOS. Significant heterogeneity limits the inferences from these aggregated analyses. 4) The use of EN compared to PN may not be associated with an improvement in calories due to underfeeding in both groups 5) The use of EN may be associated with increased episodes of vomiting. 6) The use of EN compared to PN has no effect on patient reported outcomes.

2.0	Early vs Delayed EN	1) Early enteral nutrition, when compared to delayed nutrient intake is associated with a trend towards a reduction in mortality in critically ill patients. 2) Early enteral nutrition, when compared to delayed nutrient intake is associated with a significant reduction in infectious complications. 3) Early enteral nutrition, when compared to delayed nutrient intake has no effect on ICU or hospital length of stay. 4) Early enteral nutrition, when compared to delayed nutrient intake improves nutritional intake.	1	No changes
3.1	Indirect calorimetry vs predictive	1) The use of indirect calorimetry compared to predictive equations to meet enteral nutrition needs has no effect on mortality. 2) The use of indirect calorimetry compared to predictive equations as a guide to supplement EN with PN is associated with a significant reduction hospital mortality. 3) The use of indirect calorimetry compared to predictive equations as a guide to supplement EN with PN may be associated with a higher incidence of infections. 4) The use of indirect calorimetry compared to predictive equations as a guide to supplement EN with PN may be associated with a longer ICU length of stay, and duration of ventilation. 5) The use of indirect calorimetry compared to predictive equations may result in improved nutritional intake.	No new articles	

3.2	Target dose EN	1) Early enhanced EN compared to slower rate of advancement of EN has no effect on mortality in the critically ill patient 2) Early enhanced EN compared to slower rate of advancement of EN has no effect on ICU LOS but is associated with a significant increase in hospital lengths of stay in the critically ill patient 3) Early enhanced EN compared to a slower rate of advancement of EN is associated with a significant reduction in the # infections and a trend towards a reduction in complications in head injured patients. Early enhanced EN compared to a slower rate of advancement of EN results in a significantly higher calorie and protein intake/lower calorie deficit in head injured patients and other critically ill patients.	2	1) The use of hypocaloric enteral nutrition vs full feeds is not associated with a reduction in overall and hospital mortality but may be associated with a reduction in ICU mortality. 2) The use of hypocaloric enteral nutrition vs full feeds has no effect on ICU or hospital LOS. 3) The use of hypocaloric enteral nutrition vs full feeds has no effect on infectious complications. 4) The use of hypocaloric enteral nutrition vs full feeds may be associated with a decrease in length of ventilator support.
3.3a	Trophic vs full feed	1) The use of trophic vs full feeds has no effect on mortality in critically ill patients 2) The use of trophic vs full feeds has no effect on VAP in critically ill patients 3) The use of trophic vs full feeds may be associated with significant underfeeding but better gastrointestinal tolerance in critically ill patients. 4) The use of trophic vs full feeds has no effect on longterm physical or cognitive function or survival but may be associated with poorer functional outcome at 12 months	No new articles	

3.3b	Hypocaloric EN	1) The use of hypocaloric enteral nutrition vs full feeds is associated with a trend towards a reduction in ICU mortality and hospital mortality in critically ill patients. 2) The use of hypocaloric enteral nutrition vs full feeds has no effect on ICU or hospital LOS 3) The use of hypocaloric enteral nutrition vs full feeds is associated with a decrease in length of ventilator support.	3	1) The use of hypocaloric enteral nutrition vs full feeds is not associated with a reduction in overall and hospital mortality but may be associated with a reduction in ICU mortality. 2) The use of hypocaloric enteral nutrition vs full feeds has no effect on ICU or hospital LOS. 3) The use of hypocaloric enteral nutrition vs full feeds has no effect on infectious complications. 4) The use of hypocaloric enteral nutrition vs full feeds may be associated with a decrease in length of ventilator support.
4.1a	Supplemental Arginine and Select Other Nutrients	1) Diets supplemented with arginine and other nutrients have no effect on overall mortality in critically ill patients. 2) Diets supplemented with arginine and other nutrients have no effect on rate of infectious complications in critically ill patients. 3) Diets supplemented with arginine and other nutrients have no effect on hospital length of stay, ICU length of stay and may possibly reduce duration of mechanical ventilation in critically ill patients.	1	No changes

