Worcestershire Acute Hospitals NHS Trust

Out of Hours Emergency Enteral Feeding Regimen (Including Risk Reduction for Re-feeding Syndrome)

This guidance does not override the individual responsibility of health professionals to make appropriate decisions according to the circumstances of the individual patient in consultation with the patient and / or carer. Health care professionals must be prepared to justify any deviation from this guidance.

Introduction

This out of hours emergency enteral feeding regimen is designed for use on the wards over weekends / bank holidays and out of hours when a Dietitian is not available. This regimen includes risk reduction for re-feeding syndrome. For further information regarding re-feeding syndrome please see the Identification and Management of Re-feeding Syndrome Guideline, WAHT-NUT-006

Please note that this policy is not intended for critical care patients, please see critical care feed guidelines for specific advice regarding critical care patients.

For advice on out of hours parenteral nutrition regimens please contact Pharmacy (Parenteral Nutrition Guidelines – WAHT-NUT-007).

This Guideline Is For Use By The Following Staff Groups:

Qualified Doctors, Qualified Nurses, Pharmacists and Dietitians.

Lead Clinician(s)

Dr. Thea Haldane	Consultant Gastroenterologist
Approved by the Nutrition and Hydration Committee on:	16th October 2015
Approved by Medicines Safety Committee on:	14th October 2015
Review Date:	6th November 2020
This is the most current document and is to be used until a revised version is available	

Key amendments to this document:

Date	Amendment	By:
Jun 2010	Appendix 1 - Enteral feeding regimen – Text changed to 'Version 2 April 09' to highlight the regimen had been reviewed.	Jo Brown
May 2011	Appendix 1 Enteral feeding regimen reformatted	Jo Brown
	Appendix 2 updated in line with NUT-006	Jo Brown
June 2011	Re-approved by Nutrition steering committee.	Jo Brown
March 2013	Extended while under review	Jo Brown
May 2013	Guideline extended whilst under review	Jo Brown
June 2013	Guideline extended whilst under review	Jo Brown
August 2013	Guideline extended whilst under review	Jo Brown
29/10/2013	Guideline extended for 6 months whilst under major review	Nalinee Owen
25/03/2014	Guideline extended for 3 months	Nalinee Owen
24/11/2014	Guideline extended for 3 months	Nalinee Owen
28/01/2015	Guideline extended until 30th April 2015	Jo Brown
24/04/2015	Guideline extended until 30th June 2015	Jo Brown
24/06/2015	Guideline extended until 30th September 2015	David Aldulaimi
Sept. 2015	Amendments to the emergency enteral feed regimen and re-feeding syndrome protocol in line with NICE & BAPEN.	Dr Haldane and the nutrition team
October 2017	Document extended for further two years, no new changes	Dr Haldane

December 2017	Sentence added in at the request of the Coroner	
17th September 2019	Document extended for 6 months to ensure current guidelines are adapted to new national guidelines	Dr Haldane
6TH May 2020	Document extended for 6 months during COVID period	

Out of Hours Emergency Enteral Feeding – Regimen (Including Risk Reduction for Re-feeding Syndrome).

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Competencies Required

Instigation and action of the out of hours emergency enteral feeding regimen and re-feeding syndrome protocol should be done by qualified Doctors and qualified Nursing Staff.

All Acute Dietitians and Pharmacists should have a clear understanding of the implementation of the out of hours emergency enteral feeding regimen and re-feeding syndrome protocol.

Patients Covered

All patients requiring enteral tube feeding, during weekends, bank holidays and when a Dietitian is not available.

The out of hours emergency enteral feeding regimen can be found on page 4. On the reverse of all emergency enteral feeding regimens there is the protocol for the assessment of re-feeding syndrome see page 5 (see re-feeding syndrome guidelines WAHT-NUT-006).

Worcestershire Acute Hospitals NHS Trust

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DEPARTMENT OF NUTRITION AND DIETETICS

OUT OF HOURS EMERGENCY ENTERAL FEED REGIMEN

Name: ……

Hospital No: ……

NHS No: ……

D.O.B: ……

Male † Female †

Consultant: …… Ward: ……

IMPORTANT – PLEASE NOTE:-

Please follow the flow chart overleaf to determine if the patient is at risk of re-feeding syndrome, then follow the appropriate feed regimen option below.

