



Nutrition and Hydration Policy Support Handbook For Acute Adult Inpatient Setting

Dietitians Association of Australia

Nutrition Support Interest Group - South Australia Chapter

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About this manual:

This policy support handbook was developed for dietitians and other health care professionals who need a lobbying tool or practical resource for implementing nutrition and hydration policies and procedures in Australian acute care inpatient settings.

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Note

The information in this handbook cannot be extrapolated to infant or paediatric patients, staff or visitors. Obesity, overnutrition and micronutrient deficiencies have not been included in this document. This handbook is not intended as a standalone document or policy. It should be used in consultation with local policy and up-to-date evidence-based guidelines.

This information has been independently reviewed by the Dietitians Association of Australia. For expert nutrition and dietary advice contact an Accredited Practising Dietitian (APD). Visit 'Find an Accredited Practising Dietitian' at www.daa.asn.au or call 1800 812 942.

Executive summary

Healthcare organisations have a responsibility to meet the nutrition and hydration requirements of their patients. Australian and European organisations recommend hospitals have policies aimed at optimising patient nutrition and hydration.

The aim of this policy support handbook is to provide guidelines for Dietitians and other health professionals to develop local or state level nutrition and hydration policies and/or standards. It is anticipated that this will improve the consistency of nutrition and hydration care for inpatients of acute adult hospitals.

Current evidence and clinical guidelines were collated by a small working party of South Australian (SA) acute care Dietitians to develop this handbook. A number of key stakeholders were consulted as part of the process including Dietitians Association of Australia (DAA), members of the DAA SA Chapter Nutrition Support Interest Group and National DAA Nutrition Support Interest Group, and SA Senior Medical, Nursing and Speech Pathology Clinicians.

Key areas identified that are recommended to be covered by local or state nutrition and hydration policies include:

- Clinical governance, including a Nutrition Steering Committee
- Nutrition care planning throughout hospital admission
- Nutrition risk and malnutrition screening
- Formal nutrition and hydration assessment where nutrition risk is identified
- Provision of appropriate, nutritionally adequate and safe food, fluids and artificial nutrition support
- Appropriate meal time environment and assistance to eat and drink where required
- Monitoring to ensure ongoing provision of adequate nutrition and hydration
- Discharge planning to include clear nutrition and hydration care plans
- Education and training to ensure adequate skills for those delivering nutrition and hydration care
- Partnering and communication with patients and consumer access to nutrition information
- Evaluation, with partnering and communication of results to key stakeholders

Documentation and clinical handover are important aspects of all of the above areas to ensure appropriate and safe nutrition and hydration care is provided and communicated to minimise clinical risk.

This document is intended to summarise key research and current evidence for nutrition and hydration care relevant to the acute hospital setting.

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Abbreviations

ACHS	Australian Council on Healthcare Standards
ASPEN	American Society for Parenteral and Enteral Nutrition
BMI	Body mass index
CVC	Central venous catheter
DAA	Dietitians Association of Australia
EN	Enteral nutrition
EQulP	Evaluation and Quality Improvement Program
ESPEN	European Society for Parenteral and Enteral Nutrition
ICD-10AM 7th Ed.	International Statistical Classification of Diseases and Related Health Problems Tenth Revision, Australian Modification 7th edition
ISBAR	Identify/Introduce, Situation, Background, Assessment and Recommendation
MST	Malnutrition Screening Tool
MUST	Malnutrition Universal Screening Tool
NICE	National Institute for Health and Clinical Excellence
NCP	Nutrition Care Process
NSC	Nutrition Steering Committee
NSQHS	National Safety and Quality Health Service Standards
OACIS	Open Architecture Clinical Information Systems
PICC	Peripherally inserted central venous catheter
PN	Parenteral nutrition
SA	South Australia

Introduction

Healthcare organisations have a responsibility to meet the nutrition and hydration requirements of the patients in their care. Adequate nutrition and hydration is important for general well-being as well as to promote recovery from illness and surgery, and prevent complications associated with malnutrition and dehydration.(1)

Version 2 of the National Safety and Quality Health Service (NSQHS) Standards released in 2017 now includes a separate section under Standard 5: Comprehensive Care Planning which addresses issues related to nutrition and hydration. The Australian Council on Healthcare Standards Evaluation and Quality Improvement Program (EQUIP) National Guidelines(2) and the Council of Europe Resolution ResAP(3) recommend, for optimal patient outcome, that organisations have policies aimed at optimising patient nutrition and hydration, and that the scope of these policies be multidisciplinary and based on national and state/territory guidelines.

Inadequate nutrition and hydration can result in malnutrition and dehydration which is both a cause and a consequence of ill health(4) and is associated with infection risk and increased length of hospital stay.(5) Malnutrition risk increases as the population ages(6) and is greater in those with certain disease states including cancer, critical illness, neurological disease, orthopaedic injury, respiratory disease, and gastrointestinal or liver disease.(1)

The Australasian Nutrition Care Day Survey which encompassed 56 hospitals in Australia and New Zealand found that 32% of acute care patients were malnourished, whilst 40% were at risk of malnutrition.(7) Hospital treatment costs are greater for patients who are malnourished or at risk of malnutrition than for patients who are not malnourished or at risk of malnutrition.(10-12). Failure to diagnose and accurately document malnutrition as a co-morbidity can result in significant funding losses in the healthcare sector's Australian National Diagnosis Related Groups funding system.(8, 9)

In Australia, it has been estimated that malnutrition increases the cost of acute care admission by 30%, equating to an estimated additional figure of \$1745 per malnourished patient per admission for 2010-2011 (13, 14). In the United Kingdom, the National Institute for Health and Clinical Excellence (NICE) identified better nutritional care as the fourth-largest potential source of cost saving to the National Health Service.(4)

This policy support handbook has been developed to improve consistency of nutrition and hydration care in healthcare facilities and is intended to be used by Dietitians and other health professionals as a foundation for developing local nutrition and hydration policies in line with national standards, or as a lobbying document to boost the standard of nutrition and hydration care at an organisational or state level by collating evidence to meet national standards. This document also aims to support smaller organisations where access to dietetic resources may be limited.

A small working party of Dietitians from hospitals across South Australia formed to collate current evidence and clinical guidelines into a practical nutrition and hydration policy support handbook, using previous EQuIP 1.5.7 criteria and EQuIP National Standard 12 as a framework for the handbook. Reference has been made to the NSQHS standards as appropriate. Each author reviewed current literature and contributed to the handbook, followed by consultation from members of the DAA Nutrition Support Interest Group, and senior medical, nursing and speech pathology clinicians.

This document is intended to summarise key research and current evidence for nutrition and hydration care relevant to the acute hospital setting at the time of publication.

Clinical Governance

Recommendation

A Nutrition Steering Committee (NSC) should be part of an organisation-wide governance system, to oversee the nutrition and hydration management strategy of the organisation.(18) An example of how governance may look in an acute adult inpatient hospital setting is provided as Table 1.

Practice points

A NSC should be established with multidisciplinary representation from all key divisions.

- A chair should be appointed to lead the NSC and oversee the organisation’s nutrition and hydration strategy.
- Site-specific policies for the roles and responsibilities of the NSC members should be developed by the NSC.
- Nursing representation is fundamental to a NSC and representation by a Dietitian on NSC is highly recommended.
- Current evidence-based practice guidelines and policies relating to nutrition and hydration should be utilised in smaller organisations where a Dietitian is not available to be involved in the NSC.
- Patients/consumers should be involved in the organisation’s nutrition and hydration strategy.

Table 1: Example of how governance may look in an acute adult inpatient hospital setting.

Chief Executive Officer / Hospital Executive Committee							
Governance	Medical & Surgical Directors	Nursing Director	Allied Health Director		Pharmacy Director	Food Service Director	Safety & Quality
Organisational	Clinical Directorates	Clinical Services Coordinator	Dietetic Manager	Speech Pathology Manager	Pharmacy Manager	Food Service Manager	
			Nutrition Steering Committee				
Supervisory	Consultant	Clinical Practice Consultant	Senior Dietitian	Senior Speech Pathologist	Senior Pharmacist	Senior Food Service	
			Nutrition Steering Committee				
Ward	Doctors	Nurses	Dietitian	Speech Pathologist	Pharmacist	Menu monitor	
Patient/Consumer							

[Adapted from: *Organisation of food and nutritional support in hospital*(15)]

Support for practice

NSC will be responsible for overseeing the development, implementation, audit and evaluation of an organisation-wide nutritional care program inclusive of policy, procedures, education and training. Reports by key organisations(3, 4, 15) support the need for a multidisciplinary NSC, a hospital-wide culture change, and acceptance of accountability and responsibility for nutrition and hydration care and support.(2-4, 15, 16) It is widely recognised that nurses are fundamental to this process as most nutrition and hydration care is provided at the bedside.(15)

In line with NSQHS Standard 1, these organisations outline the importance of governance and distribution of responsibilities within the multidisciplinary committee to improve nutrition and hydration care in hospitals.(3, 4, 15, 17, 18)

The NSC should foster commitment to implementing nutrition and hydration policy, and providing adequate nutrition and hydration care to consumers.(2, 15, 18)

The hospital NSC may sit at both an organisational or supervisory level, depending on the size and structure of the acute setting.(17) As outlined in Table 1, a multidisciplinary team approach includes representation from Hospital Executive, Safety and Quality, Medical and Surgical Consultants, Nurses, Pharmacist, Dietitians, Speech Pathologists and Food Service.(3)

Patients/consumers should be involved in nutrition and hydration service planning, as well as in the design of organisation wide nutrition and hydration care, and processes for service measurement and evaluation.(17)

Nutrition Care Planning

Recommendation

Patients should have an individual nutrition and hydration care plan documented in their medical record and communicated to staff involved in their care.(1, 19)

Practice points

- The nutrition care process should include malnutrition screening with a validated tool, nutritional assessment, provision of food and fluids in keeping with the patient's individualised nutrition care goals, meal time assistance as needed, nutritional monitoring using appropriate indicators, and discharge planning.

Support for practice

The Nutrition Care Process (NCP) is a standardised model intended to guide high quality nutrition care. The model was first developed in 2003 by the American Dietetic Association(20) (now known as the *Academy of Nutrition and Dietetics*) and was subsequently updated in 2008.(19) The NCP has been designed to incorporate a scientific base that promotes the use of evidence-based practice by health care professionals. This

model is reflected across dietetics guidelines internationally.(1, 4, 21, 22). It describes a cyclic process of nutritional assessment, nutrition diagnosis, intervention, then monitoring and evaluation of the effects of the intervention which then lead into ongoing re-assessment and new interventions responding to the changing condition and progress of the patient. A precursor to this cycle is the use of malnutrition screening to identify patients who benefit most from a full nutritional assessment.

Nutrition risk and malnutrition screening

Recommendation

Malnutrition and hydration risk screening should occur on admission and be clearly documented.

Practice points

- All patients should have their weight and height documented on admission.
- Malnutrition risk should be identified using a validated malnutrition screening tool.(24) Examples of validated tools for the acute care inpatient setting include Malnutrition Universal Screening Tool (MUST) and Malnutrition Screening Tool (MST).(25) See Appendix 4.
- Malnutrition screening should be performed by trained health professionals.(24)
- Patients identified as at risk of malnutrition should have appropriate interventions incorporated into their nutrition and hydration care plan.(24)
- Patients with known aspiration risk or known need for modified diet/fluids should be assessed by a Speech Pathologist and their nutrition and hydration needs clearly communicated to staff.
- Patients who require feeding assistance and/or a specific therapeutic diet should have this clearly communicated to staff.
- Hydration status should be screened using subjective, biochemical and clinical parameters.(26)
- Patients should be screened for pressure injuries and ulcers which place them at increased nutritional risk.(17)

Support for practice

Ideally a facility's nutrition and hydration policy should include a nutrition screening flow chart to show clearly the processes involved.

For examples of nutrition screening and assessment tools, refer to the Practice Based Evidence In Nutrition Malnutrition Knowledge Pathway for different conditions/settings. When selecting an appropriate validated malnutrition screening tool, it must also be simple enough that any staff member can use it.(24)

Patients admitted for end-of-life care should be excluded from recording of weight and height as nutrition is not a priority for this group. Palliative patients may also be excluded from weighing at the discretion of the site.

NSQHS Standard 8(17) outlines prevention and management of pressure injuries in an acute setting. Patients should be screened for pressure injuries and ulcers, and those

with stage 3 or 4 pressure ulcers should be referred to a Dietitian(21) regardless of their malnutrition screening result, as a pressure injury itself confers a significant risk of malnutrition due to the increased nutrition requirements for wound healing.(17)

Nutrition and Hydration Assessment

Recommendation

A formal nutrition and hydration assessment should be carried out to determine the priorities of nutrition and hydration management.

Practice points

- A Dietitian is appropriately qualified to complete nutrition assessment and make nutritional diagnoses, as well as recommendations regarding commencing nutrition support (oral, enteral or parenteral nutrition support).
- Dietitians should use appropriate methods of nutrition assessment and nutritional diagnosis.(1)
- Nutritional assessment tools may be used to assess and diagnose malnutrition according to the ICD-10AM 7th edition.(26) Examples include: Patient-Generated Subjective Global Assessment (PG-SGA), Subjective Global Assessment (SGA) and the Mini Nutrition Assessment Tool (MNA).(1) Note that each of these tools has been validated in different populations and they are not interchangeable.
- The nutrition assessment process should also identify patients who may be at risk of Refeeding Syndrome(28) as well as any other risks associated with implementing nutritional interventions.
- Established guidelines should be used to assess the appropriateness of enteral or parenteral nutrition for individual patients.(28, 29)
- A fluid balance chart should be commenced for those with suspected poor enteral hydration to assist in assessment of hydration status.(30)
- Assessment of hydration should be completed by a trained health professional.(26, 30-32)
- Prescription of artificial hydration including intravenous fluids and subcutaneous fluids should be prescribed by a trained health professional with consideration to the purpose of the artificial hydration i.e. resuscitation, replacement or maintenance fluids.

Support for practice

Nutrition Assessment is the first of four steps in the Nutrition Care Process.(23) For examples of nutrition assessment tools, refer to the PEN Knowledge Based Pathway on Malnutrition and the ESPEN Guidelines on Nutrition Terminology (1, 25) .

Nutrition assessment data can be compared to criteria, relevant norms and standards, for interpretation to assist in developing nutrition diagnoses and guide nutrition care planning.(33)

Assessment of hydration should be completed by a trained health professional (30-32) and include medical history, clinical examination, current medications, clinical monitoring

and laboratory investigations, see Table 2 below which outlines recommended data to collect. Fluid balance charts should be commenced routinely for those who are relying solely on thickened fluids for hydration.(26, 34)

Appropriate fluid may be administered orally, enterally, subcutaneously, or intravenously. The purpose, route of administration, fluid type and volume should be assessed and regularly reviewed based on current clinical presentation to prevent dehydration, fluid overload, acidosis, and their associated complications.(35)

Figure 1 outlines the important relationship between resuscitation, replacement and maintenance fluids.

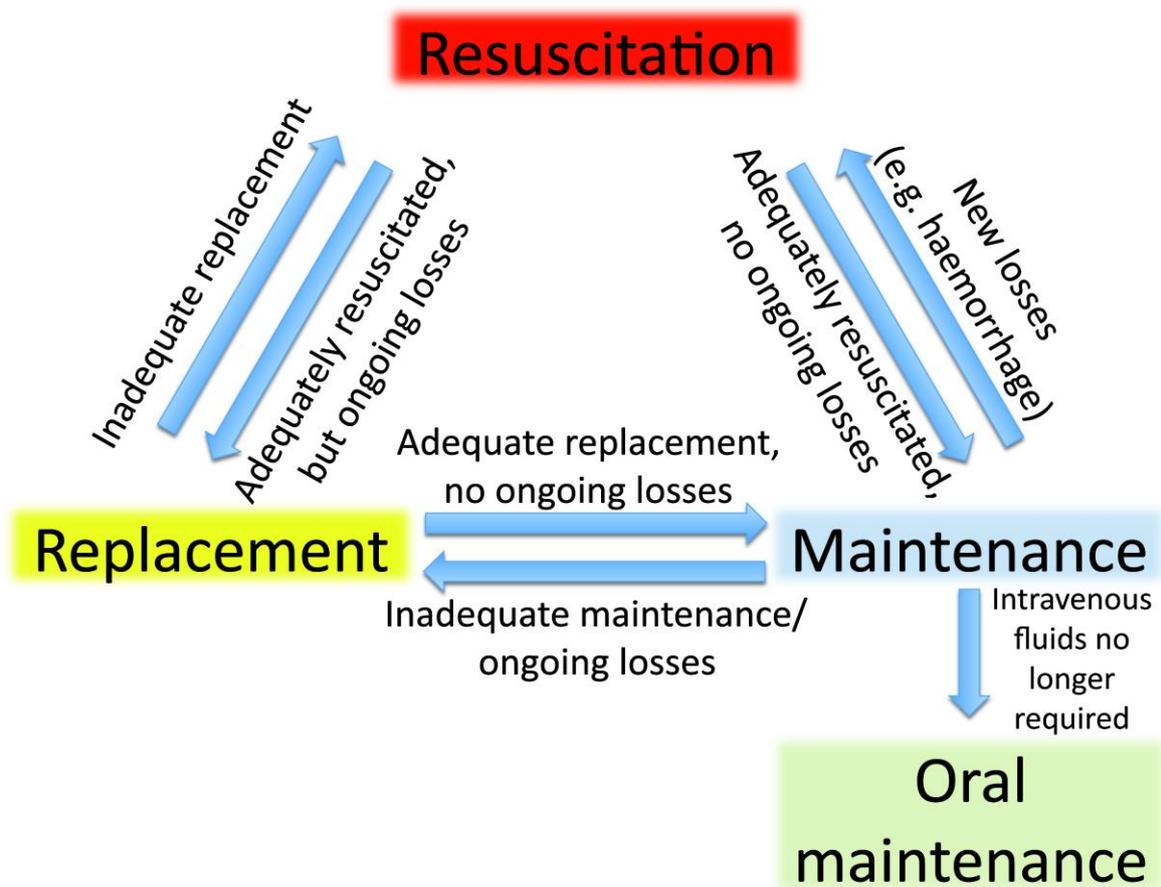


Figure 1: **The relationship between resuscitation, replacement and maintenance fluids.** [Source: Reproduced with permission from Lobo DN, Lewington AJP, Allison SP. Basic Concepts of Fluid and Electrolyte Therapy. Bibliomed - Medizinische Verlagsgesellschaft mbH, Melsungen, 2013.]

Table 2: Assessing hydration status.(25)

Parameter	Significance
History	Alerts to likelihood of fluid deficit (e.g. vomiting/diarrhoea/haemorrhage) or excess (e.g. from intraoperative fluids).
Weighing	24-h change in weight (performed under similar conditions) – best measurement of change in water balance. Simple to carry out by bedside.
Fluid balance charts	Inherent inaccuracies in measurement and recording. Does not measure insensible loss. Large cumulative error over several days. Good measurement of changes in urine output, fistula loss, gastric aspirate, etc.
Urine output	<30ml/hr is commonly used as an indication for fluid infusion, but in the absence of other features of intravascular hypovolemia is usually due to the normal oliguric response to surgery. Urine quality (e.g. urine:plasma urea or osmolality ratio) is just as important, particularly in the complicated patient.
Blood pressure	Cuff measurements may not always correlate with intra-arterial monitoring. Does not necessarily correlate with flow. Affected by drugs, etc. Nonetheless, a fall is compatible with intravascular hypovolemia, particularly when it correlates with other parameters such as pulse rate, urine output, etc.
Capillary refill	Slow refill compatible with, but not diagnostic of volume depletion. Can be influenced by temperature and peripheral vascular disease.
Autonomic responses	Pallor and sweating, particularly when combined with tachycardia, hypotension and oliguria are suggestive of intravascular volume deficit, but can also be caused by other complications, i.e. pulmonary embolus or myocardial infarction.
Skin Turgor	Diminished in salt and water depletion, also caused by ageing, cold and wasting.
Dry mouth	Usually due to mouth breathing, compatible with salt and water depletion.
Sunken facies	May be due to starvation or wasting from disease, but compatible with salt and water depletion.
Serum biochemistry	Indicates ratio of electrolytes to water in the extracellular fluid and is a poor indicator of whole body sodium status. Hyponatremia most commonly caused by water excess. If change in water balance over 24h is known, then change in serum sodium concentration can guide sodium balance. Hypokalemia nearly always indicates the need for potassium supplementation. Blood bicarbonate and chloride concentrations measured on point of care blood gas machines are useful in patients with acid-base problems including iatrogenic hyperchloremia.
Urine biochemistry	Urine sodium concentration reflects the renal perfusion and a low value (<20mmol/L) indicates renal hypoperfusion. Measurement of urine sodium allows assessment of postoperative sodium mobilisation (see text). Urine potassium measurement is useful in assessing the cause of refractory hypokalemia. Urine urea excretion increases several fold in catabolic states (e.g. sepsis) and is an indication for the provision of additional free water to avoid hypernatremia and uraemia.

Provision of food, fluids and nutrition supplements

Oral Nutrition and Hydration

Recommendation

Patients should have access to appropriate, nutritionally adequate, safe food and fluids to support treatment and maintaining function, along with appropriate mobilisation and rehabilitation.

Practice points

Safe food and oral fluids

- Food services and menus should comply with food safety standards and relevant standards and/or guidelines.(36)
- Food and fluid should be prepared under organisational food safety and hygiene standards.(3)
- Accurate and timely communication between clinical and food service systems should occur to minimise risk.
- Standard therapeutic diets (e.g. low potassium, gluten free diets), modified consistency diets and thickened fluids should be available and should meet recognised/national standards.(36, 37)
- Food service staff should use hospital therapeutic diet guidelines to modify normal menus where set therapeutic menus are not available.
- Nutrition and hydration management plans should be documented for patients identified as being at risk of Refeeding Syndrome.(28)
- Speech Pathologists are qualified to assess the safety of food and fluids for patients with aspiration risk.

Appropriate food and oral fluids

- Patients should be consulted on personal dietary requirements and have these clearly communicated.
- Patients requiring texture-modified diets and/or thickened fluids may benefit from bedside signage detailing their requirements to prevent accidental provision of an unsafe or inappropriate item.
- Therapeutic and modified-consistency diets should be provided to all patients with clinical need.
- Dietitians are appropriately qualified to individualise meal plans for those with complex therapeutic dietary requirements that cannot be met with a standard menu, including multiple food allergies.(1, 19)
- Food service communication systems should enable the food to be ordered as close to the meal-time as practicable.
- Cultural needs should be met through culturally-appropriate menus and the food service system whenever practicable.

Adequate food and oral fluids

- Menus should be designed to enable the major patient groups to meet their nutritional requirements.

- Systems should be in place to identify patients who are unable to meet their nutritional requirements through the standard menus.
- Fasting times should be minimised before and after interventions or investigations.
- Patients should not be made nil by mouth or ordered a fluid-only diet for longer than 3 consecutive days without a clear plan for nutrition support.(38)
- Patients should be offered oral nutrition support if unable to meet their nutritional requirements with their standard menu.
- Supplementary fluids (eg nasogastric, or intravenous) should be considered for patients who are unable to maintain adequate hydration.
- Utilisation of oral, enteral and parenteral routes of nutrition and hydration should be considered to ensure that patients' nutrition and hydration needs are met.

Support for practice

Food, fluid and nutritional care form part of an intervention and clinical treatment plan.(2) The hospital admission is an opportunity to model appropriate provision of meals to meet patients' nutritional requirements after discharge. High levels of food wastage are associated with inadequate nutritional intake and staff should be aware that any food not eaten is a missed opportunity to improve a patient's nutritional status.(4,39-41)

Despite adequate nutrition provided in three meals, a significant proportion of patients consume insufficient protein and energy.(42) Patients who may be unable to meet their nutritional requirements through a general menu include those who have functional decline, a poor absorptive capacity, high nutrient losses, or increased nutritional needs through causes such as catabolism.(4, 42)

Fasting should be minimised. The Australian and New Zealand College of Anaesthetists' guidelines for fasting times prior to elective surgery should be used.(43) Preoperative fasting guidelines outline reduced fasting times however practice has been slow to change. The American Society of Anesthesiologists and Norwegian clinical guidelines recommend that adults stop intake of normal solids six hours preoperatively, and allow clear fluids until two hours prior to induction of anaesthesia.(44)

Patients on modified-consistency diets and/or thickened fluids are at higher risk of inadequate oral intake, especially if unable to feed themselves.(45,46) Food service systems and nursing support strategies should be modified where needed, to ensure adequate nutritional intake. This includes offering snacks or fluids more frequently (such as whenever the nurse is at the bedside to perform any care tasks.(47)) Patients who have inadequate fluid intake are at increased risk of urinary tract infection and incontinence, low blood pressure, falls, confusion, cognitive impairment, lethargy, headaches, pressure ulcers and constipation.(48)

Smaller but energy and protein-enriched meals improve energy and nutrient intakes.(49) Provision of snacks and fortifying food is an effective means of increasing overall protein and energy intake of hospital patients.(50)

Oral nutritional supplementation can promote weight gain, reduce mortality and reduce length of hospital stay in those at risk of malnutrition.(51) Oral nutrition support includes

a protein/energy-dense menu, nourishing mid meal snacks or fluids, or fortified nutritional supplements. Small doses (60-80ml) of energy dense supplements given at frequent prescribed intervals along with medications may be useful for patients who do not tolerate larger supplement volumes.(52) Bringing favourite and familiar foods from home can be useful, however it is important that safe food hygiene practices are used by patients' relatives and/or carers who bring food and fluids into hospital.(53)

Artificial Nutrition Support

Recommendation

Artificial nutrition support should be considered when patients cannot adequately or safely meet their nutrition requirements orally.(2, 16,28)

Practice Points

- Artificial nutrition support should be considered for all patients who have had nil nutritional intake for >5 days, earlier if critically ill or malnourished.(28-29)
- Clear indication for artificial nutrition support should be established.
- Patients should be adequately informed of the clinical benefits and risks of artificial nutrition support prior to administration/infusion
- Type of EN and PN formulations should be selected based on calculated nutrient and fluid requirements.(28, 29)
- Regimens should be individualised and negotiated with patient.
- Timing of regimens should consider daily interventions where safe and practicable.
- Risk of Refeeding Syndrome should be prophylactically managed.
- A Dietitian should generally be consulted for an appropriate individualised nutrition support regimen. Evidence-based guidelines or standard flow charts for EN and PN should be used when a Dietitian is not available.(28)
- Refer to Appendix 1. for recommended documentation to ensure safe and appropriate EN or PN is prescribed.

Practice points – Enteral Nutrition

- EN should be prescribed when patients have a functioning gastrointestinal tract.
- Goals of EN should be negotiated. Type and volume of EN prescribed should be consistent with nutritional goals.
- Ethical issues and long-term nutrition support options should be considered when initiating, continuing or discontinuing EN.

Practice points – Parenteral Nutrition

- PN can be used for patients who are unable to tolerate or absorb adequate nutrition support via oral or enteral routes.(29)
- PN should be aseptically infused centrally (through a central venous catheter (CVC) or peripherally inserted venous catheter (PICC)) or peripherally (through a peripheral or midline catheter).

- Goals of parenteral nutrition support, including timeframes for trialling EN and oral nutritional support, should be negotiated within the healthcare team.
- Clinical benefits and risks of PN should be evaluated before commencing.

Support for practice

EN and PN should be overseen or developed in consultation with Dietitians.(2) Further information regarding EN and PN can be obtained by referring to the DAA EN manual (28) and PN manual (29). Organisations should use established guidelines to inform the appropriate prescription of artificial nutrition support, and to develop policy and procedure for enteral and parenteral nutrition. ESPEN and ASPEN have published multiple practice guidelines for the use of EN and PN in different disease states and clinical settings.

EN is used to provide nutrition and hydration to patients who cannot safely consume adequate nutrition and/or hydration through oral consumption of food and fluid.(4) It is a safe, cost effective form of nutrition support which is compatible with normal gastrointestinal functioning (28) and should be prescribed by a health professional with relevant training(4) such as a Dietitian. EN should not be prescribed to patients when the gastrointestinal tract is not functioning (eg in cases of gut failure or obstruction.(28))

EN can be used for short-term nutrition support to treat or prevent malnutrition that may occur as a result of disease processes, critical illness, severe dysphagia, or prolonged nil by mouth status for investigations or surgical interventions.(28) Long-term EN can be used when the patient is unable to meet their full nutritional needs orally. Enteral feeding tubes can be placed into the stomach, duodenum or jejunum through either minimally invasive or surgical techniques.

Indications for the use of PN include gut failure, intestinal obstruction, or inability to gain enteral access to provide adequate nutrition.(29) Additionally, supplemental PN can be used in individual cases of malabsorption or highly inflammatory states to ensure nutritional requirements are met (such as in intestinal failure, inflammatory bowel disease, burns).(29) Intra-dialytic parenteral nutrition can be prescribed to malnourished haemodialysis patients whom are failing to thrive on oral or enteral nutrition support.(29)

Ethical consideration should be given to benefits, risks, complications, and quality of life when initiating, continuing or discontinuing artificial nutrition support in patients. In palliative or elderly patients, EN or PN may not be the most appropriate form of nutrition support.

Meal time environment and assistance to eat and drink

Recommendation

Patients should be provided with assistance from trained personnel when unable to consume their meals or fluids independently, and should be provided with the opportunity to choose where they have their meals and fluids.(3, 54, 55)

Practice points

- Trained assistants or volunteers can be utilised at meal times to assist patients' to increase their nutritional intake.(56-61)
- Eating environment should be conducive to promoting nutritional intake, such as eating around a table or in a supervised dining room where possible.(62, 63)
- Mealtime intervention strategies can be used to improve patients' nutritional intake, e.g. focusing on mealtime environment or provision of support.(3,54, 55)
- Patients with reduced dexterity and ataxia should be appropriately assessed.(64)

Support for practice

There are few studies in the literature focusing on the hospital mealtime environment, however it is clear that patients' energy intake can be increased when assistance is provided (by trained assistants or volunteers) at mealtimes.(56-61) Many patients in acute care hospitals require some form of mealtime assistance - perhaps 57-70% of patients.(65, 66)

Even patients with good appetites have been found to have insufficient nutritional intakes in hospital due to lack of assistance at mealtimes.(67) While nurses have historically provided patients with mealtime assistance, this has diminished in recent decades(68) despite consensus across the nursing literature that nutrition is a fundamental component of nursing care.(69) Although many nurses view nutrition as an important healthcare issue, few are able to actively prioritise nutritional care in practice.(70) Given this, mealtime intervention strategies focusing on either the mealtime environment or on the provision of support have been promoted by various organisations and advocacy groups as a means to improve patient nutritional intake.(3, 54, 55, 61)

Studies investigating eating location have shown that eating at a table (62, 67) and in a dining room (63) can increase dietary energy intake. No significant improvements in patient nutritional intake have been demonstrated when 'protected mealtimes' have been implemented in the acute care setting, perhaps because this may lead to fewer staff being present at mealtimes who could potentially provide assistance.(71-74) However an increase in protein intake has been found when patients receive mealtime support through a combination of protected mealtimes and assistant support.(73) Hence implementation strategies for protected meal times are still seen as a critical component of success. Flagging patients who need extra help – for example with coloured (eg red) meal trays – has also been suggested as an option, however to date there have been no studies evaluating the effectiveness of the use of this strategy.

Dexterity and ataxia can impact on ability to self-feed and the level of assistance required at meal times. Strategies such as visualisation, weighted wrist cuffs and weighted cutlery may be beneficial in promoting independence and self-feeding strategies. An Occupational Therapist is appropriately qualified to provide this assessment and recommendations.(64)

Monitoring

Recommendation

Staff should routinely monitor patients' ability to consume adequate fluid and nutrition.

