

Draft PMB definition guideline for medical nutrition therapy in palliative care (adults)

DISCLAIMER

The medical nutrition therapy in palliative care (adults) benefit definition has been developed for the majority of standard patients. These benefits may not be sufficient for outlier patients. Therefore Regulation 15(h) and 15(l) may be applied for patients who are inadequately managed by the stated benefits. The benefit definition does not describe specific in-hospital management such as theatre, anaesthetists, anaesthetist drugs and nursing care. However, these interventions form part of care and are Prescribed Minimum Benefits.

TABLE OF CONTENTS

| Dis | claimer | ii |
|-----|---|------|
| Abb | previations | iv |
| Def | initions | V |
| 1. | Introduction | .7 |
| 2. | Scope and Purpose | .7 |
| 3. | Nutrition in Palliative Care | 8 |
| 4. | Medical Nutrition Therapy (MNT) in Palliative Care | 8 |
| 5. | Nutrition in end-of-life | 9 |
| 6. | Multidisciplinary Teams | 9 |
| 7. | Dietetic Services Provided | 10 |
| 8. | Progress Report | . 10 |
| 9. | Entry Criteria for MNT in Palliative Care patients | . 10 |
| 10. | Route of MNT Provision | 11 |
| | 10.1. Oral Nutrition Supplementation (ONS) | 11 |
| | 10.2. Enteral Tube-feeding | 11 |
| 11. | Exit Criteria | 13 |
| 12. | Nutrition-related PMB's for Palliative and end-of-life care in adults | _15 |
| 13. | Bibliography | 21 |

ABBREVIATIONS

| CMS | - | Council for Medical Schemes |
|---------|---|--|
| PMB | - | Prescribed Minimum Benefit |
| DTPs | - | Diagnosis Treatment Pairs |
| MNT | - | Medical Nutrition Therapy |
| DRM | - | Disease-related Malnutrition |
| COPD | - | Chronic Obstructive Pulmonary Disease |
| PEM | - | Protein Energy Malnutrition |
| BMI | - | Body Mass Index |
| ONS | - | Oral Nutrition Supplementation |
| PEG/PEJ | - | Percutaneous Endoscopic Jejunostomy / Percutaneous Endoscopic Gastronomy |
| PN | | Parenteral Nutrition |

DEFINITIONS

Palliative Care

This PMB benefit, as with the other PMB benefits for all other aspects of Palliative Care management, is defined with reference to the WHO Definition of Palliative Care, as follows:

"Palliative care is an approach that: improves the quality of life of patients and families facing the problems associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual.

Palliative care:

- provides relief from pain and other distressing symptoms;
- affirms life and regards dying as a normal process;
- intends neither to hasten or postpone death;
- integrates the psychological and spiritual aspects of patient care;
- offers a support system to help patients live as actively as possible until death;
- offers a support system to help the family cope during the patient's illness, and in their own bereavement;
- uses a team approach to address the needs of patients and their families, including bereavement counselling, if indicated;
- will enhance quality of life, and may also positively influence the course of illness;
- is applicable early in the course of illness, in conjunction with other therapies that are intended to prolong life, such as chemotherapy or radiation therapy, and includes those investigations needed to better understand and manage distressing clinical complications.

This definition is consistent with the 2017 National Department of Health (NDoH) Policy Framework and Strategy on Palliative Care.

Medical Nutrition Therapy (MNT)

A therapeutic approach to treating medical conditions and their associated symptoms via the use of a specifically tailored nutritional intervention devised and monitored by a registered dietitian, and based upon the patient's diagnosis, medical record, treatment plan, clinical course, physical examination, symptoms and full nutritional assessment (adapted from Skipper, 2009).

Disease-related malnutrition (DRM)

A malnutrition syndrome which result from illness or disease and presenting as a loss of body mass/low body mass index (i.e. evidence of Protein-Energy Malnutrition) and/or compromised nutritional intake with functional impairment (derived from Jensen, 2013).

Diagnostic Categories

The diagnostic categories which are included in this PMB code for nutritional support include HIV/AIDS, cancer, chronic kidney disease, chronic liver disease, chronic heart disease, chronic obstructive pulmonary disease (COPD), stroke, progressive neurological diseases, and dementia.

1. INTRODUCTION

- 1.1. The legislation governing the provision of the Prescribed Minimum Benefits (PMBs) is contained in the Regulations enacted under the Medical Schemes Act, No. 31 of 1998 (the Act). With regards to some of the Diagnosis Treatment Pairs (DTPs), medical scheme beneficiaries find it difficult to be fully aware of their entitlements in advance. In addition, medical schemes interpret these benefits differently, resulting in a lack of uniformity of benefit entitlements.
- 1.2. The benefit definition project is undertaken by the Council for Medical Schemes (CMS) with the aim of defining the PMB package, as well as to guide the interpretation of the PMB provisions by relevant stakeholders.