Patient IS at risk of Re-feeding Syndrome

↓

Day 1:-
Feed Type: Nutrison Multi Fibre
Volume of Feed: 300ml per day
Pump rate: 15ml per hour for 20 hours/day
Additional fluids as per Doctors advice

Doctors Signature: Date:

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-Please ensure all steps over page are followed
-Continue Day 1 feed regimen until re-feeding bloods (potassium, phosphate and magnesium) are within normal range. When patients re-feeding bloods are within the normal range progress to day 2 feed regimen below.
-Refer to dietitian.

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Day 2:-
Feed Type: Nutrison Multi Fibre
Volume of Feed: 500ml per day
Pump rate: 25ml per hour for 20 hours/day
Additional fluids as per Doctors advice

Doctors Signature: Date:

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-Continue day 2 regimen until Dietetic review

Patient is NOT at risk of Re-feeding Syndrome

↓

Daily Regimen:-
Feed Type: Nutrison Multi Fibre
Volume of Feed: 1000ml per day
Pump rate: 50ml per hour for 20 hours/day
Additional fluids as per Doctors advice

Doctors Signature: Date:

↓

-Refer to Dietitian
-Continue above regimen until dietetic review

- **NG tube position must be checked, before commencing each bag of feed and before administering medicines or if not in use a minimum of once in 24 hours by checking aspirate with PH indicator strip (see NG Guidelines).**
- Change giving set once in 24 hrs.
- Flush tube with 50ml sterile water **before and after** each pack of feed and **before and after** administering any medications.(please refer to PEG guidelines WAHT-NUT-004 for flushes of sterile water in between medications)
- Do not use scissors to break the seal on the feed pack. It will be pierced when the giving set is attached.
- Ensure patient is positioned at a 45 degree angle when feeding to reduce risks of aspiration. If any intervention requires the patient to be at an angle less than 45 degrees the feed will need to be stopped 1 hour before this intervention.
- Leave a message to inform Dietitian patient needs to be seen. WRH Ext 33694 / AH Ext 44120 / KH Ext 53366

Re-feeding Syndrome: Identification of those at risk

Establish BMI, degree of unintentional weight loss in the last 3-6 months, period of little or no nutritional intake, potassium, magnesium and phosphate levels and any history of excess alcohol or drugs such as insulin, chemotherapy, antacids and diuretics.

Has the patient had any one of the following:

- BMI<16kg/m²
- Weight loss of >15% over the last 3-6 months
- Poor nutritional intake for 10 days
- Low electrolytes.

Has the patient had any two of the following:

- BMI<18.5kg/m²
- Weight loss >10% over the last 3-6 months
- Poor nutritional intake for 5 days
- Drug history as above

Patient is at risk of re-feeding syndrome – follow the flow chart below and refer immediately to the Dietitian

- Prior to commencing nutrition prescribe thiamine and B vitamins to be given at least 30 minutes before and during the first 10 days of feeding: high dose thiamine (200-300mg/day) and Vit B Co strong 1-2 tablets which can also be given via NGT/PEG or consider IV Pabrinex - one pair of intravenous high potency ampoules in 100ml sodium chloride 0.9% over 15-30 minutes (this contains 250mg of Thiamine).
- Give 1 Forceval soluble tablet, dissolved in 125 - 200ml sterile water (Oral/NG/PEG) once daily until the Dietitian reviews (avoid giving during the feed break).

*NB: if patient is not deemed at risk of re-feeding syndrome please follow the appropriate feeding regimen over page

Starting to Feed Safely - In Patients at risk of Re-feeding Syndrome

Step 1:
Commence enteral nutrition as per appropriate feeding regimen over page (if there are any concerns with swallow please refer to speech and language therapy).

Step 2:
Measure electrolytes: even if normal, replace potassium, phosphate and magnesium (see appendix 1 / discuss with pharmacy for guidance on electrolyte replacement). Only withhold supplementation if levels are high.

Step 3:

- Monitor potassium, magnesium, phosphate, calcium and sodium daily until bloods are normal and stable and the patient is receiving their target nutritional support, then continue to check bloods on a weekly basis.
- Continue to replace potassium, phosphate and magnesium (unless high) until the patient is receiving their target nutritional support.