4.1bi	Fish oil, borage oil, aox	1) Bolus supplementation of fish oil/borage oil/antioxidants vs placebo has no effect on mortality, infections in critically ill patients, ventilator free days or ICU length of stay. 2) When compared to a standard/high fat formula, the use of an enteral formula with fish oil/borage oil and antioxidants administered continuously is associated with a significant reduction in 28 day mortality in patients with ALI/ARDS	2	1) When compared to a standard/high fat formula, the use of an enteral formula with fish oil/borage oil and antioxidants administered continuously is associated with a reduction in mortality in patients with ALI/ARDS or sepsis. 2) When compared to a standard/high fat formula, the use of an enteral formula with fish oil/borage oil and antioxidants has no effect on infectious complications. 3) When compared to a standard/high fat formula, the use of an enteral formula with fish oil/borage oil and antioxidants may be associated with a reduction in ICU LOS. 4) When compared to a standard/high fat formula, the use of an enteral formula with fish oil/borage oil and antioxidants is associated with a reduction in ventilator dependent days.
4.1bii	Fish oil supplementation	1) Fish oil supplementation vs placebo has no effect on mortality or infections in patients with ALI/ARDS. 2) Fish oil supplementation vs placebo has no effect on ICU length of stay or hospital length of stay. 3) Fish oil supplementation vs placebo is associated with a trend towards a reduction in duration of mechanical ventilation.	1	No changes
4.1c	EN Glutamine	1) Glutamine supplemented enteral nutrition is associated with a reduction in mortality in burn patients, but inconclusive in other critically ill patients. 2) Glutamine supplemented enteral nutrition may be associated with a reduction in infectious complications in burn and trauma patients. 3) Glutamine supplemented enteral nutrition is associated with a significant reduction in hospital length of stay in burn and other critically ill patients but not in trauma patients and may be associated with a reduction in ICU LOS in trauma patients	1	No changes

4.1d	OKG	1) No difference in mortality in critically ill burn patients receiving EN supplementation of OKG 2) EN supplementation of OKG may be associated with improved nutritional indices and may result in improved wound healing in burn patients.	No new articles	
4.2a	High fat/low CHO	1) A high fat, low CHO enteral formula may be associated with a reduction in ventilated days in medical ICU patients with respiratory failure and better glycemic control in critically ill patients with hyperglycemia. 2) No difference in mortality, infections or LOS found between the critically ill patients receiving high fat/low CHO formula or standard.	4	No changes
4.2b	Low fat/high CHO	1) Low fat enteral feeding may be associated with lower incidences of pneumonia and a trend towards a reduction in LOS in burn patients.	No new articles	
4.2c	High/low protein	1) An escalating protein feeding schedule (1.5 to 2.5 gm/kg/day) vs 2 gm/kg/day has no effect on mortality in critically ill patients on CRRT. 2) A higher protein formula has no effect on mortality and infectious complications in head injured patients. 3) A higher protein formula has no effect on ICU length of stay or duration of mechanical ventilation	1	1) A higher protein formula has no effect on mortality in critically ill patients. 2) A higher protein formula has no effect on and infectious complications in critically ill head injured patients. 3) A higher protein formula has no effect on ICU length of stay, hospital length of stay or duration of mechanical ventilation in critically ill patients.
4.2d	Fat modified	New topic in 2018	1	1) A fat modified enteral nutrition formula has no effect on mortality, LOS or ventilator days. 2) A fat modified enteral nutrition formula may be associated with improved feeding tolerance.
4.3	Protein vs peptides	1) No difference in mortality, infections, or length of stay between patients receiving a peptide based vs. a standard formula. 2) No difference in diarrhea between the groups receiving peptides vs. standard formula. 3) No difference in energy or protein intake patients receiving a peptide based vs. a standard formula.	2	No changes

