

Practical considerations for nutritional management of non-ICU COVID-19 patients in hospital

The practical considerations contained in this document are intended for use during the response to the coronavirus pandemic and may not be considered optimal outside of the pandemic. The pragmatic approaches outlined are intended to complement local protocols for nutritional care that may need to be adapted for use at this time. How challenges to providing nutritional care can be met will differ depending on local surge, availability and organisation of resources such as staff, skill mix and personal protective equipment (PPE).

Introduction

Most patients admitted to hospital with COVID-19 disease present with severe inflammation and disease-related anorexia leading to a major reduction in food intake.¹ Some of these patients may have experienced symptoms at home for several days prior to admission.

Immunocompromised patients, older people, individuals with polymorbidity and malnourished individuals appear to have the worst outcomes and higher mortality from COVID-19 disease.²

Prevention, diagnosis and treatment of malnutrition should be routinely included in the management of COVID-19 patients both in hospital and after discharge.² Appropriate nutritional assessment and treatment reduces complications and improves clinical outcomes in hospitalised patients.²

Some patients will require treatment in the intensive care unit (ICU). Refer to guidance developed by the British Dietetic Association (BDA) Critical Care Specialist Group (CCSG) for ICU patients; [Guidance on the management of nutrition and dietetic services during the COVID-19 pandemic](#), [COVID-19 Best Practice Guidance: Enteral Feeding in Prone Position](#), [Best Practice Guidance: Bolus Enteral Feeding](#) and [Nutritional recovery and rehabilitation after critical illness](#).

Not all patients admitted to hospital with confirmed COVID-19 disease will receive critical care input but many may either require prolonged admission in an acute ward with likely respiratory support, or have accelerated care through an early supported discharge pathway. Providing optimal nutrition support and hydration plays a vital role in the recovery and rehabilitation of all these patient groups.

Aim

The aim of this document is to provide practical considerations for the nutritional management of non-ICU COVID-19 patients in hospital. As COVID-19 is a new disease, limited data are available to produce evidence-based guidance for this patient group at this time. Therefore, this document has been developed using recently published international guidance on the nutritional management of patients with COVID-19^{2,3}, evidence for the nutritional management of other respiratory conditions such as chronic obstructive pulmonary disease⁴ and clinical experience. It aims to outline some practical considerations and signpost other relevant resources relating to nutrition support, developed in response to the pandemic, to facilitate good clinical practice and continuity of care.

Nutritional management of COVID-19 patients

Nutritional screening - on admission screen for risk of malnutrition and repeat weekly⁵

- Although some patients admitted with COVID-19 are underweight, malnourished or at risk of malnutrition due to pre-existing conditions, many including those who are overweight, may be at risk of developing malnutrition as a result of COVID-19 disease causing an acute decline in nutritional intake prior to admission or during their hospital stay
- Where possible and where resources permit, continue to screen for risk of malnutrition as soon as possible following admission, using the ‘Malnutrition Universal Screening’ Tool (‘MUST’) or a local validated nutritional screening tool⁶
- Where screening is undertaken but it is not possible to obtain physical measures of weight or height, then there are a series of alternative measures that can be used as part of ‘MUST’⁶
- If a patient with COVID-19 disease has been or is unable to consume anything orally for 5 days then they should be classed as at high risk of malnutrition and in need of nutritional support.⁶
- In view of the likelihood of a sharp decline in food intake due to the myriad of symptoms that can affect nutritional intake during severe COVID-19 disease, encourage members of the whole multi-disciplinary team (MDT) to be on the look-out for patients with eating difficulties so that these can be addressed to optimise recovery (e.g. a Physiotherapist to ask about appetite whilst doing therapy). Utilising existing contacts with patients to seek information may help where PPE is limited

Once malnutrition risk has been established existing local policies and protocols/algorithms for the management of patients at risk of malnutrition can still be applied. Protocols may need to be adapted to take account of the challenges/barriers to providing nutrition support during the coronavirus pandemic⁷. This document can be used to stimulate discussions with hospital managers or ward staff to facilitate change. The Australasian Society of Parenteral and Enteral Nutrition (AuSPEN) guidance on the [Nutrition Management for Critically and Acutely Unwell Hospitalised Patients with COVID-19 in Australia and New Zealand](#)³ provides a good example of an algorithm that could be used for the nutritional care of ward based patients with COVID-19. See also UK examples included in the Appendix. In the UK local pathways should include:

Low risk of malnutrition:	Medium risk of malnutrition:	High risk of malnutrition:
<ul style="list-style-type: none"> • Rescreen weekly 	<ul style="list-style-type: none"> • Offer high energy, high protein menu, snacks and drinks e.g. full fat milk • Offer assistance with feeding if required • Keep a food and drink record to monitor intake • Oral intake is severely compromised in most patients in hospital with COVID-19 disease¹. Consider offering ONS x 2 per day to patients consuming less than 50% of food and drink offered*. Low volume, high protein ONS may be useful in patients who are breathless and struggling with higher volumes • If modified consistency of food and fluids is required due to swallow impairment follow the advice of Speech and language therapy and refer to dietitian • Patients should be rescreened weekly or if clinical condition changes 	<p>As for medium risk PLUS:</p> <ul style="list-style-type: none"> • Refer to dietitian for assessment and individualised care plan • Patients with little or no food intake for >5 days are at risk of refeeding syndrome⁵. Check biochemistry and follow local policy • Nutrition support may need to be escalated to enteral tube feeding if dependence on oxygen therapy reduces capacity for oral intake, these patients should be referred to Dietetics • Enteral tube feeding should be implemented when nutritional needs cannot be met by the oral route e.g. if oral intake is expected to be impossible for more than 3 days or expected to be less than 50% of estimated energy requirements for more than 5-7 days^{2,3}
<p>For all patients: The rapid deterioration in intake that can occur in COVID-19 patients may not be picked up at routine screening timepoints. Consider a whole team approach to encouraging nutrition conversations, observing meals eaten/left to identify those low risk on admission who may quickly deteriorate</p>		

ONS - oral nutritional supplement. *Pragmatic approach based on guidelines for COVID-19 patients: ESPEN recommendation to give ONS to provide at least 400 kcal/day and ≥30g protein/day when oral intake is insufficient to meet estimated nutritional requirements² and AuSPEN guidelines to consider default provision of ONS for all patients identified at medium or high risk of malnutrition³.

Many patients with COVID-19 have pre-existing co-morbidities including cardiovascular disease and diabetes. Poorly controlled blood glucose has an adverse impact on outcome. Patients with complex needs/multiple co-morbidities that require different dietary interventions should be referred to dietetics e.g. those with renal impairment or poorly controlled blood glucose levels, particularly if they are started on oral nutritional supplements (ONS).

Dietetic Management

- Patients should only be seen face to face by Dietitians who have received training in, and have access to, appropriate PPE in line with their trust policy
- Remote working should be explored where possible. Consider how to assess and monitor patients remotely. This can be challenging due to the increased pressures on nursing staff which may limit the information that can be accessed in this way. Consider the use of digital technology e.g. mobile phones to communicate directly with patients, or with staff using ward tablets
- Many patients with COVID-19 disease are overweight or obese. Restriction of energy intake with the aim of reducing body weight is not appropriate during acute illness or recovery due to the risk of reducing lean body mass, strength and function. This is particularly important in patients aged >65 years.⁸ Patients, carers and healthcare staff should be made aware of this
- Patients started on ONS during hospital admission should ideally have dietetic review to establish if ONS should be continued after discharge. Refer to local pathways/policy. Procedures may need to be reviewed to take account of increased demand for dietetic input and rapid discharge (see discharge section below and examples in appendices)
- Review of menu provision may be needed in light of the barriers to achieving adequate nutrition and hydration (see below)
- Ensure timely handover of ICU patients from ICU dietitian to ward dietitian. Liaise with MDT to ensure nasogastric tubes (NGT) are not prematurely removed. Refer to BDA Critical Care Specialist Group guidance [here](#)
- Set appropriate goals of nutritional treatment e.g. improvement in intake, weight maintenance, preservation of muscle/function, and monitor
- Involve the patient and family in discussions about nutritional care where possible. It is important that the adverse impact of rapid weight loss (especially muscle loss) on recovery is understood as some may perceive weight loss as a benefit in patients who are/were overweight.