Step 4:

- Monitor blood glucose levels (BMs) four times daily, as per BM chart.
- Monitor daily fluid balance.
- Doctors to assess the need for additional / replacement fluids on an individual basis. Unless contraindicated aim for 20-30ml/kg/day taking into account current fluid intake.

NB. The more rapidly calories are delivered and the rate of feed increased, the greater the demand on circulating electrolytes; thus there will be an increased risk of re-feeding.

Appendix 1

Electrolyte Supplementation in Re-feeding Syndrome

ELECTROLYTE	SUPPLEMENTATION METHOD	ADDITIONAL COMMENTS
PHOSPHATE	Refer to Trust guideline WAHT-PHA-011 http://nww.worcsacute.nhs.uk/EasysiteWeb/getresource.axd?AssetID=11948&type=full&servicetype=Attachment	Check calcium, potassium and phosphate levels after phosphate infusion. Use lower doses in renal impairment (consult pharmacy)
POTASSIUM	Level below 2.5mmol/l, if symptomatic or unable to take orally 20mmol in 500mls or 40mmol in 1000mls of 0.9% sodium chloride at a maximum recommended rate of 10mmol per hour. Repeat as necessary after measuring potassium levels. NB Higher concentrations are used in the ITU/HDU setting for patients with central venous access. Level above 2.5 mmol/l and able to take orally Sando-K tablets 4 to 8 tablets per day in divided doses.	
MAGNESIUM	Refer to Trust guideline WAHT-PHA-012 http://nww.worcsacute.nhs.uk/EasysiteWeb/getresource.axd?AssetID=11950&type=full&servicetype=Attachment .	

Monitoring Tool

This should include realistic goals, timeframes and measurable outcomes.

How will monitoring be carried out?

Who will monitor compliance with the guideline?

Page/ Section of Key Document	Key control:	Checks to be carried out to confirm compliance with the policy:	How often the check will be carried out:	Responsible for carrying out the check:	Results of check reported to: *(Responsible for also ensuring actions are developed to address any areas of non-compliance)*	Frequency of reporting:
	WHAT?	**HOW?**	**WHEN?**	**WHO?**	**WHERE?**	**WHEN?**
	Were patients commenced on the appropriate out of hours feed regimen according to their re-feeding risk? Was the feed regimen followed signed by a Doctor? Was thiamine / vitamin B / Pabrinex / Forceval prescribed appropriately? Were re-feeding bloods measured and supplemented if levels were normal? Were re-feeding bloods monitored at appropriate intervals?	Foundation year 1 and 2 training session discussing nutrition, re-feeding and parenteral guidelines. Retrospective audits	Annually Twice per year	Senior dietitian and senior pharmacist Dr Haldane and the nutrition team	Results of the audit will be reported back to members of the nutrition and hydration committee. Audit results will also be reported back to appropriate directorates as necessary via Dr Haldane.	Twice a year

References

Solomon SM. & Kirby DF. (1990) *The Re-feeding Syndrome: A review*. J. Parenteral & Enteral Nutrition 1990; 14: 90 – 7

Brooks MJ. & Melnik G. (1995) *The Re-feeding Syndrome: An approach to understanding its complications and preventing its occurrence.* Pharmacotherapy 1995; 15 (6): 713 –26

Hodgson SF. & Hurley DL. (1993) *Acquired Hypophosphataemia.* Endocrin & Metab. Clin N Am. 1993; 22 (2): 397 – 409

Rosenberger K. (1998) *Management of Electrolyte Abnormalities: Hypocalcaemia, Hypomagnesaemia and Hypokalaemia.* J.Am Acad. Nurs. Practitioners. 1998; 10 (5): 209 – 17

Ryan MF. (1991) *The role of Magnesium in Clinical Biochemistry an overview.* Ann. Clin. Biochem. 1991; 28: 19 – 26

Crook M. (1992) *Hypophosphataemia in a Hospital Population and the incidence of concomitant Hypokalaemia.* Ann. Clin. Biochem. 1992; 29: 64 – 6

Crook M. (1994) *Hypophosphataemia and Hypokalaemia in Patients with Hypomagnesaemia.* Br. J. Biomed. Sci. 1994; 51: 24 – 7

Dwyer K. et al. (1992) *Severe Hypophosphataemia in Postoperative Patients.* Nutr. In. Clin. Practice 1992; 7: 279 – 83

Maier-Dobersberger T. & Lochs H. (1994) *Enteral Supplementation of Phosphate Does not Prevent Hypophosphataemia During Re-feeding of Cachectic Patients.* J. Parenteral & Enteral Nutr. 1994; 18 (2): 182 – 4

Mariik PE, Bedigan MK. (1996) *Re-feeding Hypophosphataemia in Critically Ill Patients in an Intensive Care Unit. A Prospective Study.* Arch Surg 1996; 131 (10): 1043 – 7

British National Formulary (2001). Brit. Med. Assoc. & Royal Pharmaceutical Soc.