4.4	pH	1) Low pH feeds, when compared to standard formula, have no effect on clinical outcomes in the critically ill adult.	No new articles	
4.5	Fibre	1) Enteral feeds with fibre compared to standard feeds had no effect on diarrhea 2) Enteral feeds with fibre compared to standard feeds may be associated with a reduction in mortality, hospital length of stay. 3) Enteral feeds with fibre compared to standard feeds have no effect on ICU length of stay.	2	No changes
5.1	Feeding protocols	1) Feeding protocols/algorithms with prokinetics, post-pyloric tubes may be associated with a trend towards a reduction in hospital mortality and a significant reduction in hospital length of stay. 2) Feeding protocols with prokinetics and a higher gastric residual volume threshold (250 mls) are associated with a trend towards a reduction in gastric residual aspirations and less time taken to reach goal feeding rate in the critically ill. 3) Feeding protocols with higher target rates, volume based goals, use of a semi-elemental formula, protein supplements, prophylactic use of motility agents and higher gastric residual volumes (300 mls) are associated with a significantly higher calorie and protein intake and a decreased time to start of enteral nutrition in critically ill patients.	0	*Though there were no new articles in this update, conclusions changed in this topic as we re-structured topics 3.2, 3.3b and 5.1.* 1) Feeding protocols/algorithms may be associated with a reduction in hospital mortality and hospital length of stay. 2) Feeding protocols/algorithms do result in an earlier start of EN and improved overall nutritional adequacy.
5.2a	Motility agent use	1) Motility agents have no effect on mortality or infectious complications in critically ill patients. 2) Motility agents may be associated with an increase in gastric emptying, a reduction in feeding intolerance and a greater caloric intake in critically ill patients.	4	1) Motility agents have no effect on mortality, or infectious complications, LOS or ventilation duration in critically ill patients.
5.2b	Motilitiy agents vs intestinal feeds	New topic in 2018	1	1) Intestinal feeds have no effect on mortality, VAP, LOS or ventilator days. 2) Intestinal feeds may be associated with improved feeding tolerance and amount of EN received.

5.3	Small bowel vs gastric	1) Small bowel feeding, compared to gastric feeding may be associated with a reduction in pneumonia in critically ill patients. 2) No difference in mortality or ventilator days in critically ill patients receiving small bowel vs. gastric feedings. 3) Small bowel feeding improves calorie and protein intake and is associated with less time taken to reach target rate of enteral nutrition when compared to gastric feeding.	1	No changes
5.4	Body position	1) Semirecument position may be associated with a significant reduction in pneumonia in critically ill patients. 2) Semirecument position has no effect on mortality, ICU length of stay or duration of mechanical ventilation.	No new articles	
5.5	Threshold of GRVs	1) GRVs of 500 mLs vs 250 mLs have no effect on mortality, infections or ICU LOS 2) Not checking GRVs vs checking GRVs > 250 ml threshold has no effect on mortality, infections, ICU/hospital length of stay 3) Monitoring GRVs every 4 hours vs up to every 8 hours has no effect on mortality, VAP or ICU LOS but may be associated with a trend in reducing hospital LOS. 4) GRVs of 500 mLs vs 250 mLs are not associated with increased gastrointestinal complications 5) GRVs of 500 mLs vs 250 mLs are associated with significantly better nutrition delivery. 6) Not checking GRVs vs checking GRVs > 250 ml threshold is associated with a significant better caloric delivery. 7) Monitoring GRVs every 4 hours vs up to every 8 hours are associated with a reduction in vomiting/regurgitation but had no effect on nutrition delivery.	No new articles	
5.6	Discarging GRVs	1) Re-feeding GRVs is not associated with more gastric complications when compared to discarding GRVs.	No new articles	