Energy and protein targets

Patients in hospital with COVID-19 disease are likely to have increased energy and protein needs.³ Due to the catabolic nature of the illness patients may develop significant deficits in lean mass which will need to be replenished especially in the recovery phase. The BDA Parenteral and Enteral Nutrition Specialist Group (PENG) guidelines for estimating energy and protein needs should be followed. The European Society for Clinical Nutrition and Metabolism (ESPEN) have also made specific recommendations for estimating requirements for certain patient groups²:

Patient group	Energy	Protein	Comments
Older people	30 kcal/kg BW/d	1 g/kg BW/d	Consider actual or adjusted BW. Individually adjust for nutritional status, PAL, disease state and tolerance. Protein target of 1.2-1.5g/kg/d suggested for older people with acute or chronic illness except where GFR <30ml/min/1.73m ² in non-dialysis older patients. ^{9,10}
Polymorbid patients (aged >65 years)	27 kcal/kg BW/d (TEE)	≥1 g/kg/BW/d*	Consider actual or adjusted BW
Severely underweight polymorbid patients	30 kcal/kg BW/d (REE)	Not specified	High risk of refeeding syndrome therefore progress to target with caution

BW body weight, PAL physical activity level, GFR glomerular filtration rate, TEE total energy expenditure, REE resting energy expenditure.
*Polymorbid medical inpatients.

Refer to PENG guidelines for information on estimating nutritional requirements for patients at the extremes of Body Mass Index (BMI), particularly patients with BMI > 30 kg/m². Estimating nutritional requirements are a starting point, the application of clinical judgement and monitoring are essential. Opportunities for monitoring may be limited during this time and should be considered when adapting protocols.

Oral nutrition support: barriers to achieving adequate oral nutrition and hydration and suggested actions

Some of the common symptoms of COVID-19 disease may impact on oral intake and can include:

- Shortness of breath/fatigue – it may be more difficult to swallow and eat if a patient is short of breath or fatigued. Offer soft/moist food and encourage little and often⁴
- COVID-19 patients may be younger and appear better nourished than usual inpatients and so are assumed to be independent/not need assistance with eating and drinking, encourage MDT to look out for poor intake as outlined above
- Loss of smell and taste¹¹ – offer foods with a strong taste
- Dry mouth – this can be a particular problem if a patient is receiving oxygen therapy or has pyrexia. Offer high energy, high protein soft/moist foods and drinks, suggest patients suck sugar-free fruit sweets between meals⁴
- Dysphagia may go un-noticed due to coughing as a result of COVID-19 infection. Pay particular attention to patients who have transferred from ICU who may have post-extubation dysphagia. Consider referral to Speech and Language Therapist.

Consider adapting existing dietetic resources to provide information to patients/family regarding taste changes, dry mouth, eating difficulties, diarrhoea. Electronic resources from the BDA Older People Specialist Group, [Nutrition and Diet Resources](#) (NDR) and the [Malnutrition](#) Pathway could be provided via tablets and phones when face to face contacts are limited. Consider providing access to dietetic resources for the MDT on the intranet or as posters.

There are also likely to be non-patient related challenges to providing nutrition and hydration¹²:

- Reduced volunteer mealtime support
- Reduced access to snacks, knowledge about food preferences due to lack of visitors
- Reduced patient contacts due to PPE requirements
- In order to comply with infection control guidance many hospitals may have had to adapt the provision of food services. This may include use of disposable plates and cutlery, changes in food ordering systems, meals served by staff unfamiliar with meal service. This may lead to more limited meal choices, challenges with ordering and getting special menus (e.g. modified consistency, halal, gluten free) to the right patients
- Limited staff in catering departments and reduced access to food suppliers may limit hospital menus and choices reducing patient's uptake of meals.

Suggested actions to mitigate challenges:

- Re-affirm the fundamental importance of good nutrition and hydration through ward leadership
- Co-ordinate with ward staff and MDT to use every opportunity to prompt eating and drinking and consumption of ONS. A good example is the [Sharing Patient Assessments Cuts Exposure for Staff \(SPACES\) approach](#) developed by a multidisciplinary team at Glenfield Hospital, Leicester and adopted by the British Thoracic Society
- Implement snack rounds or snack boxes for patient besides. Can snacks and milk be routinely provided at ward level to meet needs for 'little and often'?

- Review menu provision with catering department to ensure easy to chew, moist, liquid, soft options are high energy and high protein
- With a higher proportion of patients likely to require nutrition support it is important to maintain adequate stock levels of ONS and enteral feeding products. Regular stock checks and creation of minimum stock levels for wards may help to avoid issues
- Consider regular case-finding by dietitians through liaison with ward staff/MDT meetings to identify patients who are struggling to eat and drink or at risk of malnutrition but be sensitive to the demands being placed on staff particularly those who are working in a less familiar environment.

Enteral Tube Feeding

- Enteral tube feeding should be implemented when nutritional needs cannot be met by the oral route e.g. if oral intake is expected to be impossible for more than 3 days or expected to be less than 50% of estimated energy requirements for more than 5-7 days^{2,3}
- Some patients may need additional respiratory support in the form of Non Invasive Ventilation (NIV) or Continuous Positive Airway Pressure (CPAP). Refer to the British Association for Parenteral and Enteral Nutrition (BAPEN) recommendations for '[Route of Nutrition Support in Patients requiring NIV and CPAP during the COVID-19 response](#)' for more guidance in this patient group
- The BDA, BAPEN, National Nurses Nutrition Group (NNNG), Royal College of Speech and Language Therapists, Royal College of Physicians, British Society of Gastroenterology, Intercollegiate General Surgical Group, Royal College of Nursing and the American Society for Parenteral and Enteral Nutrition all consider the placement of NGT/nasojejunal tubes as an aerosol generating procedure. The latest advice from [Public Health England \(PHE\)](#) can be found at . However please note that at the time of writing PHE does not list NGT placement as an AGP. BAPEN has written to PHE and the Secretary of State for Health and Social Care to request that this is urgently reviewed to enable the appropriate PPE to be used by all healthcare staff involved.^{13,14} Please check the BAPEN website for updates on this matter.
- BAPEN also advise that “in “step down” facilities for recovering Covid-19 patients, it is acceptable to use pH to check [NGT] position rather than x-ray. If routine x-ray is used, it should be possible to perform the “Four-point check” tube as lung clearance should have occurred by this point*.” Refer to BAPEN’s document '[COVID-19 and Enteral Tube Feeding Safety](#)'¹⁵
- Pump feeding should continue to be the preferred feeding method where clinically indicated especially in patients who are receiving post-pyloric feeding or have gastrointestinal intolerances
- Alternative feeding methods should be considered if limited feeding pumps available due to the increased number required for critical care (see guidance from the National Nutrition Nurses Group¹²) however it has been forecast that there should be adequate pumps to cover the needs of those requiring a pump for safe, continuous pump assisted feeding. If using bolus or gravity feeding please refer to [NNNG guidance](#) and/or manufacturers guidelines. See also guides for bolus feeding developed by [Nutricia](#) or [Abbott Nutrition](#).

Provisions for feeding pumps

England	Equipment requirements should be sourced locally by each region before arrangements made to seek pumps from the national supply. Further information on the National Programme are set out in this document .
Wales	Equipment requirements should be sourced from local contracted supplier
Scotland	Additional pumps have been centrally distributed to all sites to meet upscale of ICU beds and other COVID-19 related services. If further resources are required please contact Rashida Rasool-Gordon, NHS National Services Scotland (rashida.rasool-gordon@nhs.net)
Northern Ireland	Equipment requirements should be sourced from local contracted supplier

Ensure continuity of nutritional care post-discharge

Patients should receive information about how to access ongoing food supplies/food deliveries especially where help from family is not available and patients need to be shielded. In some areas hospitals are providing discharge food packs, in other areas local authorities are providing support.

Discharge on oral nutrition support

Patients should be re-screened for malnutrition using 'MUST' or an alternative local validated tool before discharge and ideally reviewed by a dietitian to establish if ongoing oral nutrition support is required, to set goals and provide education and advice. Local policies for discharge of patients requiring on-going oral nutrition support in the community can still be applied but may need to be adapted to meet increased demand or where discharge is rapid.

Refer to advice from the BDA Optimising Nutrition Prescribing Specialist Group (accessible [here](#)) which includes:

- Collaborative working between acute and community dietetic teams to agree local patient care pathways, referral processes and handover of COVID-19 patients
- Liaison with Prescribing Support Dietitians and/or Clinical Commissioning Groups or Health Boards to ensure local formulary lists required products e.g. concentrated high protein ONS or is flexible in case of supply issues (although none currently anticipated)
- If discharging patients with advice to use ONS in powder form ensure it is clinically appropriate and suitability is established before discharge using the following checklist:
 - Does the patient/carer have the physical ability to make up a powder ONS as directed on the package?
 - Does the patient/carer have access to both a fridge and milk (fresh or UHT)?
 - Does the patient have adequate storage for the powder ONS?
- Implementation of fast track telephone reviews for adult and paediatric patients who need ongoing nutrition support and nutritional product prescriptions.

Ensure ONS prescription requests meet the Advisory Committee on Borderline Substances (ACBS) indications, goals have been set and arrangements are in place for review either by community dietetic services or GP. If there is ongoing concern regarding breathlessness, fatigue or if they are using a mask or nebulisers regularly then a ready-to-drink, low volume ONS could be considered to reduce the time/effort needed to prepare and consume the ONS. Refer to local infection control policies regarding discharge, where possible provide a supply of ONS and information sheets to take home.

Resources designed specifically for patients recovering from COVID-19 disease are available from the [Malnutrition Pathway](#) and can be accessed directly by patients and carers. Resources can be downloaded and emailed to patients if infection control guidance precludes provision of information sheets at discharge. See also electronic resources available from [NDR](#) and the BDA Older People Specialist Group.

Patients should be advised on how to titrate ONS according to appetite and progress (e.g. body weight, return to normal function), the importance of exercise during recovery and when and how to seek help if they experience ongoing problems with appetite and weight loss. [BAPEN's self-screening website](#) is also accessible to patients and carers as is the [Patients Association Nutrition Checklist](#).

Discharge on home enteral nutrition

Refer to advice from the BDA Optimising Nutrition Prescribing Specialist Group (accessible [here](#)) which includes information about how to ensure timely supply of enteral feeds and information on prescribing systems. Considerations for patients being discharge on home enteral nutrition (HEN) support are outlined in the NNNG document '[Practical Advice and Guidance for Management of Nutritional Support During COVID-19](#)'.

Further information for patients on (HEN) has been developed by PENG, the NNNG and PINNT and can be found on the BDA website [Information for patients receiving home enteral nutrition \(HEN\)](#)

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Appendix: Examples of nutritional care pathways in the UK for hospital patients with COVID-19 disease.

The examples included show a variety of approaches to meeting patients nutritional needs and are provided here to aid others in developing pathways that optimise nutritional care whilst taking account of local needs and resources. The pathways differ in their focus and target audience; some aimed at staff managing nutritional care in hospital wards only or ICU and hospital wards, and one aimed at inpatients with advice for after discharge home.

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- [Yeovil - COVID19 Nutrition Pathway](#)
- [ABUHB - COVID19 Standard Nutrition Advice](#)
- [Homerton - COVID19 Eating drinking on recovery](#)

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We also gratefully acknowledge contributions from Eleri Wright (Field Hospitals, Swansea Bay University Health Board), David Gray (St Thomas' Hospital), Alice Connolly (Homerton hospital), Liz Anderson (Stoke Mandeville Hospital) and Wendy-Ling Ralph (William Harvey Hospital) on behalf of the NNNG, and Dr Barry Jones (Chair, Independent Advisory Committee of BAPEN) and Dr Dan Rogers (BAPEN Secretary) on behalf of BAPEN.

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