2. SCOPE AND PURPOSE

- 2.1. The guidelines are intended as a recommendation for medical nutrition therapy (MNT) in palliative care for adults in any clinically appropriate setting as outlined in the Act.
- 2.2. The purpose of this guideline is to provide a detailed clarification in respect of benefits and entitlements to members and beneficiaries of medical schemes.

| Table 1: Applicable PMB code for identifying medical nutrition therapy in palli | iative care (| adults) |
|---|---------------|---------|
| | | |

| PMB Code | PMB Description | | ICD10 Code | ICD10 Description |
|----------|---|---|---------------|-------------------|
| 260S | # Imminent death regardless of diagnosis | # Comfort care; pain relief; hydration | Z51.5 | Palliative care |

3. NUTRITION IN PALLIATIVE CARE

- 3.1. Progressive and chronic disease processes, especially where associated with chronic or episodic acute inflammatory components, are frequently associated with a specific malnutrition syndrome, known as disease-related malnutrition (DRM) (Jensen, Compher, Sullivan, & Mullin, 2013).
- 3.2. DRM occurs in 30-70% of patients with chronic and incurable disease, and is associated with poor outcomes, and, in some conditions, independently impacts negatively upon prognosis (Arends, *et al*, 2008). Such malnutrition syndromes in cancer and other chronic, progressive or incurable conditions cause fatigue, anorexia, early satiety, weakness, reduced performance status and reduced quality of life (Norman, *et al*, 2008; Correia & Waitzberg, 2003).
- 3.3. Additionally, malnourished patients experience a more rapid clinical deterioration and faster disease progression, decrease in tolerance of palliating interventions, develop a range of clinical complications, require more management interventions, and have longer duration of in-hospital care (both hospital stay and number of new hospitalisations). Consequently, their clinical care is more challenging and costly; and is associated with worse psychosocial distress (Arends, *et al*, 2017a; Fukuda, *et al*, 2015).

4. MEDICAL NUTRITION THERAPY IN PALLIATIVE CARE

- 4.1. Nutrition support was previously seen as adjunctive to other medical care. However, the field has evolved to the extent that MNT is regarded as a therapeutic strategy which forms an integral part of medical care.
- 4.2. MNT is a form of metabolic support which can influence the response to the disease process, alter the clinical course, influence response to treatment, positively impact on the quality of life, and even alter the survival trajectory (Arends, *et al*, 2017a). Nutrition support may slow physical deterioration, enhance tolerance to other palliative interventions, enhance life quality, and provide a considerable psychological benefit to patients and family members who may find the perception of "starving to death" distressing. Additionally, such patients may have significant nutrition-relevant symptoms, requiring management by a dietitian.
- 4.3. MNT in the palliative setting can confer multiple benefits such as: management of gastrointestinal symptoms, hunger and thirst; management of anaemia and fatigue; improved response to and tolerance of medical treatments; improved sense of wellness and dignity; patient enabled to retain a sense of control over their illness; increased energy and functional capacity; the countering of muscle wasting; possible improved nutritional status; modulated disease progression; and maintenance of immune competence (Laviano, 2016; Arends, 2017; Filteau, 2017).
- 4.4. While there are multiple clinical benefits of MNT, some of the cost savings benefits cited, which include a reduction in hospital length of stay; reduced costs of treatment of disease and malnutrition-related morbidities; reduced hospitalisations and reduced overall higher global healthcare spend; outweigh the cost associated with provision of nutrition support throughout the entire palliation journey (Freijer, *et al*, 2013a, Freijer, *et al*, 2014b).
- 4.5. Nutritional support in palliative care should be attentive to ethical principles, patient/family expressed desires,

and advance directives. A mere diagnosis of incurable status does not preclude the use of artificial nutrition support, and ethical problems may arise if nutrition support is withheld and, in so doing, the patient's death is accelerated as a result of ensuing malnutrition. Conversely, continued nutrition support may not be benign and may be associated with risks. Risk-benefit or benefit-burden analysis is required at various stages of the disease progression (Druml, *et al*, 2016).

4.6. It is essential in palliative care, that an integrated pathway be established for nutrition support to continue outside of the hospital setting. Home enteral nutrition is simple and safe to perform and contributes to cost containment. Furthermore, it is important as an ethical imperative to reduce the pressure on in-patient facilities, as a distributive justice measure.

5. NUTRITION IN END-OF-LIFE CARE

- 5.1. Disease-related malnutrition and nutrition-related problems frequently persist and even worsen at this stage of illness. Nevertheless, nutrition support becomes significantly less important, and may worsen symptoms placing added burdens on carers or nursing staff, as well as the patient.
- 5.2. New initiation of oral supplementation or enteral nutrition is not indicated during end-of-life care. There may be selected, unusual cases where enteral nutrition already commenced in previous stages of illness might simply be continued at low levels until death (e.g. motor neurone disease, severe stroke etc) where there is no specific clinical or ethical indication for withdrawal, according to clinical judgement and bioethical principles (Druml, 2016).

6. MULTIDISCIPLINARY TEAMS

Due to the numerous facets entailed in the medical management of a patient in a palliative care journey, it is necessary the management of such patients incorporates a multidisciplinary team. The members of the multidisciplinary team may comprise various health professionals as appropriate to the clinical case, but should include a registered dietitian who is responsible for the medical nutrition therapy of the patient (Jensen, *et al*, 2013). The multidisciplinary team should produce an integrated care plan, of which a nutrition care plan compiled by a registered dietitian should form part.

7. DIETETIC SERVICES PROVIDED

The MNT benefit should include a minimum number of consultations with a registered dietitian according to the schedule outlined in Table 4 below. The dietitian should follow a nutrition care process (Lacey & Pritchett, 2003), performing the following procedures at the consults, as appropriate:

- 7.1. Nutrition Assessment and/or Re-assessment based upon appropriate anthropometric techniques, biochemical data, clinical data, socio-economic information and nutritional/dietary intake data
- 7.2. Nutrition Diagnosis identifying nutritional problems and their causes or contributing factors
- 7.3. **Nutrition Intervention** including the determination of nutritional requirements, formulation of nutritional goals and implementing nutrition delivery. This may include training/counselling of caregivers or family members.
- 7.4. Nutrition Monitoring and Evaluation including the monitoring of progress, success and outcomes

These aspects of the nutrition care process should in turn be consistently reflected in the global clinical management plan, and the regular feedback/progress reports to the managed care organisation.

8. PROGRESS REPORTS

The treating registered dietitian who forms part of the multidisciplinary team should provide regular follow-up evaluations of patients receiving MNT, and provide feedback reports to the managed care organisation on a 3-6 monthly basis. The feedback report should indicate the basis on which MNT and the route of MNT should be continued or discontinued.

9. ENTRY CRITERIA FOR MNT IN PALLIATIVE CARE PATIENTS

The mere diagnosis of one of the abovementioned diseases, which will require a palliative care plan, does not automatically warrant nutrition support, but MNT should be provided once pre-defined entry criteria are met. Entry and exit criteria may depend on the disease and disease progression (See Table 4 for criteria for specific conditions), but certain global nutritional criteria are useful. Patients may exit and then later re-qualify for MNT benefits according to these criteria, because patterns of disease progression may be fluctuating and non-linear.

Patients with any of the above diagnoses become eligible for MNT when any of the following criteria is met:

- Unintentional weight loss of ≥ 5% has occurred regardless of the time period (see Table 2 below)
- In the presence of Protein-Energy Malnutrition (PEM) of any grade measured by body mass index (BMI), as assessed by a registered dietitian or other appropriately qualified health professional (see Table 3 below).
- In the presence of symptoms negatively impacting nutrient intake or assimilation or which increase nutritional losses.

| Classification of severity of malnutrition by percentage weight change | | | | | | | |
|--|-------------------------|--------------------|--|--|--|--|--|
| Duration | Significant weight loss | Severe weight loss | | | | | |
| 1 months | 5% | > 5% | | | | | |
| 3 months | 7.5% | > 7.5% | | | | | |

Table 2. Weight loss history (Mahan, Escott-Stump & Raymond, 2012)

| Body Mass Index (| BMI): = <u>Body weight (kg)</u> Height (m) ² | |
|-------------------|---|--|
| BMI (kg/m²) | PEM Severity | |
| > 18.5 | Normal | |
| 17.0 – 18.4 | Mild | |
| 16.0 – 16.9 | Moderate | |
| 16 | Severe | |

Table 3: Classification of Protein-Energy Malnutrition (PEM) in adults (Lee & Nieman, 2003).

10. THE ROUTE FOR MNT PROVISION

Parenteral Nutrition (PN) may be considered when there is an acute and reversible clinical indication for the use of PN e.g. bowel obstruction amenable to surgery, or ileus. PN should also be considered when the gastrointestinal tract is not functional or accessible and where enteral or oral nutrition support would therefore be impossible or would not be able to sustain hydration or nutritional status. Examples of patients who may require PN are those with short bowel syndrome following extensive intestinal resections for cancer, or HIV-related gastrointestinal disease.