Editorial: Treatment of severe Hypophosphataemia. Lancet 1981; 2 (8249): 734

Paterson CR. (1996) *Hypophosphataemia: A Dangerous Disorder.* Nutr. 1996; 12: 540 – 1

Vanatta JB. et al. Efficacy of Intravenous Phosphorous Therapy in the Severely Hypophosphataemic Patient. Arch. Int. Med. 1981; 141: 885 – 7

National Institute for Health and Clinical Excellence (2006); Nutrition support in adults Clinical Guideline 2006

BAPEN (2012) Re-feeding Syndrome: Identification of those at risk – decision tree, http://www.bapen.org.uk/pdfs/decision-trees/refeeding-syndrome.pdf (last accesses 20/02/15)

Liverpool (2011) Trust Clinical Policy, Management of re-feeding syndrome

Contribution List

Key individuals involved in developing the document:

Name	Designation
Dr. Thea Haldane	Consultant Gastroenterologist
Jo Brown	Senior Dietitian, WRH
Sarah Trenbirth	Senior Dietitian, WRH
Sue Dickinson	Chief Dietitian, AH
Dorota Amador-Bueno	Senior Dietitian, KH
Keith Hinton	Pharmacist, WRH
Jo Cheetham	Nurse Practitioner, WRH

Circulated to the following individuals for comments:

Name	Designation
Nalinee Owen	Dietetic Manager
All Acute Dietitians	AH, WRH, KH
Dr Aldulaimi	Consultant Gastroenterologist, ALEX
Dr Ahmad	Consultant Gastroenterologist, ALEX
Dr Prabhakaran	Gastro- Medics, ALEX
Dr Gee	Consultant Gastroenterologist, WRH
Dr Hudson	Consultant Gastroenterologist, WRH
Dr Elagib	Consultant Gastroenterologist, WRH
Dr Jenkins	Consultant Endocrinologist, WRH
Mr Lake	Consultant Surgeon, WRH
Dr Sellors	Consultant Anaesthetics, WRH
Dr Mitchell	Consultant Anaesthetics, ALEX

Circulated to the chair of the following committee's / groups for comments:

Name	Committee / group
Sonya Murray	Chair of Nutrition and Hydration Committee
Alison Smith	Chair of Medicines Safety Committee
Steve Graystone	Director of Critical Care, Patient Safety

Supporting Document 1 - Equality Impact Assessment Tool

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

		Yes/No	Comments
1.	**Does the policy/guidance affect one group less or more favourably than another on the basis of:**		
	Race	No	
	Ethnic origins (including gypsies and travellers)	No	
	Nationality	No	
	Gender	No	
	Culture	No	
	Religion or belief	No	
	Sexual orientation including lesbian, gay and bisexual people	No	
	Age	No	
2.	**Is there any evidence that some groups are affected differently?**	No	
3.	**If you have identified potential discrimination, are any exceptions valid, legal and/or justifiable?**	N/A	
4.	**Is the impact of the policy/guidance likely to be negative?**	No	
5.	**If so can the impact be avoided?**	N/A	
6.	**What alternatives are there to achieving the policy/guidance without the impact?**	N/A	
7.	**Can we reduce the impact by taking different action?**	N/A	

If you have identified a potential discriminatory impact of this key document, please refer it to Human Resources, together with any suggestions as to the action required to avoid/reduce this impact.

For advice in respect of answering the above questions, please contact Human Resources.

Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	Yes/No
1.	Does the implementation of this document require any additional Capital resources	No
2.	Does the implementation of this document require additional revenue	No
3.	Does the implementation of this document require additional manpower	No
4.	Does the implementation of this document release any manpower costs through a change in practice	No
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	No
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval