NATIONAL INSTITUTE FOR HEALTH AND CLINICAL EXCELLENCE

Centre for Clinical Practice

Review of Clinical Guideline (CG 32) – Nutrition Support for Adults Oral Nutrition Support, Enteral Tube Feeding and Parenteral Nutrition

Background information

Guideline issue date: 22nd February 2006

Review date: 2011

National Collaborating Centre: NCGC

Review recommendation

The guideline should not be updated at this time.

Factors influencing the decision

Literature search

1. From initial intelligence gathering and a high-level randomised control trial (RCT) search, clinical areas were identified. Through this stage of the process, 71 studies were identified relevant to the guideline scope. The identified studies were related to the following clinical areas within the guideline:

    - Parenteral nutrition
    - Enteral nutrition
    - Oral nutrition
    - Nutritional support team

2. One area which was not included within the original scope but now has a substantial body of evidence is ‘Immunonutrition’ which involves the addition of substances such as arginine, eicosapentoic acid (EPA) and gammalinoleic acid (GLA) to nutrition. However, the evidence identified appeared to be inconclusive and it would be appropriate to await further evidence at the next 3 year review date.

3. No evidence was identified which directly answered the research recommendations presented in the original guideline.

4. In conclusion, no newly identified conclusive and consistent evidence contradicts current guideline recommendations in the original guideline.

Guideline Development Group and National Collaborating Centre perspective

5. A questionnaire was distributed to GDG members and the chair to consult them on the need for an update of the guideline. Four responses in total were received. Two responses highlighted that since publication of the guideline more literature has become available on:
    - The benefit of total parenteral nutrition (TPN) in relation to specific conditions
    - Early enteral feeding post surgery and oral nutrition supplements
    - Pre operative enteral nutrition is not usually recommended, although it is recommended in the guideline
    - The need for clinicians to start refeeding slowly, then build levels up quite swiftly to prevent starvation
    - Misplaced nasogastric feeding tubes in adults
    - Initiatives within quality, innovation, productivity and prevention (QUIPP) that relate directly to this guideline. There are also new recommendations from the Care Quality Commission (CQC) and British Association for Parenteral and Enteral Nutrition (BAPEN).

6. Four respondents agreed that there is insufficient variation in current practice and RCT evidence at this time to warrant an update of the current guideline.

Implementation and post publication feedback

7. Key themes emerging from post-publication feedback were:
    - Enquiries relating to clarification of whether the line used for TPN needs to be a virgin line or a dedicated line.
    - Guidance on feeding via syringe into the mouth rather than via percutaneous endoscopic gastrostomy (PEG) or intravenously
    - There was some confusion as to whether food should be syringed or pumped in during gastrostomy feeding. More clarity was also sought when a administering a PEG feed to a dehydrated person and whether timings should be altered in this population to prevent adverse reactions.

8. An analysis by the NICE implementation team indicated that no new evidence was identified through the implementation feedback systems that would indicate a need to update the guideline.

Relationship to other NICE guidance

9. NICE guidance related to CG32 can be viewed in Appendix 1.

Summary of Stakeholder Feedback

Review proposal put to consultees:
The guideline should not be updated at this time.
The guideline will be reviewed again according to current processes.

10. In total 17 stakeholders commented on the review proposal recommendation during the two week consultation period.

11. Ten stakeholders agreed with the decision not to update the guideline stating that recent literature strengthened existing recommendations. Two stakeholders had no view on the consultation paper. Five stakeholders disagreed with the review proposal recommendation that the guideline should not be updated at this time.

12. Of the stakeholders that disagreed, the following areas were highlighted:

    - The specific formulations of enteral feeds. However this was outside of the scope of the guideline and no new RCT evidence within this area was identified.
    - The use of oral supplementation and dietary advice and the cost effectiveness of these interventions; stakeholders noted that Oral Nutritional Supplements (ONS) are needed for people that cannot meet their nutritional needs through food alone and suggest that the recommendations for ONS and dietary supplements should be clarified. The RCT evidence identified, in the opinion of the GDG chair, does not appear sufficient to justify a change in direction of the current recommendation.
    - Nutrition support delivered through the provision of food and beverages. However it was noted that this is a key area of the 'High Impact Actions', published by the Department of Health.
    - Further guidance on home enteral feeding with specific regards to monitoring of home enteral feeding was required. It was also suggested that the type of naso-enteral tube used should be reviewed and the cost effectiveness of each tube type should be analysed, however there was no new RCT evidence identified through the high level search that would inform such a review.
    - A nasogastric feeding algorithm should be developed, including the choice of prokinetic and timing of initiation, and

an algorithm for feeding hierarchy. There is currently an ongoing unpublished study within this area.

13. Some stakeholders requested further clarification regarding the section on refeeding syndrome, however it was stated that as there is currently an absence of new evidence (which was supported by the high level RCT searches), it would be appropriate to wait for the next review for update to address this area with which the GDG chair agreed.