Patients qualifying to receive MNT may require oral nutrition supplementation (ONS) or may require enteral tubefeeding, in or out of hospital (see Figure 1). ONS are intended to supplement an oral diet. Enteral tube-feeds may provide the full nutritional requirement of the patient.

10.1. Oral Nutrition Supplementation (ONS)

ONS should be provided when <u>any</u> of the following criteria is met:

- Patients meet entry criteria for MNT
- Patients cannot achieve or maintain an intake meeting at least 80% of their nutritional requirements with normal oral diet alone.
- Patients require significant texture or consistency modification of oral intake

10.2. Enteral Tube-feeding

Enteral tube-feeding should be provided when <u>any</u> of the following criteria is met:

- Patients meet entry criteria for MNT
- Patients have no contraindications to enteral feeding

- Patients are unable to meet ≥ 80% of their nutritional requirements orally due to increased requirements, inadequate oral intake or symptoms (e.g. dysphagia)
- Oral intake is unsafe or impossible (e.g. structural or mechanical head/facial/dental pathology; reduced state of consciousness; dysphagia with risk of pulmonary aspiration; obstruction of the oropharynx, or any part of the upper gastrointestinal tract)
- Patients require specialised products as per the dietitian's clinical judgement, due to the nature of symptoms or other clinical condition (e.g. short bowel syndrome, malabsorption, organ dysfunction etc)

Where advancing disease can be predicted to compromise or completely exclude oral intake months before the pre-terminal stage occurs, advanced care planning should include the option/possibility of prophylactic feeding tube placement and enteral nutrition support (tube-feeding) in the home setting, at least for certain patient sub-groups (see Table 4).

Enteral tube-feeding may be provided via a nasogastric/nasojejunal, jejunostomy or PEG/PEJ tube depending on the expected duration of enteral feeding. Patients requiring enteral tube-feeding should receive:

- a suitable enteral product which meets nutritional requirements and is regarded as clinically appropriate as prescribed by a registered dietitian
- the necessary consumable items required to deliver the enteral feed (administration sets, syringes etc)

Medically stable patients should not remain in hospital purely for the purposes of continued enteral feeding. Home enteral nutrition is safe, feasible and cost-effective with adequate pre-discharge training and appropriate caregiver support.

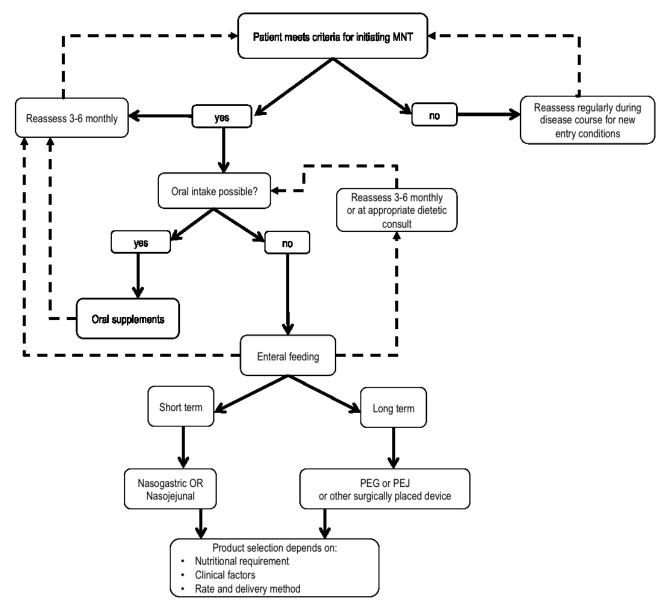


Figure 1. Algorithm for MNT delivery (adapted from A.S.P.E.N. Clinical Guideline 2009)

11. EXIT CRITERIA

Patients may be exited entirely from the MNT benefit when <u>any</u> the following criteria is met:

- BMI ≥ 18.5 20 kg.m⁻²
- Patient has achieved expected/prescribed weight gain goals set by registered dietitian for three consecutive months
- Symptoms or clinical problems which necessitated commencement of MNT have resolved, or improved to the point where MNT is no longer required

For patients on enteral tube-feeds, enteral feeding may be discontinued when <u>any</u> of the following criteria is met:

• Ability to eat an oral diet returns and where oral intake will successfully provide at least 80% of nutritional requirement as evaluated by a dietitian

- Development of new complications or contraindications to tube-feeding as a result of the advancing disease process, necessitating stoppage of enteral feeds
- Risk/burden of continuation exceeds clinical benefit, including patient wishes
- On the recommendation of the dietitian

Patients discontinuing enteral feeding may still require ONS.

| | During Palliative | Care Journey | | | | | | | |
|--------------------------|--|---|---|---|---|---|--|--|---|
| | Cancers | | Dementia | Neurological Disease | Heart Disease | Respiratory Disease | Kidney Disease | Liver Disease | HIV/AIDS and/or TB |
| Nutrition Support PMB | Oral intake possible Oral Nutrition supplements for patients with: Disease-related malnutrition and/or anorexia, early satiety, or symptoms reducing oral | Oral intake not possible Enteral Nutrition for selected patient subgroup: Head and neck CA with severe dysphagia, oesophageal obstruction or | Consultation with dietitian only (see below). | DiseaseEnteralNutrition forselectedpatientsubgroup:Progressiveneurologicaldisease orsevere strokewith severedysphagia(via | Oral Nutrition supplements for patients with: Disease- related malnutrition and/or with significant meal-related dyspnoea and distress | Oral Nutrition supplements for patients with: Disease- related malnutrition and/or with significant meal-related dyspnoea and distress | Oral Nutrition Supplementation for: Patients with disease-related malnutrition who cannot maintain adequate nutritional status within the context of necessary fluid, protein and | Oral Nutrition Supplementation for patients with: Disease-related malnutrition together with metabolic disturbances, anorexia, early satiety, or other symptoms reducing oral | Oral Nutrition Supplementation for patients with: Disease-related malnutrition and/or with anorexia, early satiety, or symptoms reducing oral intake despite dietary |
| | intake despite dietary management by dietitian | tracheo- oesophageal fistula (via nasogastric, pharyngostomy or PEG/PIG/PEJ tube per care plan) | | nasogastric, pharyngostomy or PEG/PIG/PEJ tube per care plan) | negatively impacting on oral intake | negatively impacting on oral intake. | electrolyte restrictions or uraemic symptoms | intake despite dietary management by dietitian | management by dietitian |

Table 4: Nutrition PMBs for palliative and end-of-life care in adults

| Nutrition | Typically, 2-3 | Typically, 1-2 | None | Typically, 1-2 | Typically, 2-3 | Typically, 2-3 | Typically, 2-3 | Typically, 2-3 | Typically, 2-3 |
|----------------|-------------------|--------------------|------|------------------|------------------|------------------|---------------------|----------------------|--------------------|
| Products to be | units*per day of: | litres per day of: | | litres per day | units* per day | units* per day | units* per day of: | units* per day of: | units* per day of: |
| provided as | A fat-free, high | A standard | | of: | of: | of: | A high energy or | A fat-free, high | A fat-free, high |
| part of PMB | energy sip feed | lactose-free | | A standard, | A fat-free, high | A high fat, high | energy dense sip | energy sip feed | energy sip feed |
| | OR | enteral feed | | lactose free | energy sip | energy sip | feed (with or | OR | OR |
| NOTE for all: | A high energy or | (with or without | | enteral feed | feed | feed | without fibre) | A high energy or | A high energy or |
| 1. For In- or | energy dense | fibre) | | (with or without | OR | OR | OR | energy dense sip | energy dense sip |
| Out-of- | sip feed (with or | OR | | fibre) | A high energy | A high protein | A low electrolyte. | feed | feed (with or |
| hospital use | without fibre) | A high energy | | OR | or energy | sip feed (with | low mineral sip | OR | without fibre) |
| 2. Product | OR | enteral feed | | A high energy | dense sip feed | or without | feed | A high energy, | OR |
| choice will | A high energy or | (with or without | | enteral feed | (with or without | fibre) | OR | moderate or high | A high energy, |
| depend on GIT | energy dense, | fibre) | | (with or without | fibre) | OR | A protein- | protein sip feed | moderate or high |
| and other | moderate or | OR | | fibre) | OR | A low | restricted sip feed | (with or without | protein sip feed |
| associated | high protein sip | A high energy or | | OR | A high, energy, | electrolyte sip | OR | fibre) | OR |
| symptoms | feed | energy dense, | | A high energy | moderate or | feed | other product as | OR | A semi-elemental |
| and clinical | OR | moderate or | | or energy | high protein sip | OR | prescribed for | A low electrolyte | sip drink |
| circumstances | A semi- | high protein | | dense, | feed | other product | specific | sip feed | OR |
| | elemental sip | enteral feed | | moderate or | OR | as prescribed | indications (such | OR | other product as |
| | drink | (with or without | | high protein | A low | for specific | as glucose | A semi-elemental | prescribed for |
| | OR | fibre) | | enteral feed | electrolyte sip | indications | control, | sip drink | specific |
| | other product as | OR | | (with or without | feed | (such as | gastrointestinal | OR | indications (such |
| | prescribed for | An immune- | | fibre) | OR | glucose | symptoms or | other product as | as glucose |
| | specific | modulatory feed | | OR | other product | control, | other organ | prescribed for | control, |
| | indications | OR | | other product | as prescribed | gastrointestinal | dysfunction) by a | specific indications | gastrointestinal |
| | (such as | A feed for | | as prescribed | for specific | symptoms or | dietitian | (such as glucose | symptoms or |
| | glucose control, | oncology | | for specific | indications | other organ | OR | control, | other organ |
| | gastrointestinal | patients | | indications | (such as | dysfunction) by | An equivalent | gastrointestinal | dysfunction) by a |
| | symptoms or | OR | | (such as | glucose | a dietitian | powdered | symptoms or other | dietitian |
| | other organ | other product as | | glucose | control, | OR | nutritionally | organ dysfunction) | OR |
| | dysfunction) by | prescribed for | | control, | gastrointestinal | An equivalent | complete medical | by a dietitian | An equivalent |
| | a dietitian | specific | | gastrointestinal | symptoms or | powdered | nutrition | OR | powdered |
| | OR | indications (such | | symptoms or | other organ | nutritionally | supplement (food | | nutritionally |

| supple (food f medica purpos AND An L | for special a dietitia cal OR | n quivalent ed ally | An equivalent powdered nutritionally complete medical nutrition supplement | powdered nutritionally complete medical nutrition supplement | (food for special medical purposes)# | | nutrition supplement (food for special medical purposes)# | medical purposes)# |
|--|---|---|--|---|--|--|--|--|
| be add | medical purpose AND An L-g supplem be adde | nutrition lent r special s)# lutamine lent may d to any | (food for special medical purposes)# | (food for special medical purposes)# | | | | |
| * a unit in aquivalant to 1 | aboveme product | or 125-250ml of equivalent rec | | | a cimilar putritional | luoluo | | |
| | · · | | | | - | | - | |
| | times a week while in per month as out-patie | | • 3-7 times a week while in | • 3-7 times a week while in | • 3-7 times a week while in | 3-7 times a week while in hospital | • 3-7 times a week while in hospital | 3-7 times a week while in hospital |
| review and ris | agement of nutrition su v for continued indicati sk-benefit assessment on support and sympto | t of symptom | of hospital • 1-2 per month as out-patient (management | hospital • 1-2 per month as out-patient (management | hospital • 1-2 per month as out-patient (management | 1-2 per month as out-patient (management of nutrition support, | 1-2 per month as out-patient (management of nutrition support, | 1-2 per month as out-patient (management of nutrition support, |

| | management, and to provide relevant information to global care plan) | carer support/education (protected mealtimes, food enrichment, consistency modification, hydration etc) (Burgos, <i>et al</i> , 2017). | of nutrition support, review for continued indication for and risk-benefit assessment of nutrition support and symptom management, and to provide relevant information to global care plan) | of nutrition support, review for continued indication for and risk- benefit assessment of nutrition support and symptom management, and to provide relevant information to global care plan) | of nutrition support, review for continued indication for and risk- benefit assessment of nutrition support and symptom management, and to provide relevant information to global care plan) | review for continued indication for and risk-benefit assessment of nutrition support and symptom management, and to provide relevant information to global care plan) (Toigo, <i>et al</i> , 2000a, Toigo, <i>et al</i> , 2000b). | review for continued indication for and risk-benefit assessment of nutrition support and symptom management, and to provide relevant information to global care plan) (Plauth, Cabré, Riggio, Assis- Camilo, Pirlich, Kondrup, DGEM (German Society for Nutritional Medicine), Ferenci, Holm, Vom Dahl, Müller, Nolte & ESPEN (European Society for Parenteral and Enteral Nutrition), 2006). | review for continued indication for and risk-benefit assessment of nutrition support and symptom management, and to provide relevant information to global care plan) |
|--------------------------|---|---|---|--|--|--|---|--|
| End-of-life Care | | | | | | | | |
| Nutrition Support PMB | On a case basis, enteral nutrition (tube-feeding) <u>already previously in</u> <u>place</u> may be continued until the end of life according to patient wishes and symptoms | | On a case basis, enteral nutrition (tube-feeding) <u>already previously</u> <u>in place</u> may be continued until the | None | None | None | None | None |

| Nutrition Products to be provided as part of PMB | None, unless above applies to selected cases (Arends, <i>et al</i> , 2017a, Arends, <i>et al</i> , 2017b). | None | end of life according to patient wishes and symptoms None, unless above applies to selected cases (Burgos, <i>et al</i> , 2017). | None | None | None | None | None |
|---|--|------|--|------|------|------|------|------|
| PMB out- patient consults with dietitian | 1 | None | 1 | 1 | | | | |

where commercial, ready-to-use sip or enteral feeds are substituted for powdered commercial oral supplements, it is essential that the powdered substitute be a nutritionally complete medical nutrition supplement (food for special medical purposes or food for special dietary purposes) containing a full range of micronutrients prescribed by a dietitian.

References

Aaldriks, A.A., van der Geest, L.G., Giltay, E.J., le Cessie, S., Portielje, J.E., Tanis, B.C., Nortier, J.W. & Maartense, E. (2013). Frailty and malnutrition predictive of mortality risk in older patients with advanced colorectal cancer receiving chemotherapy. *Journal of Geriatric Oncology*, 4(3): 218-226.

Arends, J., Baracos, V., Bertz, H., Bozzetti, F., Calder, P.C., Deutz, N.E.P., Erickson, N., Laviano, A., Lisanti, M.P., Lobo, D.N., McMillan, D.C., Muscaritoli, M., Ockenga, J., Pirlich, M., Strasser, F., de van der Schueren, M., Van Gossum, A., Vaupel, P. & Weimann, A. (2017a). ESPEN expert group recommendations for action against cancer related malnutrition. *Clinical Nutrition (Edingburg, Scotland)*, 36:1187-1196.

Arends, J., Bachmann, P., Baracos, V., Barthelemy, N., Bertz, H., Bozzetti, F., Fearon, K., Hütterer, E., Isenring, E., Kaasa, S., Krznaric, Z., Laird, B., Larsson, M., Laviano, A., Mühlebach, S., Muscaritoli, M., Oldervoll, L., Ravasco, P., Solheim, T., Strasser, F., de van der Schueren, M. & Preiser, J.C. (2017b). ESPEN guidelines on nutrition in cancer patients. *Clinical Nutrition (Edingburg, Scotland)*, 36(1): 11-48.

A.S.P.E.N. Board of Directors Clinical Guidelines for the Use of Parenteral and Enteral Nutrition in Adult and Pediatric Patients (2009) *JPEN Journal of Parent Enteral Nutrition*, 33(3):255-9.

Burgos, R., Bretón, I., Cereda, E., Desport, J.C., Dziewas, R., Genton, L., Gomes, F., Jésus, P., Leischker, A., Muscaritoli, M., Poulia, K.A., Preiser, J.C., Van der Marck, M., Wirth, R., Singer, P. & Bischoff, S.C. (2017). ESPEN guideline clinical nutrition in neurology. *Clinical Nutrition (Edingburg, Scotland)*, 5614(17): 30318-7.

Correia, M.I. & Waitzberg, D.L. (2003). The impact of malnutrition on morbidity, mortality, length of hospital stay and costs evaluated through a multivariate model analysis. *Clinical Nutrition (Edingburg, Scotland)*, 22(3): 235-239.

Druml, C., Ballmer, P.E., Druml, W., Oehmichen, F., Shenkin, A., Singer, P., Soeters, P., Weimann, A. & Bischoff, S.C. (2016). ESPEN guideline on ethical aspects of artificial nutrition and hydration. *Clinical Nutrition (Edingburg, Scotland)*, 35(3):545-556.

Filteau S, PrayGod G, Woodd SL, Friis H, Heimburger DC, Koethe JR< Kelly P, Kasonka L, Rehman AM. (2017) Nutritional status is the major factor affecting grip strength of African HIV patients before and during antiretroviral treatment. *Tropical Medicine & International Health* 22(10): 13-2-1313

Freijer, K., Bours, M.J., Nuijten, M.J., Poley, M.J., Meijers, J.M., Halfens, R.J. & Schols, J.M. (2014b). The economic value of enteral medical nutrition in the management of disease-related malnutrition: a systematic review. *Journal of the American Medical Directors Association*, 5(1):17-29.

Freijer, K., Tan, S.S., Koopmanschap, M.A., Meijers, J.M., Halfens, R.J. & Nuijten, M.J. (2013a). The economic costs of disease-related malnutrition. *Clinical Nutrition (Edingburg, Scotland)*, 32(1): 136-141.

Fukuda, Y., Yamamoto, K., Hirao, M., Nishikawa, K., Maeda, S., Haraguchi, N., Miyake, M., Hama, N., Miyamoto, A., Ikeda, M., Nakamori, S., Sekimoto, M., Fujitani, K. & Tsujinaka, T. (2015). Prevalence of malnutrition among gastric cancer patients undergoing gastrectomy and optimal preoperative nutritional support for preventing surgical site infections. *Annals of Surgical Oncology*, 22(3):778-785.

Gellrich, N.C., Handschel, J., Holtmann, H. & Kruskemper, G. (2015). Oral cancer malnutrition impacts weight and quality of life. *Nutrients*, 7(4): 2145-2160.

Jensen, G.L., Compher, C., Sullivan, D.H. & Mullin, G.E. (2013). Recognizing Malnutrition in Adults: Definitions and Characteristics, Screening, Assessment, and Team Approach. *Journal of Parenteral and Enteral Nutrition*, 37(6): 802-807.

Lacey, K. & Pritchett, E. (2003). Nutrition Care Process and Model: ADA adopts road map to quality care and outcomes management. *Journal of the American Dietetic Association,* 103(8): 1061-1072.

Laviano A, Di Lazzaro Giraldi G, Koverech A. (2016) Does nutrition support have a role in managing cancer cachexia? *Current opinion in supportive and palliative care*, 10(4): 288-292

Lee, R.D. & Nieman, D.C. (2003). Nutritional Assessment. 3rd ed. Boston, MA: McGraw Hill.

Maasberg, S., Knappe-Drzikova, B., Vonderbeck, D., Jann, H., Weylandt, K.H., Grieser, C., Pascher, A., Schefold, J.C., Pavel, M., Wiedenmann, B., Sturm, A. & Pape, U.F. (2017). Malnutrition predicts clinical outcome in patients with neuroendocrine neoplasias. *Neuroendocrinology*, 104(1): 11-25.

Mahan, L.K., Escott-Stump, S. & Raymond, J.L. (2012). *Krause's Food and the Nutrition Care Process*. 13th ed. St. Louis, Missouri: Elsevier/Saunders.

Martin, L., Senesse, P., Gioulbasanis, I., Antoun, S., Bozzetti, F., Deans, C., Strasser, F., Thoresen, L., Jagoe, R.T., Chasen, M., Lundholm, K., Bosaeus, I., Fearon, K.H., & Baracos, V.E. (2015). Diagnostic criteria for the classification of cancer-associated weight loss. *Journal of Clinical Oncology*, 33(1): 90-99.

Norman, K., Pichard, C., Lochs, H. & Pirlich, M. (2008). Prognostic Impact of Disease-related malnutrition *Clinical Nutrition (Edingburg, Scotland)*, 27(1):5-15.

Plauth, M., Cabré, E., Riggio, O., Assis-Camilo, M., Pirlich, M., Kondrup, J., DGEM (German Society for Nutritional Medicine), Ferenci, P., Holm, E., Vom Dahl, S., Müller, M.J., Nolte, W. & ESPEN (European Society for Parenteral and Enteral Nutrition). (2006). ESPEN Guidelines on Enteral Nutrition: Liver disease. *Clinical Nutrition (Edingburg, Scotland)*, 25(2): 285–294.

Pressoir, M., Desné, S., Berchery, D., Rossignol, G., Poiree, B., Meslier, M., Traversier, S., Vittot, M., Simon, M., Gekiere, J.P., Meuric, J., Serot, F., Falewee, M.N., Rodrigues, I., Senesse, P., Vasson, M.P., Chelle, F., Maget, B., Antoun, S. & Bachmann, P. (2010). Prevalence, risk factors and clinical implications of malnutrition in French Comprehensive Cancer Centres. *British Journal of Cancer*, 102(6): 966-971.

Shpata, V., Prendushi, X., Kreka, M., Kola, I., Kurti, F. & Ohri, I. (2014). Malnutrition at the Time of Surgery Affects Negatively the Clinical Outcome of Critically III Patients with Gastrointestinal Cancer. *Medical Archives*, 68(4): 263-267.

Skipper, Annalynn (2009). <u>Advanced Medical Nutrition Therapy Practice</u>. Jones & Bartlett Learning. p. 50. <u>ISBN 9780763742898</u>.

Toigo, G., Aparicio, M., Attman, P.O., Cano, N., Cianciaruso, B., Engel, B., Fouque, D., Heidland, A., Teplan, V. & Wanner, C. (2000a). Expert Working Group report on nutrition in adult patients with renal insufficiency (part 1 of 2). *Clinical Nutrition (Edingburg, Scotland)*, 19(3): 197–207.

Toigo, G., Aparicio, M., Attman, P.O., Cano, N., Cianciaruso, B., Engel, B., Fouque, D., Heidland, A., Teplan, V. & Wanner, C. (2000b). Expert Working Group report on nutrition in adult patients with renal insufficiency (part 2 of 2). *Clinical Nutrition (Edingburg, Scotland)*, 19(4): 281-291.

Volkert, D., Chourdakis, M., Faxen-Irving, G., Frühwald, T., Landi, F., Suominen, M.H., Vandewoude, M., Wirth, R. & Schneider, S.M. (2015). ESPEN guidelines on nutrition in dementia. *Clinical Nutrition (Edingburg, Scotland)*, 34(6):1052-1073.