5.7	Fasting	New topic in 2018	1	1) A shorter fasting time pre-operatively has no effect on mortality, LOS or ventilator days. 2) A shorter fasting time pre-operatively may be associated with better caloric delivery in the 24h period pre-operatively.
6.1	Closed vs open system	1) Closed system/aseptic techniques of enteral nutrition compared to open/routine are associated with a trend towards a reduction in diarrhea in critically ill patients.	No new articles	
6.2	Probiotics	1) The addition of probiotics to enteral nutrition has no effect on hospital or ICU mortality. 2) The addition of probiotics to enteral nutrition is associated with a significant reduction in overall infectious complications and a trend towards a reduction in the incidence of VAP. This was seen only in the subgroup of lower quality studies. 3) The addition of probiotics to enteral nutrition had no effect on hospital length of stay or diarrhea, but is associated with a trend in reduction of ICU LOS.	4	1) The addition of probiotics to enteral nutrition has no effect on hospital or ICU mortality. 2) The addition of probiotics to enteral nutrition is associated with a reduction in overall infectious complications, though this was only seen in a subgroup of lower quality studies. Probiotic supplementation is associated with a reduction in the incidence of VAP. 3) The addition of probiotics to enteral nutrition had no effect on hospital length of stay or diarrhea, but may be associated with a reduction in ICU LOS.
6.3	Continuous vs Other	1) There are no differences in mortality, frequency of interrupted feeds, % goal feeds achieved or diarrhea between patients receiving enteral feeds via continuous vs. other methods of administration.	2	1) Providing EN continuously over 24 hours vs by another method has no effect on mortality in ICU patients. 2) Providing EN continuously over 24 hours vs by another method is associated with increased occurrence of aspiration pneumonia in the critically ill. There is insufficient evidence to comment on the occurrence of other infections. 3) Providing EN continuously over 24 hours vs by another method has no effect on ICU LOS. 4) Providing EN continuously over 24 hours vs by another method may be associated with a reduction in diarrhea occurrence but it has no effect on nutritional adequacy or elevated gastric residual volumes.

6.4	Gastroctomy vs NG	1) Early enteral feeding after intubation via percutaneous gastrostomy has no effect on mortality in critically ill patients. 2) Early enteral feeding after intubation via percutaneous gastrostomy is associated with a significant decrease in ventilator-associated pneumonia in critically ill patients.	No new articles	
6.5	Other EN formulas	1) Supplementation with ß hydroxyl methyl butyrate (HMB) has no effect on mortality or duration of mechanical ventilation. 2) Supplementation with ß hydroxyl methyl butyrate (HMB) might be associated with a trend towards an increase in ICU length of stay but has no effect on ICU length of stay. 3) Supplementation with ß hydroxyl methyl butyrate (HMB might be associated with a significant increase in hospital length of stay and might be associated with a trend towards an increase in hospital length of stay. 4) Supplementation with ß hydroxyl methyl butyrate (HMB) may result in better nitrogen balance in trauma patients.	No new articles	
7.1	EN + PN	1) PN in combination with EN, when compared to EN, has no effect on mortality in critically ill patients 2) PN in combination with EN has no effect on infectious complications in critically ill patients 3) PN in combination with EN is associated with a significant reduction in hospital length of stay and a trend towards a reduction in ICU LOS in critically ill patients. 4) PN in combination with EN has no effect on duration of ventilation in critically ill patients. 5) PN in combination with enteral nutrition is associated with a higher cost compared to EN alone.	2	1)PN in combination with EN has no effect on mortality in critically ill patients 2)PN in combination with EN has no effect on infectious complications in critically ill patients 3)PN in combination with EN may be associated with a reduction in hospital length of stay but has no effect on ICU LOS in critically ill patients 4)PN in combination with EN has no effect on duration of ventilation in critically ill patients. 5)PN in combination with EN may be associated with some improvements in long-term physical function of surviving critically ill patients. 6)PN in combination with EN is associated with a higher cost compared to EN alone.

7.2	Early vs delayed sPN	1) Early vs late PN to supplement EN has no effect on mortality in critically ill patients. 2) Early supplemental PN is associated with an increase in infectious complications in critically ill patients compared to late supplemental PN. 3) Early supplemental PN is associated with significantly longer ICU and hospital length of stay in critically ill patients compared to late supplemental PN. 4) Early supplemental PN is associated with an increase in duration of ventilation in critically ill patients compared to late supplemental PN.	0	1) Early supplemental PN has no effect on mortality in critically ill patients. 2) Early supplemental PN may be associated with an increase in infectious complications in critically ill patients. 3) Early supplemental PN may be associated with a longer ICU and hospital length of stay in critically ill patients. 4) Early supplemental PN may be associated with an increase in duration of ventilation in critically ill patients. 5) Early supplemental PN may be associated with higher total health care costs per patient. 6) Early supplemental PN has no effect on functional status outcomes in critically ill patients.
8	PN vs SOC	1) Parenteral nutrition has no effect on mortality in critically ill patients. 2) Parenteral nutrition has no effect on infectious complications in critically ill patients. 3) Parenteral nutrition has no effect on hospital stay. 4) Parenteral nutrition was associated with less muscle wasting and less fat loss.	0	1) Parenteral nutrition has no effect on mortality in critically ill patients. 2) Parenteral nutrition has no effect on infectious complications in critically ill patients. 3) Parenteral nutrition has no effect on hospital stay. 4) Parenteral nutrition may be associated with decreased time on the ventilator. 5) Parenteral nutrition is associated with improved quality of life following critical illness but has no effect on physical function.
9.1	BCAA	1) Supplementation with higher amounts of BCAA is associated with a trend towards a reduction in mortality, when compared to standard amounts of BCAA. 2) No differences found in infections, LOS or ventilated days between groups receiving higher and standard amounts of BCAA.	No new articles	

9.2	Type of Lipids	1) LCT reducing strategies, also known as Soybean oil sparing strategies, have no effect on mortality or infections in critically ill adults but are associated with a trend towards reduction in hospital LOS, ICU LOS and duration of ventilation. 2) LCT + MCT emulsions, compared to LCT, have no effect on mortality or ICU length of stay in critically ill patients. 3) IV fish oils/fish oil containing emulsions, vs LCT + MCT or LCT (or vs no IV soybean oil), have no effect on mortality or ICU/hospital LOS but are associated with a significant reduction in infections and a trend towards a reduction in duration of ventilation 4) Olive Oil containing emulsions, compared to LCT, have no effect on mortality or ICU LOS, may be associated with a trend towards increased infections but a significant reduction in duration of ventilation.	4	1) LCT reducing strategies, also known as soybean oil sparing strategies, have no effect on mortality or infections in critically ill adults. 2) LCT reducing strategies may be associated with a reduction in hospital LOS and duration of ventilation. 3) LCT reducing strategies are associated with a reduction in ICU LOS. 4) LCT + MCT emulsions, compared to LCT, have no effect on mortality or ICU length of stay in critically ill patients. 5) IV fish oils/fish oil containing emulsions vs LCT + MCT or LCT (or vs no IV soybean oil) have no effect on mortality or hospital LOS. 6) IV fish oils/fish oil containing emulsions vs LCT + MCT or LCT (or vs no IV soybean oil) are associated with a reduction in ICU LOS and infections. 7) IV fish oils/fish oil containing emulsions vs LCT + MCT or LCT (or vs no IV soybean oil) may be associated with a reduction in duration of ventilation. 8) Olive Oil containing emulsions, compared to LCT, have no effect on mortality or ICU/hospital LOS. 9) Olive Oil containing emulsions, compared to LCT, may be associated with increased infections. 10) Olive Oil containing emulsions, compared to LCT, are associated with a reduction in duration of ventilation.
9.3	Zinc	1) Zinc supplementation given IV/PN (either alone or in combination with other antioxidants) may be associated with a trend towards a reduction in mortality in critically ill patients.	No new articles	

9.4a	PN Glutamine	1) IV glutamine supplementation is associated with a trend towards a reduction in overall mortality and a significant reduction in hospital mortality. 2) IV glutamine supplementation is associated with a trend towards a reduction in infectious complications but no effect on ventilator associated pneumonia. 3) IV glutamine supplementation is associated with a trend in reduction in ICU LOS and a significant reduction in hospital LOS. 4) There is no difference between IV glutamine supplementation given as free glutamine vs dipeptides or isonitrogenous vs non isonitrogenous feeding.	1	1) IV glutamine supplementation may be associated with a reduction in overall mortality and is associated with a significant reduction in hospital mortality but the observed treatment effect is observed exclusively in small, single center studies. 2) IV glutamine supplementation may be associated with a reduction in infectious complications but has no effect on ventilator associated pneumonia. 3) IV glutamine supplementation may be associated with a reduction in ICU LOS and is associated with a reduction in hospital LOS. 4) There is no difference between IV glutamine supplementation given as free glutamine vs dipeptides or isonitrogenous vs non isonitrogenous feeding. 5) IV glutamine supplementation has no effect on quality of life in the critically ill.
9.4b	EN+PN Glutamine	1) Combined parenteral and enteral glutamine supplementation is associated with a significant increase in hospital, 28-day, 3-month, and 6-month mortality, as well as a trend towards a increase in 14-day mortality. 2) Combined parenteral and enteral glutamine supplementation has no effect on overall infectious complications, ventilator associated pneumonia or duration of mechanical ventilation. 3) Combined parenteral and enteral glutamine supplementation is associated with a trend towards an increase in ICU length of stay but has no effect on hospital length of stay.	No new articles	

9.4c	EN vs PN glutamine	1) Enteral glutamine supplementation versus parenteral dipeptides is associated with a trend towards a reduction in ICU mortality, though no effect was seen on 6-month mortality 2) Enteral glutamine supplementation versus parenteral dipeptides is associated with a trend towards a reduction in ICU and hospital LOS. 3) Enteral glutamine supplementation versus parenteral dipeptides has no effect on infectious outcomes or duration of ventilation.	1	1) Enteral glutamine supplementation versus parenteral dipeptides has no effect on ICU mortality, or 6-month mortality. 2) Enteral glutamine supplementation versus parenteral dipeptides has no consistent effect on ICU and hospital LOS. 3) Enteral glutamine supplementation versus parenteral dipeptides has no consistent effect on infectious outcomes or duration of ventilation.
9.5	PN Protein and Amino Acids	New topic in 2018	2	1) A higher vs lower IV amino acid dose has no effect on ICU and hospital mortality, ICU and hospital LOS and mechanical ventilation duration in critically ill patients. 2) A higher vs lower IV amino acid dose may be associated with improved muscle mass, strength and functional performance.
10.1	PN dose	1) Low dose parenteral nutrition without lipids maybe associated with a reduction in infections in critically ill patients. 2) Insufficient data to comment on the effects of low dose parenteral nutrition in obese patients.	No new articles	
10.2	Lipid Use	1) Withholding lipids high in soybean oil does not reduce mortality but is associated with a significant reduction in infections in critically ill patients and may reduce LOS and duration of ventilation in trauma patients.	No new articles	
10.3	Mode of lipid delivery	1) No difference in infections between the groups receiving lipids via TNA or via piggyback.	No new articles	

10.4a	Optimal glucose control: insulin	1) Intensive insulin therapy is associated with a trend towards a reduction in overall mortality. 2) Intensive insulin therapy has no effect on infections. 3) Intensive insulin therapy may be associated with a significant reduction in ICU length of stay and duration of ventilation. 4) Intensive insulin therapy has no effect on hospital length of stay. 5) Intensive insulin therapy is associated with a significant increase in hypoglycemia.	No new articles	
10.4b	Optimal glucose control: insulin vs CHO restriction	1) Carbohydrate restricted formula plus insulin therapy aimed at blood sugar range (<180 mmol/L) vs intensive insulin therapy to maintain blood sugars < 150 mmol/L, has no effect on mortality, incidence of pneumonia or ICU length of stay in critically ill patients. 2) Carbohydrate restricted formula plus insulin therapy aimed at blood sugar range (<180 mmol/L) vs, vs intensive insulin therapy to maintain blood sugars < 150 mmol/L, is associated with a significant decrease in hypoglycemia in critically ill patients.	No new articles	
11.1	Vitamins and trace elements	1) Antioxidant nutrients are associated with a trend towards a reduction in overall mortality in critically ill patients. 2) Antioxidant nutrients are associated with a trend towards a reduction in overall infectious complications in critically ill patients. 3) Antioxidant nutrients have no effect on ICU length of stay in critically ill patients. 4) Antioxidant nutrients have no effect on hospital length of stay in critically ill patients. 5) Antioxidant nutrients are associated with a trend towards a reduction in duration of ventilation in critically ill patients.	1	1) Antioxidant nutrients are associated with a reduction in overall mortality in critically ill patients. 2) Antioxidant nutrients may be associated with a reduction in overall infectious complications in critically ill patients. 3) Antioxidant nutrients have no effect on ICU length of stay in critically ill patients. 4) Antioxidant nutrients have no effect on hospital length of stay in critically ill patients. 5) Antioxidant nutrients are associated with a reduction in duration of ventilation in critically ill patients. 6) Antioxidant nutrients are not associated with improvements in QOL in critically ill patients.

11.2	PN Selenium	1) IV/parenteral selenium supplementation (alone or in combination with other antioxidants) has no effect on mortality in critically ill patients 2) IV/parenteral selenium supplementation (alone or in combination with other antioxidants) is associated with a trend towards a reduction in infectious complications in the critically ill. 3) IV/parenteral selenium supplementation (alone or in combination with other antioxidants) has no effect on ICU length of stay, hospital length of stay or ventilator days.	2	1) IV/parenteral selenium supplementation (alone or in combination with other antioxidants) has no effect on mortality in critically ill patients 2) IV/parenteral selenium supplementation (alone or in combination with other antioxidants) may be associated with a reduction in infectious complications in the critically ill but if real, the treatment effect is likely small. 3) IV/parenteral selenium supplementation (alone or in combination with other antioxidants) has no effect on ICU length of stay or hospital length of stay 4) IV/parenteral selenium supplementation (alone or in combination with other antioxidants) may be associated with a reduction in ventilator days. 5) IV/parenteral selenium supplementation (alone or in combination with other antioxidants) has no effect on the QOL of critically ill patients.
11.3	Vitamin C	1) Vit C supplementation has no effect on 28 day mortality in critically ill patients 2) Vit C supplementation has no effect on ICU LOS or ventilator free days in critically ill patients	1	1) IV Vit C supplementation may be associated with lower 28 day mortality in critically ill patients. 2) IV Vit C supplementation has no effect on ICU LOS or ventilator free days in critically ill patients.
12.0	Vitamin D	1) Vitamin D3 supplementation in critically ill vitamin D deficient adult patients may reduce hospital mortality. 2) Vitamin D3 supplementation in critically ill severely vitamin D deficient patients is associated with reduced hospital mortality, 28-day mortality and 6 month mortality and may reduce ICU mortality. 3) Vitamin D3 supplementation in critically ill vitamin D deficient adult patients has no effect on ICU length of stay, hospital LOS or duration of ventilation.	1	1) Vitamin D3 supplementation in critically ill adult patients may be associated with a reduction in hospital mortality, 28-day mortality and 6-month mortality, particularly in patients with a severe reduction in Vit D levels (<12 ng/ml or <30 nmol/L). 2) Vitamin D3 supplementation in critically ill adult patients may be associated with a reduction in duration of mechanical ventilation. 3) Vitamin D3 supplementation in critically ill adult patients has no effect on infections and ICU and hospital length of stay.

13.0	Thiamine	New topic in 2018	1	1) Thiamine supplementation has no effect on mortality, LOS or ventilator days in the general septic critically ill patient. 2) Thiamine supplementation is associated with reduced mortality in critically ill septic patients with thiamine deficiency.