14. The following literature was submitted through stakeholder consultation:
    - BAPEN (2010) survey was submitted as evidence by four stakeholders. This survey was also mentioned by the consulted GDG members; however it would not change the current guideline recommendations as it is a report on the status of services in hospital and care home settings rather than a review of any new evidence.
    - Literature regarding early parenteral nutrition versus early enteral nutrition was submitted; however the two studies reported are ongoing and not yet published.
    - One stakeholder submitted three publications (Gianotti et al, 2002; Waitzberg et al, 2006; Marik & Zloga, 2010) relating to immunonutrition for surgical patients. Immunonutrition was not within the original guideline scope. However, the chair and the stakeholder noted that it is an emerging area and that there is still inconclusive RCT evidence at this stage.
    - One stakeholder highlighted a study by Guest et al (2011). This recent publication analysed the costs of malnourished patients within an NHS setting. However, it was the chair's opinion that it would not warrant an update of the guideline on its own merit.
    - One stakeholder provided information on publications relating to nutrition in chronic liver disease. Nutrition in people requiring

specific long-term therapeutic regimens for the treatment of diseases was excluded from the original scope.

- One stakeholder reiterated the importance of the NPSA safety warning for placement of nasogastric tubes. This was an area that was also identified by the GDG chair prior to consultation and but was not felt to be a considerable reason for update as the RCT evidence was still insufficient to adjust the existing recommendation.

15. Two ongoing studies described in the consultation document were highlighted through stakeholder consultation; it was suggested that the results of these studies, once published, may affect some recommendations with regards to the earlier introduction of parenteral nutrition (PN) or early introduction of PN as a supplement to enteral nutrition (EN). In one of these studies, the EPANIC study of 4600 patients in Intensive Care Units (ICU) in Belgium, patients were given early PN and EN versus waiting 7 days before starting the PN. This study is due to publish in December 2012. An Health Technology Assessment (HTA) entitled, “CALORIES”, assesses early parenteral versus early enteral nutrition in critically ill patients and is due to publish in 2015. These should be considered at the next review.

16. During consultation, new areas to consider in an update of the guideline were highlighted. These should be considered at the next update review. They include:

- Immunonutrition (including glutamine and special lipid formulations) for both enteral and parenteral use
- Psychiatric referral for people that refuse to eat or drink.
- Methods of tube placement, such as the use of electromagnetic enteral access systems to ensure correct placement of the nasogastric and post pyloric feeding tubes. It is possible that this would be more appropriate to be covered under the medical technologies guidance.

- Introducing critically ill obese people into the scope as there is an emerging body of evidence within this area.
- Nutrition guidelines for people with liver disease due to the specialist requirements and lack of understanding within this area.
- Infection prevention recommendations. However, there is currently an infection prevention guideline in development.
- That QUIPP, CQC and BAPEN guidance should be considered in the future when there is more evidence to support the alignment of these recommendations to those of the NICE Guideline.

Anti-discrimination and equalities considerations

17. No evidence was identified to indicate that the guideline scope does not comply with anti-discrimination and equalities legislation.

Conclusion

18. Through the consultation some additional areas were identified which were not covered in the original guideline scope including nutrition within specific diseases; following surgery and the use of electromagnetic feeding devices. Several stakeholders, including consulted members of the GDG, stated that it would be appropriate to wait to review the area of immunonutrition, to ensure that the evidence is sufficient for a conclusive review. There are no factors described above which would invalidate or change the direction of current guideline recommendations. The nutrition support guideline should not be updated at this time.

Relationship to quality standards

19. This is being considered for inclusion in the scope of a quality standard on nutritional support in hospital, including young people.

20. The guideline should not be considered for an update at this time.

Fergus Macbeth, Director
Sarah Willett, Associate Director
Review carried out by NCGC

Centre for Clinical Practice

June 2011

Appendix 1

The following NICE guidance is related to CG32:

Guidance	Review date
PH 11: Guidance for midwives, health visitors, pharmacists and other primary care services to improve the nutrition of pregnant and breastfeeding mothers and children in low income households, 2008	Expected review date: TBC
PH 27: Dietary interventions and physical activity interventions for weight management before, during and after pregnancy (2010).	Expected review date: TBC
CG 02: Infection control, prevention of healthcare associated infection in primary and community care, 2007	An update of this guideline is currently scheduled for publication, 2011.
CG 63: Diabetes in pregnancy management of diabetes and its complications from preconception to the postnatal period, 2008	Reissued July 2008 Consultation on review proposal with stakeholders: 07 March 2011 - 20 March 2011
CG 66: Type 2 diabetes: the management of type 2 diabetes (update), 2010	A decision for review to be made July 2011.
CG 39: Anaemia management in people with chronic kidney disease (CKD) (2006).	An update issue in February 2011 (CG114).
CG 43: Obesity guidance on the prevention, identification, assessment and management of overweight and obesity in adults and children, 2010	Expected review date: November 2011
CG 68: Diagnosis and initial management of acute stroke and transient ischaemic attack (TIA) (2008).	Review decision date: July 2011
IPG 232: Serial transverse enteroplasty procedure (STEP) for bowel lengthening in parenteral nutrition-dependent children. (2007).	Expected Review date: TBC
CG73: Chronic Kidney Disease - National clinical guideline for early identification and management in adults in primary and secondary	This guidance is currently being reviewed. Expected publication date: February 2011

care, 2008	
CG 84: Management of acute diarrhoea and vomiting due to gastoenteritis in children under 5 (2009)	Review decision date: April 2012
TA142: Erythropoetin (alpha and beta) and darbepoetin for the treatment of cancer-treatment induced anaemia (2008).	Review date: February 2011
CG 09: Eating disorders: core interventions in the treatment and management of anorexia nervosa, bulimia nervosa and related eating disorders, 2010	Not currently scheduled for consideration for an update
Identification and management of overweight and obese children in primary care and education, including advice to parents and carers	Public Health Guideline In progress (expected January 2013)
Preventing obesity using a 'whole-system' approach at local and community level	Public Health Guideline In progress (expected March 2012)
The management of hip fracture in adults	For Publication**: June 2011**
The Management Crohn's Disease	For Publication: December 2012
Identification and weight management of overweight or obese children: community based interventions	Public Health Guideline In progress

Appendix 2

National Institute for Health and Clinical Excellence

CG32 Nutrition Support
Guideline Review Consultation Comments Table
16.05.11 –27.05.11

Stakeholder	Agree / Disagree with proposal to not update?	Comments .	Comments on areas excluded from original scope	Comments on equality issues
Department of Health		I wish to confirm that the Department of Health has no substantive comments to make regarding this consultation.		
Abbott Laboratories Ltd.	Disagree – we would challenge the conclusion that the direction of travel has not changed.	<u>8.5.1 Oral nutrition vs. standard care</u> Within the consultation document, NICE identify that new data are available which strengthen the recommendation for the use of oral nutritional supplements (ONS) across all healthcare settings. NICE additionally identify that ONS are associated with clinical and health economic benefits, including improvements in quality of life [17-20, 22,25,27-29.] , We believe that the data presented in the consultation document are sufficient to merit a change in the direction of the current guideline to strengthen the recommendations for the use of ONS. Section 8.3.7 of the original guideline states that there is no evidence for dietary advice, yet section 8.4.4 concludes that dietary advice *should* be just as effective as ONS. We believe that the data presented in the consultation document are sufficient to merit a change in the direction of the current guideline to	<u>Immunonutrition (9.2 Enteral Nutrition)</u> Eleven studies were identified in the consultation document pertaining to immunonutrition. The potential benefits of formulas containing eicosapentaenoic acid (EPA), gamma linolenic acid (GLA) and antioxidants were identified with regard to improving clinical outcomes in the critically ill patient, including a reduction in mortality and ventilator-free ICU days[45]. We would like to take this opportunity to draw your attention to additional data which further supports these conclusions, namely Singer P *et al. Crit Care Med* 2006; 34(4):1033 and Pontes-Arruda A *et al.* JPEN	

Stakeholder	Agree / Disagree with proposal to not update?	Comments .	Comments on areas excluded from original scope	Comments on equality issues
		remove the assumptions that dietary advice is as effective as ONS in improving health outcomes. We do not believe the clinical evidence is sufficiently robust to support this statement. We would also like to take this opportunity to draw your attention to a summary of the evidence base produced by MNI in 2010 (attached) – appendices II and III summarise further randomised controlled trials which support improvements in nutritional parameters and functional benefits related to ONS supplementation vs. standard care. We also believe that it would be important to review CG32 from a financial perspective to see if there are additional areas where significant savings are possible. NICE has previously noted that significant savings may be possible through systematic screening, assessment and treatment of malnourished patients and has stated that if CG32 is fully implemented to result in better nourished patients that this "would lead to reduced complications such as secondary chest infections, pressure ulcers, wound abscesses and cardiac failure" and that "conservative estimates of reduced admissions and reduced length of stay for admitted patients, reduced demand for GP and outpatient appointments indicate significant savings are possible." http://www.nice.org.uk/usingguidance/benefitsofimplementation/costsavingguidance.jsp We would like to draw your attention to a recent publication by Guest *et al.* which states that	2008; 32(6): 596. In addition, ASPEN concluded that there were sufficient evidence to make Grade A recommendations on the use of formulas containing EPA, GLA and antioxidants in patients with ARDS and ALI (McClave S *et al. JPEN* 2009; 33:277). In light of these data we believe the direction of the recommendations has changed. It may also be appropriate to update Table 20 in Section 9.11 based on these new data.	

Stakeholder	Agree / Disagree with proposal to not update?	Comments .	Comments on areas excluded from original scope	Comments on equality issues
		malnutrition costs the NHS £1000 per patient over a 6 month period; malnourished patients visit their GP twice as often as those who are well nourished (regardless of co-morbitidies); malnourished patients are three times more likely to be admitted to hospital; and length of stay is increased by 3 days where patients are malnourished *(Clin Nutr* 2011 doi:10.1016/j.clnu.2011.02.002).		
RCP	Overall, agree.	The RCP is grateful for the opportunity to comment on this review proposal. Overall, we do not think that major changes to the current guidance are necessary at present. Although there is quite a lot of new evidence available it is generally supportive of the current guidelines. However, a number of areas where clarification and simplification might be helpful were identified. Our experts felt that the section on 'refeeding syndrome' had caused a great deal of discussion and some controversy and could do with clarification and reworking. Other areas that could potentially be improved include the economic data and the data on oral nutritional support which may not have been adequately refined for individual situations. We agree that immunonutrition would be an interesting area to explore and clarify but the evidence is currently ambiguous and overall it is probably a minor consideration in terms of the main thrust of the guidelines.		

Stakeholder	Agree / Disagree with proposal to not update?	Comments .	Comments on areas excluded from original scope	Comments on equality issues
		It is perhaps worth highlighting the RCP report 'Oral feeding difficulties and dilemmas' 2010, http://bookshop.rcplondon.ac.uk/details.aspx?e=295 The RCP report has a different emphasis but in some respects complements the NICE guideline – for example in its sections on law and ethics and practical dilemmas. The RCP's report also gives a summary of swallowing mechanisms that details the underlying physiology.		
Royal College of Nursing	See comments	We would support the proposal that no amendments / additions are required at present, and that this should be reviewed again in three years. In the interim it is important to highlight the role of infection prevention.	We note there is no mention of the value of nutritional support in the prevention of infection e.g. healthcare associated infections such as respiratory infections or gastrointestinal infections) even though the community NICE Infection control guidelines are cross referenced in the reference section. It is not clear if the literature review included this in its terms of reference. We recognise that this was not part of the remit /scope of the original guideline. However, in view of the drive to reduce infections we wondered if this point should have been included in considering whether or not this guideline should	

Stakeholder	Agree / Disagree with proposal to not update?	Comments .	Comments on areas excluded from original scope	Comments on equality issues
			be updated?	
DSRF-UK	Disagree	When a patient refuses to eat and drink. Immediate assessment by Psychiatrist is essential. If this does not happen there will be fast decline and death within days. Lack of cooperation can be an attempt to escape confinement and not a desire to die.	Patients who refuse to eat and drink should be treated as mental patients with access to those medicines.	I have watched a relative take months to die while never getting into a mental care facility.
Member of Nutrition GDG & Intensive care society	Overall recommendation will not change but some areas may need re-emphasis	Parenteral Nutrition The timing of the introduction of parenteral nutrition (PN) is often questioned and was considered correctly in the NICE guidance to avoid its early over use. The guidance does not need to change as the overall structure cautions about using PN before enteral nutrition (EN) has been considered and avoids its early and aggressive use. However there are a number of new studies completed or underway that is examining the earlier introduction of PN or where it is introduced early to supplement EN. The origin of the rationale for these studies is unclear and in particular there is one UK portfolio study funded by the HTA "CALORIES" that does not reflect current NICE guidance nor a research questions that the guidance suggested. This has started and its design may well produce a predicted outcome of increased harm rather than no benefit. Just completed is the largest nutrition study to date "EPANIC" from Belgium. This has 4600 plus patients in ICU given early PN +EN versus waiting 7 days before starting the PN. The early arm does not follow UK guidance. Although yet to be published I expect it soon but I think (only rumours) that the results will show that	Immunonutrition This is a confusing banner under which to discuss a variety of issues and is unhelpful. The term arose from a number of enteral feed mixtures of nutrients that were felt to alter the immune response to inflammation. They are very different in content and the data is confusing unless one disaggregates the data. The scientific background to some are slender. There are some mixtures that have been shown very beneficial given before surgery or soon after that have improved outcomes and have a good evidence base. Using these feed in other areas (e.g ICU has proved negative). There are specific enteral feed formulations where the lipid content and nature are significantly different. The different lipids allow	

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		delaying PN reduces harm with some modest morbidity and cost benefits though overall longterm outcome not much different. Because of the size this study will receive much interest and needs commenting upon. Neither group match UK guidance which sits somewhere in between. The special lipid formulations for enteral use must be included as they are widely used and have strong evidence. The different PN lipid formulations have less evidence base but they have a firm clinical footprint and need discussing. A neglected topic in previous guidance. There is so much evidence (some confusing) that needs to be reviewed and discussed. It features in many international guidelines so its omission is not rationale.	the patients to have a distinctly different inflammatory respose. These come with considerable scientific rationale and are being demonstrated in several clinical studies to modify the disease process in ARDS and sepsis in ICU. These are worthy of discussion in further review. Glutamine should not be considered simply under the immunonutrition heading. It does have important implications for immune function but the debate and its rationale is distinctly different. It has a huge scientific base. Current conventional amino acid mixtures used in PN have omitted glutamine because it is not very soluble and as synthesised in the body so considered non-essential. However a large body of scientific evidence now shows that a conditional deficiency can arise whereby in the very sick PN fed patient the demand for glutamine can outstrip the endogenous supply and compromises many cellular functions including those of the immune system. There are many small studies showing various	

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			benefits and several countries include the addition of glutamine in their guidance now that it can be safely and easily given as a dipeptide. Definitively proving a benefit of glutamine addition in large clinical studies has proved difficult because the design of these studies for licensing of other reasons has not taken the known issue of a developing conditional deficiency fully into consideration and the studies have been "negative". All the evidence shows it to be safe and there is no scientific logic to continue its omission given we have more data on this one amino acid than we do for all the other amino acids. It was only omitted from PN feeds in the 1960s when we changed from whole protein hydrolysates which contain glutamine to mixtures of individual amino acids. It omission was merely one of ease of manufacture and stability now overcome by modern dipeptides. This should be examined by NICE as there is a large body of clinical evidence and it was a glaring omission last time.	

Stakeholder	Agree / Disagree with proposal to not update?	Comments .	Comments on areas excluded from original scope	Comments on equality issues
Age UK	We have no view on whether the Guidelines should be updated or not.	However, if it is decided not to update, we suggest that NICE issues a statement in order to draw attention to the fact that Guideline is still valid and that the recommendations still hold. We further suggest that the statement puts the recommendations into the context of current performance framework.		
British Society of Gastroenterology	Agree	The consensus view is that there are no major concerns or feedback comments. Perhaps in the future the re-feeding guidelines could be updated but there is a relative absence of new data for the time being		
King's College Hospital NHS Foundation Trust	Disagree	There continues to be a major problem with undernutrition and the poor application of nutrition support across all care settings. This is most recently evidenced by the BAPEN publication of the results of Nutrition Screening Week 2010. The report of the Nutrition Action Plan Delivery Board and the Governments response to it was published in February 2010. Delivery of better care with regard to nutrition and hydration is one of the key High Impact Actions identified by the Chief Nurses Office for Nurses and Midwives.	The scope of the original guidance should be expanded to include nutrition support delivered through the provision of food and beverages. The majority of nutrition support in all care settings is delivered on a plate.	
RCSLT	Agree	The RCSLT supports the decision to not change this NICE guidance.		

Stakeholder	Agree / Disagree with proposal to not update?	Comments .	Comments on areas excluded from original scope	Comments on equality issues
Nutricia Ltd	Agree no to update CG32 at current time, propose review in 2 years time.	In recognition of the increasing body of evidence in the field of nutrition support, we advocate a timely review of CG32. We recommend that a full review and update is conducted in 2 years time, to enable incorporation of current studies and publications in development.		
British Liver Trust	disagree	The current guidance covers the need for nutritional support for those who have lost weight and those who are awaiting an operation but does not cover the vital role of nutritional assesment for people such as those with liver disease where nutritional advice and guidance can make significant difference in supporting the organ to function well for longer and improve patient outcomes. Several review papers on nutrition in liver disease recognise the importance of dietary intervention to prevent the development of protein calorie malnutrition especially for those with cirrhosis. The initiation of nutritional therapy has the potential to reduce the risk of complications and to improve morality rate. By the time muscle wasting has occurred, outcomes are poorer. 1. Plauth *et al.* ESPEN guidelines on enteral nutrition: liver disease Clinical Nutrition 2006 25:285-294 2. O'Brien, A. and Williams, R. Nutrition in end-stage liver disease: principles and practice.		

Stakeholder	Agree / Disagree with proposal to not update?	Comments .	Comments on areas excluded from original scope	Comments on equality issues
		Gastroenterology 2008; 134 1729-1740 3. Henkel, A.S. and Buchman, A.L. Nutritional support in patients with chronic liver disease. Nature Clinical Practice. Gastroenterology and Hepatology 2006 Yet feedback from patients indicate dietary support is very rarely offered, or made available when asked for, until symptoms have become severe or someone is referred for transplant. We feel this is an area which the guideline could address, as the understanding of the role of the liver in processing nutrients and therefore the value of dietary support in liver disease is not widely recognised enough.		
British Specialist Nutrition Association Ltd (BSNA)		BSNA agrees with NICE's proposal not to update *Clinical Guideline 32: Nutrition Support* at this time but we would like to see the guideline reviewed again in two years time to enable NICE to incorporate further work in its review which is currently in development and not yet published. Whilst BSNA agrees with NICE's decision not to update *Clinical Guideline 32: Nutrition Support*, BSNA would like to take this opportunity to highlight the growing body of evidence on the burden of malnutrition and how it continues to be under-recognised and under-treated in the UK.	Whilst BSNA agrees with the proposal not to include a new section on immunonutrition in the *Clinical Guideline 32: Nutrition Support,* BSNA would like to draw the following studies to NICE's attention ahead of future review of the guideline: • Drover et al, Perioperative Use of Arginine-supplemented Diets: A Systematic Review of the Evidence, *Journal of American College of Surgeons,* (article in press), 2011	N/A

Stakeholder	Agree / Disagree with proposal to not update?	Comments .	Comments on areas excluded from original scope	Comments on equality issues
		The recently published report *Tackling Malnutrition: Oral nutritional supplements as an integrated part of patient and disease management in hospital and in the community* synthesises relevant information on the rationale for and value of oral nutritional supplements (ONS) and provides an up-to-date and practical summary of the existing evidence base for the use of ONS. BSNA has enclosed a copy of the report with this response and we hope NICE will find the document helpful in advance of a future review. Oral Nutrition Supplements (ONS) are a fundamental form of nutritional support for patients who cannot meet their nutritional needs through food alone. There is a wide body of evidence that demonstrates that ONS are both cost and clinically effective in supporting patients suffering from, or at risk of, malnutrition. BSNA would like to highlight the findings of the most recent nutrition screening survey by the British Association for Parenteral and Enteral Nutrition (BAPEN) which found that the burden of the disease is growing and that there has been a rise in the number of adults admitted to hospitals who are at risk of malnutrition (BAPEN, *Nutrition Screening survey in the UK and Republic of Ireland in 2010,* February 2011, available here: http://www.bapen.org.uk/pdfs/nsw/nsw10/nsw10-report.pdf). The survey of nearly 10,000 UK patients by BAPEN shows that more than one in three adults admitted to hospital and to care homes and one in five adults	• Waitzberg et al, Postsurgical Infections are Reduced with Specialized Nutrition Support, *World Journal of Surgery* 30: 1–13, 2006 • McClave S et al, ASPEN/SCCM Guidelines for the provision and assessment of nutrition support therapy in the adult critically ill patient, *Journal of Parenteral and Enteral Nutrition,* Vol. 33:3, 2009 • Gianotti et al, A Randomised controlled trial of preoperative oral supplementation with a specialised diet in patients with gastrointestinal cancer, *Gastroenterology*; 122: 1763-1770, 2002 • Weimann et al, ESPEN guidelines on enteral nutrition: Surgery including organ transplantation, *Clinical Nutrition*, 25 (2): 224-44, 2002 • Cerantola et al, Immunonutrition in gastrointestinal surgery, *British Journal of Surgery,* 98: 37–48, 2011 • Marik and Zaloga, Immunonutrition in High-Risk	

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		admitted to mental health units are at risk of malnutrition. The survey also found that much of the malnutrition present on admission to institutions originates in the community, demonstrating the importance of treating the condition appropriately in the community in order to reduce the number of costly and unnecessary hospital admissions. In addition, the survey found that nutritional screening policies and practice vary widely between and within healthcare settings, and so malnutrition continues to be under-recognised and under-treated. Malnutrition is widespread in hospitals and in the community, and has detrimental effects in terms of health outcomes and cost to the NHS and wider society. Effectively identifying and managing malnutrition is critical to supporting people to recover or maintain their health and to prevent unnecessary and costly hospital admissions. Malnutrition costs around £13 billion annually in the UK, with around £8 billion of this cost arising in hospitals (BAPEN, *Combating malnutrition: recommendations for action*, February 2009). A saving of just 1% of the annual healthcare cost of malnutrition would amount to efficiencies of £130 million annually (BAPEN, *Combating malnutrition: Recommendations for action,* February 2009).	Surgical Patients, *Journal of Parenteral and Enteral Nutrition*, Vol. 34, 2010	

Stakeholder	Agree / Disagree with proposal to not update?	Comments .	Comments on areas excluded from original scope	Comments on equality issues
		We hope NICE will find the data outlined above useful in advance of any future review of *Clinical Guideline 32: Nutrition Support.* BSNA would also like to highlight the recent data published in *Clinical Nutrition* which show that the cost of managing patients diagnosed in the community with malnutrition is more than twice that for patients without malnutrition. The study selected 1,000 patients with an initial diagnosis of malnutrition and 996 non-malnourished adults from the Health Independent Network database. The study found that the six-month per patient cost of managing malnourished patients was £1,753 compared with £750 for non-malnourished patients. GP consultations were the primary cost driver in both groups, followed by hospital admissions, and then drug prescriptions (Guest JF, et al, Health economic impact of managing patients following a community-based diagnosis of malnutrition in the UK, *Clinical Nutrition*, 2011). The burden of the illness is considerable and recent guidance from NICE has identified the delivery of better nutritional care as the third largest potential source of cost saving to the NHS (NICE, *Cost saving guidance*, 2009). We hope NICE will find the data outlined above helpful in advance of any future review of *Clinical Guideline 32: Nutrition Support.*		

Stakeholder	Agree / Disagree with proposal to not update?	Comments .	Comments on areas excluded from original scope	Comments on equality issues
Sheffield Teaching Hospitals Foundation Trust		More cross correlation of evidence relating to national standards e.g QIPP, CQC and BAPEN should be considered. Clinical staff need standardised guidance to work from not just one element. It would be very helpful for all the bodies as listed above to work together to produce guidance in this and other areas.		
British Dietetic Association	Disagree	On the basis of the overall lack of any significant new evidence that would necessitate a review of the guideline the BDA concurs with the conclusion not to update the guidance at this time, but we would like the following comments to be taken into account alongside this overall statement. However, we do have concerns that where some significant issues were raised by a single GDG member that these were not seen as significant, despite the individual member representing significant areas of expertise and experience. Dismissing these views reduces the impact implementation and influence of NICE guidance in the wider healthcare community. In particular we would like to highlight the issue raised in relation to care in a primary care setting; this is an important area of practice and in the absence of the 'high level' evidence we would urge the consideration of alternative evidence to inform practice Table 10 enteral feeding monitoring is unfeasible for home feeding, this needs to be revisited and monitoring/assessment for HEN should be addressed.		

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		We support the statement that there is no evidence at this time to support the alignment of QUIPP, CQC and BAPEN recommendations but this is an important component for consideration in the future. 6.3.2 Feeding the critically ill obese – emerging evidence regarding protein requirements needs to be incorporated		
Merck Serono	Agree	Merck Serono is committed to the use of the best evidence to promote clinical best practice. In this perspective, we feel that the conclusion of section 10.4 (of the original CG32) can be reinforced with the Cahill *et al*. (JPEN 2011) study which reflects from 703 patients that early parenteral nutrition is not associated with better clinical outcomes compared with late enteral nutrition.		
	Agree	Merck Serono agrees that enteral tube feeding is very likely to be cheaper than parenteral nutrition as indicated in Table 23. However, all economic studies from Table 23 are published prior to 2003 implying that an update might be appropriate to ascertain the main conclusion for the UK setting.		
	Agree / Disagree	From the list of high RCT level reported in the clinical area 2, it seems that one study is missing: - Holzinger *et al* (Crit Care Med 2011) RCT (Jejunum tube placement in critically ill patients: A prospective randomized trial comparing the endoscopic technique with the electromagnetically visualized method)	With regard to the enteral tube feeding, Merck Serono would like to distinguish between two categories of naso-enteral tube types and placement techniques. The NPSA recommend the use of CE marked naso-enteral tubes with	We feel that a review of post-pyloric tube placement techniques, comparing blind, radiologically-guided, endoscopically-guided, fluoroscopy-guided- and electromagnetically-guided tube placement methods

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		NB: Beside, we noticed that the Metheny et al. 2011 study also highlights that postpyloric feeding is associated with less risk of respiratory aspiration and pneumonia.	cm markings and which are fully radiopaque (tube and tip) to assist interpretation on x-ray following blind placement methods. A new category of tubes combining the benefits above but with an electromagnetic pre-inserted stylet which allows the tubes to be placed at the bedside under electromagnetic guidance are available, which may remove the issues inherent with blind tube placement techniques. Merck Serono feels that clinical and economic advantages and disadvantages of these two categories of enteral tube placements should be part of the review scope.	would be of benefit in terms of patient safety, efficacy and cost.
	Agree	We agree with one of GDG member "*concerned about the harm caused by misplaced nasogastric feeding tubes in adults*", pointing out that "*the main causal factor leading to harm was misinterpretation of X-rays*". The Patient Safety Alert NPSA / 2011 /PSA002:Reducing the harm caused by misplaced nasogastric feeding tubes in adults, children and infants, highlights that "only 31% of junior doctors have any formal guidance or training on the use of X-ray for checking nasogastric positioning".	The same report from the NPSA highlight that "*Stakeholders including professional bodies and a sample of local hospitals in England and Wales noted the impact in terms of increased X-rays (cost, radiation exposure and risks of misinterpretation) and likely delays for patients needing urgent feeding. There were also implications for access to X-rays for patients in the*	

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			community. These disadvantages appeared to outweigh the benefits of reducing risks of misplacement in the oesophagus". The NPSA report 2011 that "*Electromagnetic bedside feeding devices are being used in a number of units and may increasingly have a place as a second line testing method*".	
	Agree / Disagree	From section 1.10 we understand that the opportunity costs for other effective treatments shall be considered. We believe that NICE is also promoting the use of innovative techniques to improve productivity and efficiency in the NHS.	We understand from several sources that the use of the Electromagnetic Enteral Access System provide some cost savings in terms of X-rays, average wait for X-rays, reduction in need of competent person for X-ray interpretation (radiographer, radiologist). The Cortrak system is provided for free (as a loan) to all services using the electromagnetic enteral access system, along with an RCN-accredited training programme and full service support. Checking the placement of the tube is defined in real time and a reproducible document may be printed and attached in the patient's notes, at	

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			the end of the procedure. In this context, several publications have detailed the economic and resource use impact to implement this system: - Windle *et al* (J Hum Nutr Diet 2009): "Implementation of an electromagnetic imaging system to facilitate nasogastric and post-pyloric feeding tube placement in patients with and without critical illness" - Hemington-Gorse *et al* (Burns 2011): The use of Cortrak Enteral Access System for post-pyloric feeding tube placement in a burns intensive care.	
	Disagree	The recommendation in section 9.16.1 (in relation with the section 1.14.2.7) for the enteral nutrition seems unclear. Without undermining clinical judgement it would be useful to define a nasogastric (NG) feeding algorithm including: • choice of prokinetic and specify timing of initiation, • how long NG feeding should be trialled before commencing post-pyloric feeding	- Taylor *et al.* Treating delayed gastric emptying in critical illness: metoclopramide, erythromycin, and bedside nasointestinal tube placement. JPEN 2010; 34(3):289-94.	

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	Disagree	We consider that there is increasing strength of hierarchy of feeding of NG then post-pyloric then PN rather than current NG then post-pyloric and/or PN. We therefore consider that some amendment in algorithm 5.7 Enteral and Parenteral algorithm to support feeding hierarchy are needed more clearly. There is some data to support the potential amendment available via www.criticalcarenutrition.com		
	Disagree	We would appreciate an update of the NPSA 2005 recommendation regarding choice of pH paper to use i.e. CE marking for human gastric aspirate		
	Disagree		The Table 4 in the Enteral Nutrition Monitoring may consider evidence for use of pre-albumin	
	Disagree	Although the current advice reported in section 9.6.1.2 was adequate at the time of the guideline, we believe there should be consideration of inclusion of the electromagnetic enteral access system which can be used to place both nasogastric and post-pyloric tubes at the bedside and give confirmation without need for x-ray, fluoroscopy or endoscopy involvement. The current advice is "*Nasoduodenal and nasojejunal tubes Nasoduodenal (ND) and nasojejunal (NJ) tubes are those placed into the gastrointestinal tract with the distal tip lying beyond the stomach in the duodenum or*		

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		jejunum respectively. These tubes can be placed at the bedside or with endoscopic/radiological assistance but the position needs to be confirmed by abdominal X-ray after placement (unless placed under fluoroscopic guidance).”		

These organisations were approached but did not respond:

Airedale NHS Foundation Trust
Alder Hey Children's NHS Foundation Trust
All Wales Dietetic Advisory Committee

All Wales Senior Nurses Advisory Group (Mental Health)

Alzheimers Society
Anglesey Local Health Board
Association of Clinical Biochemists, The
Association of Clinical Pathologists
Association of Surgeons in Primary Care
Association of Surgeons of Great Britain and Ireland
Avon and Wiltshire Mental Health Partnership NHS Trust

Bard Limited

Barnet PCT
Barnsley PCT
Baxter Oncology
BMJ
Bolton Hospitals NHS Foundation Trust

Britannia Pharmaceuticals Limited

British Association for Parenteral & Enteral Nutrition (BAPEN)

British Association of Oral and Maxillofacial Surgeons

British Association of Paediatric Surgeons

British Association of Perinatal Medicine

British Geriatrics Society

British Geriatrics Society

British Medical Association (BMA)

British National Formulary (BNF)

British Pharmaceutical Nutrition Group and Pre-Term Parenteral Nutrition

British Psychological Society, The

British Society for Allergy & Clinical Immunology (BSACI)

British Society for Heart Failure

British Society of Paediatric Gastroenterology, Hepatology & Nutrition (BSPGHAN)

British Society of Paediatric Gastroenterology, Hepatology & Nutrition (BSPGHAN)

Buckinghamshire PCT

Cambridge University Hospitals NHS Foundation Trust (Addenbrookes)

Care Quality Commission (CQC)

Carlisle and District Primary Care Trust

Central Area of North Wales NHS Trust

City and Hackney Teaching PCT

CLIC Sargent

Colchester Primary Care Trust

College of Occupational Therapists

Connecting for Health

Co-operative Pharmacy Association

Croydon PCT

Department for Communities and Local Government

Department of Academic Psychiatry - Guy's

Department of Health Advisory Committee on Antimicrobial Resistance and Healthcare Associated Infection (ARHAI)

Department of Health, Social Services & Public Safety, Northern Ireland (DHSSPSNI)

Derby Hospitals NHS Foundation Trust

Diabetes UK

Diet Plate Ltd, The

Disabilities Trust, The

Eating Disorders Association, The

Faculty of Dental Surgery

Faculty of Intensive Care Medicine

Faculty of Public Health

Fibroid Network Charity

Food Standards Agency

Fresenius Kabi Ltd

Gedling Primary Care Trust

GeneWatch UK

Great Western Hospitals NHS Foundation Trust

Greater Peterborough PCT

Guys and St Thomas NHS Foundation Trust

Hampshire & Isle of Wight Strategic Health Authority

Hampshire Partnership NHS Foundation Trust

Healthcare Improvement Scotland

Healthcare Quality Improvement Partnership

Help the Aged

Help the Hospices

Hertfordshire Partnership NHS Trust

Humber NHS Foundation Trust

Infection Prevention Society

Institute of Sport and Recreation Management

Intra-Tech Healthcare Ltd
Johnson & Johnson Medical
Keele University
Kingston PCT
Lancashire Care NHS Foundation Trust
Leeds Teaching Hospitals NHS Trust
Liverpool PCT
Lymphoma Association
Malnutrition Advisory Group (MAG)
Manchester Royal Infirmary
Medicines and Healthcare Products Regulatory Agency (MHRA)
Mencap
Mid Essex Hospitals NHS Trust
Middlesbrough PCT
Ministry of Defence (MoD)
Motor Neurone Disease Association
MRC Human Nutrition Research
National Care Standards Commission
National Council for Disabled People, Black, Minority and Ethnic Community (Equalities)
National Heart Forum
National Kidney Federation (NKF)
National Nurses Nutrition Group
National Patient Safety Agency (NPSA)
National Treatment Agency for Substance Misuse
Nestle Clinical Nutrition
Newcastle PCT
NHS Clinical Knowledge Summaries Service (SCHIN)
NHS Direct
NHS Plus
NHS Western Cheshire

Niger Delta University
North Glamorgan NHS Trust - Merthyr Tydfil
North Somerset PCT
Nottingham City PCT
Nottinghamshire Healthcare NHS Trust
Novartis Consumer Health (Novartis Medical Nutrition)
Nutrition Society
Oxford Nutrition Ltd
Paines and Byrne Limited
Parkinson's Disease Society
Penny Brohn Cancer Care
PERIGON Healthcare Ltd
Pharmacosmos
PINNT
Powys Local Health Board
Princess Alexandra Hospital NHS Trust
Proprietary Association of Great Britain (PAGB)
Public Health Wales
Rainbows Hospice for Children & Young People
Relatives and Residents Association
Rotherham NHS Foundation Trust
Rotherham NHS Foundation Trust
Royal College of Anaesthetists
Royal College of General Practitioners
Royal College of General Practitioners Wales
Royal College of Midwives
Royal College of Obstetricians and Gynaecologists
Royal College of Paediatrics and Child Health
Royal College of Pathologists
Royal College of Physicians Edinburgh
Royal College of Psychiatrists

Royal College of Radiologists
Royal College of Surgeons of England
Royal College of Surgeons of England
Royal National Institute of Blind People

Royal Pharmaceutical Society of Great Britain

Royal Pharmaceutical Society of Great Britain

Royal United Hospital Bath NHS Trust
Samantha Dickson Research Trust, The
Sanctuary Care
Scottish Intercollegiate Guidelines Network (SIGN)
Sheffield PCT
SHS International Ltd
Social Care Institute for Excellence (SCIE)

Society of Cardiothoracic Surgeons

South & Central Huddersfield PCTs
South Birmingham Primary Care Trust
South Tees Hospitals NHS Trust
South West London and St Georges Mental Health NHS Trust

South West Yorkshire Partnership NHS Foundation Trust

Southern Alliance of Tissue Viability Nurses
Staffordshire Moorlands PCT
Stockport PCT
Sue Ryder Care
Surrey Heart & Stroke Network

Tameside and Glossop Acute Trust

The Neurological Alliance
The Royal Society of Medicine

The Royal West Sussex Trust

The Stroke Association

Trafford Primary Care Trusts

Twins & Multiple Births Association (Tamba)

UCLH NHS Foundation Trust
UK Anaemia
UK Anaemia
UK Specialised Services Public Health Network
United Kingdom Clinical Pharmacy Association (UKCPA)
University College London Hospitals (UCLH) Acute Trust
University of Liverpool - Department of Child Health
Vale of Glamorgan Local Health Board
Vifor Pharma UK Ltd
ViroPharma Ltd
Vygon (UK) Ltd
Welsh Assembly Government
Welsh Scientific Advisory Committee (WSAC)

Women's Health Concern

York Teaching Hospital NHS Foundation Trust