

## Critical Care Unit Nutrition Guidelines Worcestershire Acute Hospitals NHS Trust

Key Document code:	WAHT-KD-022
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Approved by:	<i>Intensive Care Forum</i>
Date of Approval:	<i>21<sup>st</sup> February 2018</i>
Date of review:	<i>21<sup>st</sup> February 2020</i>

### Key Amendments

Date	Amendment	Approved by

### INTRODUCTION

Malnutrition is a state in which a deficiency of energy, protein and/or other nutrients causes measurable adverse effects on tissue/body form, composition, function or clinical outcome. It is both a cause and a consequence of ill-health and is common in the UK. Since malnutrition increases a patient's vulnerability to ill-health, providing adequate nutrition support to patients with malnutrition should improve outcomes. Guidelines are therefore needed to emphasise the following:

Malnutrition is common

Many people who are unwell are likely to eat and drink less than they need. This impairment of food and fluid intake may be short-lived as part of an acute illness, or prolonged if there are chronic medical or social problems. If impaired food intake persists for even a few days, a patient can become malnourished to a degree that may impair recovery or precipitate other medical problems. This is especially true if the patient was malnourished before they became unwell.

Causes of malnutrition in hospital patients

- Reduced intake where patients physically cannot or will not eat enough e.g. dysphagia, oesophageal disease, unconsciousness, repeated fasting, nausea and vomiting.
- Increased requirements e.g. fever, major trauma, burns and major surgery
- Gastrointestinal disease e.g. increased losses and/or malabsorption e.g. in inflammatory bowel disease.

Malnutrition increases vulnerability to ill-health

The consequences of malnutrition include vulnerability to infections, delayed wound healing, impaired function of heart and lungs, muscle weakness and depression.

As a consequence people who are malnourished go to hospital more often for longer periods, and have higher complication and mortality rates for similar conditions. If poor dietary intake persists for weeks, the resulting malnutrition may be life-threatening in itself.

The objective of these guidelines is therefore to improve the practice of nutrition support by providing guidance to assist health care professionals to correctly identify and manage patients who require oral, enteral or parenteral nutritional.

This policy covers all critically ill inpatients on critical care units throughout the Worcestershire Acute Hospitals NHS Trust

### **Definitions**

Enteral nutrition (EN) – the provision of nutrition via the patient's gut. For the vast majority of critically ill patients, oral feeding will not be possible or entirely adequate, so these guidelines deal exclusively with the provision of food directly into the stomach or small bowel

Parenteral nutrition (PN) – the provision of nutrition directly into the patient's blood stream

### **Duties and Responsibilities**

#### **Lead Clinician**

##### **Consultant on duty covering the intensive care unit**

Be aware of the policy

Review the nutritional needs and routes available for feeding on a daily basis

Monitor electrolytes and treat complications associated with feeding

When placing and checking nasogastric tubes to do so in accordance with the NPSA and Trust guidance

#### **Junior Medical staff**

Be aware of the policy

Institute feeding wherever possible on the day of admission to the intensive care unit

When placing and checking nasogastric tubes to do so in accordance with the NPSA and Trust guidance

Monitor electrolytes and treat complications associated with feeding

#### **Senior nursing staff on the intensive care unit**

Be aware of the policy

Provide guidance to junior nursing staff on correct technique for providing food

Encourage holistic approach to patient care with adequate nutrition being a core component of this

#### **Nursing staff on the intensive care unit**

Be aware of the policy

Participate in the holistic care of the patient paying due attention to adequate nutrition

Implement feeding strategies as recommended by medical/dietician/pharmacy nutrition team

When placing and checking nasogastric tubes to do so in accordance with the NPSA and Trust guidance

Monitor delivery of food to the patients

#### **Dieticians**

Initial assessment of nutritional requirements – the dietitian will assess patients' nutritional status and requirements individually and advise any alterations that are felt to be required to the enteral or PN formula prescription.

The overseeing of the transition from PN to enteral nutrition.  
Assessment of each individual patient's nutritional status and requirements for enteral nutrition, once the gut can be used.  
Monitor patients receiving PN and determining any changes to the regimen as necessary  
Educate colleagues and ward staff in the dietetic aspects of PN

### **Pharmacists**

Take referrals for PN and seek advice and support from other members of the nutrition team as required.  
Advise on appropriate nutritional support (EN or PN) liaising with the dietitian as necessary.  
Recommend suitable parenteral nutrition formulations e.g. electrolyte additions.  
Co-ordinate the supply of PN from Pharmacy.  
Advise on the administration of PN e.g. flow rate.  
Advise on problems arising from parenteral feeding.  
Monitor patients receiving PN support with particular reference to biochemistry, signs of infection, fluid balance, and blood sugar levels and determining changes to PN regimen as necessary.  
Educate colleagues and ward staff in the pharmaceutical aspects of PN.  
Provide advice and information to patients and their relatives regarding intravenous feeding.

### **Policy detail**

#### **General statement**

Nutrition is a fundamental necessity for life and health, but may easily be overlooked or underprovided. These guidelines exist to facilitate the provision of nutrition to patients who often have enhanced nutritional requirement

#### **Indications for feeding**

All patients who are not expected to be on a full, nutritionally complete oral diet within 3 days of their last meal should receive supplemental Enteral Nutrition if it is possible that they have a functional gastrointestinal tract. In practice, this means that virtually all critically ill patients admitted to the intensive care unit should have an NG tube placed as a matter of routine, and feeding commenced within 24h of admission.

Specific nutritional supplements e.g. Glutamine may be added at the discretion of individual clinicians based on the clinical picture and perceived need, but should not be added routinely

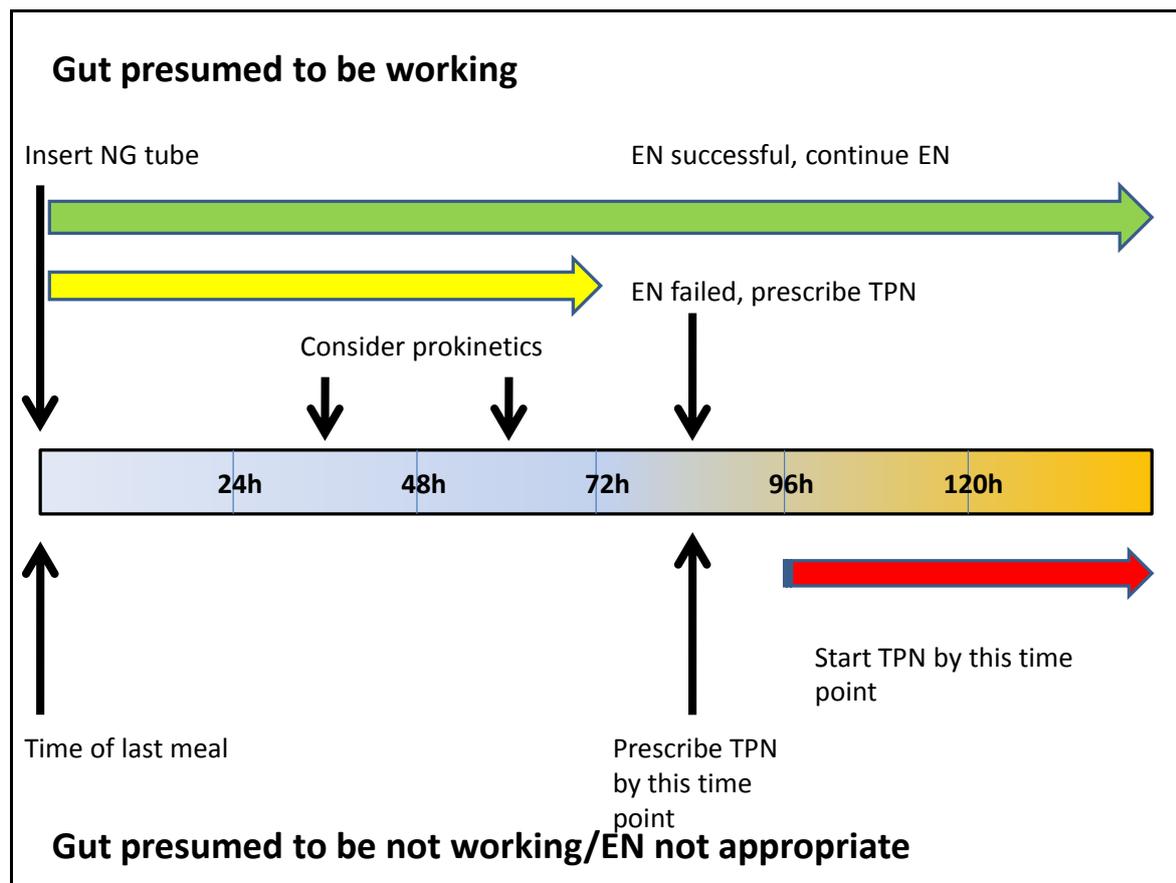
If a patient does not have an intact and/or functional gastrointestinal tract, Parenteral nutrition should be instituted within 3-5 days of their last meal

The presence or absence of bowel sounds/flatus and or stool does not preclude the initiation of enteral feeding

Enteral feeding may safely be introduced after both emergency and elective large bowel surgery early (and may reduce mortality, wound infections, pneumonia, anastomotic leakage and length of hospital stay) but the views of the operating surgeon should be sought

Where a patient has not received adequate nutrition after 72h of attempting EN (this is defined as at least 60% of full feed rate), PN should be considered, and after a maximum of 5 days of failed attempts to establish EN, PN should be given to supplement nutritional needs

Patients in whom it is felt that they are 'unlikely' to establish EN within 3-5 days should have a decision made regarding PN by consultation with ICU medical staff, dieticians and other interested parties e.g. surgical staff



**Figure 1 Time scale for starting EN or TPN**

### Starting Enteral Nutrition via an NG tube

Enteral nutrition should be started using Nutrison Multifibre at 30ml/h and increased every 4h to maximum tolerated or required rate

Tolerance to NG feeding should be assessed by routine measurement of gastric aspirates at 4hourly intervals

Gastric aspirates less than 250ml should be returned to the stomach and feeding continued

Gastric aspirates larger than 250ml should be discarded and feeding rate reduced

Patients should be fed for 24 hours out of every 24 if using NG feeding alone. If NG feeding is being used to supplement some oral intake, it may be appropriate to feed for fewer hours or overnight only

During the acute and initial phases of critical illness, approximately 20-25 kcal/kg body weight/day should be aimed for. Exceeding this target may be harmful

During the anabolic recovery phase patients may tolerate an increased energy supply of up to 30 kcal/kg body weight/day

There is no significant difference in the efficacy of jejunal versus gastric feeding, and insertion of NJ tubes should be considered on a case by case basis

Nasogastric tubes should be inserted and checked in accordance with NPSA and Trust guidance (see separate protocol WAHT-NUR-065)

### Starting Parenteral Nutrition

The trust TPN policy (WAHT-NUT-007) should be used for administering TPN to critically ill patients but a few points are reiterated here

Parenteral nutrition should be prescribed and ordered on the day it is required in consultation with the TPN pharmacist. If the prescription is made in the morning it is usually possible to start feeding the same day

Pre-mixed 'standard' bags should only be used where they have been assessed as meeting the nutritional requirements of the patient.

All PN should contain multivitamins and trace elements and meet the assessed nutritional requirements of the patient

TPN should be administered via either a single lumen tunnelled central venous line inserted for the purpose of administering TPN (preferable) or via a dedicated, unused port on a multilumen central line inserted within the previous 24 hours

Lines inserted for TPN should be placed in an aseptic manner, in accordance with the 'Matching Michigan' protocol for reducing catheter related blood stream infections

No other drug/fluid administration, or blood sampling, should occur through the dedicated TPN line/port

## APPENDIX 1

### CHOICE OF ENTERAL FEED

ALL PATIENTS IN CRITICAL CARE TO BE COMMENCED ON NUTRISON MULTI FIBRE UNLESS FALL INTO ONE OF THE CATEGORIES BELOW.

PLEASE DO NOT EXCEED HOURLY FEEDING RATE OF > 100ML/HR.

<u>CHOICE OF FEED</u>	<u>PATIENT CRITERIA</u>
NUTRISON MULTI FIBRE (1 kcal/ml)	FIRST LINE FEED FOR CRITICAL CARE PATIENTS UNLESS CONTRAINDICATED
NUTRISON STANDARD (1 kcal/ml)	WHEN MULTI FIBRE NOT TOLERATED FOR JEJUNAL FEEDING
PEPTISORB (1 kcal/ml)	PANCREATITIS, JEJUNAL FEEDING FAT MALABSORPTION
NUTRISON LOW SODIUM (1 kcal/ml) Or NUTRISON CONCENTRATED (2 kcal/ml)	Hypernatraemic patients, with sodium excess  Patients who are fluid restricted and who also may be hypernatraemic

ALL THE ABOVE FEEDS AND OTHER SPECIALISED FEEDS MAY BE USED AT THE DIETITIANS REQUEST

## REFERENCES

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