Practice points

- Patients should be re-screened for malnutrition risk weekly and appropriate actions taken and recorded in their care plan.(4, 24)
- Patients should be monitored for their feeding assistance needs, and if additional assistance is required, this should be communicated clearly to staff.
- Changes to therapeutic diets should be clearly communicated to food services and clinical staff.
- Aspiration risk should be monitored, and a Speech Pathologist should assess new indicators of dysphagia.
- Hydration should be monitored daily.
- Patients on thickened fluids should receive additional support and monitoring to ensure adequate fluids are consumed.
- Patients should not be left fasting or on a fluids diet for longer than 3 days without a clear plan for nutrition support.(28-30)
- Daily monitoring of EN and PN regimens should occur until the patient is clinically stable.(28.29)
- Nasogastric feeding tubes should be measured daily to ensure the tube has not migrated out of position.
- The indications, route, risks, benefits and goals of artificial nutrition support should continue to be monitored as clinically indicated.(4, 19)

Support for practice

For further details regarding nutrition and hydration monitoring, refer to the National Institute for Health and Clinical Excellence guidelines for Nutrition Support in Adults.(4) The DAA enteral nutrition manual(1) and parenteral manual(28) outline specific clinical and biochemical markers to use when monitoring EN and PN regimens.

Methods of monitoring hydration may also include daily weight,(31, 32) urine colour chart,(75, 76) measuring urine osmolality, heart rate, biochemistry, and physical assessment of sunken orbits, dry tongue and mucous membranes in the mouth, loss of skin turgor, low blood pressure, and thirst.(31, 32) The British Consensus Guidelines on Intravenous Fluid Therapy in Surgical Patients(26) makes recommendations for monitoring fluid and hydration status.

Discharge planning

Recommendation

All patients should be discharged with a clear nutrition and hydration care plan.(19)

Practice points

- Patients should have strategies in place to continue their nutrition and hydration care plan in a safe environment.
- Patients/consumers should have timely access to adequate and appropriate nutrition and hydration after discharge (oral, enteral or parenteral).
- Strategies should be clearly communicated for managing any clinical risks identified during admission (e.g. Refeeding Syndrome, dehydration, inadequate nutritional intake).
- Patients/consumers should be provided with information and/or assistance to access community support services (e.g. meal delivery services, care packages which include assistance at mealtimes).
- Discharge documentation and care plans should include recommendations from all relevant disciplines.
- Appropriate outpatient or community follow up should be arranged and clearly communicated to patients/consumers.
- Patient/consumer education leaflets should be provided including documentation of any new or changes to care plans.

Support for practice

Documented evidence for discharge planning is limited however is incorporated throughout local and national guidelines including National Safety and Quality Health Service Standards 1-10(18) with particular focus in Standard 2 Partnering with Consumers, and Standard 6 Clinical Handover.

Education & training for staff

Recommendation

Health professionals should have the appropriate skills and training to deliver high standards of nutrition and hydration care to meet the needs of the patient and care setting.(16,77)

Practice Points – for the organisation

- NSQHS standards recommend annual mandatory training to meet national acute care standards.(18)
- The NSC should recommend appropriate education and training resources.
- Programmes should be developed, implemented and evaluated by a multidisciplinary team that includes consumer and/or patient representative(s).(2, 16, 18, 78)

- Education and training should be mandatory for all staff involved in the organisation nutrition and hydration management strategy.
- Nutrition champions may be trained more intensively to provide additional support to staff.
- Medical and nursing graduates need minimum levels of competence in nutrition and fluid management.(47)
- Attendance at educational training programmes should be recorded for organisation-wide auditing purposes.
- Audits and annual training reviews should be completed to help identify any gaps in skills and/or performance.
- Education programs should be evaluated, and improved as required.(2)
- Supervisory relationships should be established to provide support to less experienced staff.
- Training programs can be designed to contribute toward annual continuous professional development programs.

Practice Points – for the staff

- Staff should be aware of their roles and responsibilities regarding nutrition and hydration of the facility’s patients.
- Staff should attend organisation-wide education and training.(16)
- Agency and locum staff have a responsibility to remain up to date with education and training.(18)
- Staff should be provided with opportunities for relevant professional development activities.

Support for practice

Education and training should aim to increase awareness of the role of nutrition and hydration in promoting recovery from illness; increase understanding of the organisation’s food service; and increase awareness of malnutrition risk.(16) It should be centred on delivering best practice nutrition and hydration care, and should be delivered by healthcare professionals with the relevant skills and training in nutrition and hydration care planning.(19) There are limited resources in this area, but key organisations reiterate the importance of appropriate training in the delivery of quality nutrition and hydration care.(4, 15)

Education and training requirements should be assessed and developed at a local level to meet the requirements of the organisation. Dietitians, in conjunction with nursing staff, are ideally placed to assist in determining nutrition and hydration training needs and to conduct education and training for all staff involved in the delivery of nutrition and hydration care.(77) Patient/consumer representative(s) should be involved in the training process where relevant.(18, 78)

Patient and consumer information and communication

Recommendation

Patients should readily have access to information regarding nutrition and hydration to promote recovery and general health.

Practice Points – Patients

- Comprehensive nutrition and hydration care plans should be provided.
- Daily menus and information about meal services should be available to enable patients to make appropriate choices.
- Education should be provided to ensure a good understanding of nutrition and hydration interventions.
- Regular feedback about patient progress should be provided by all relevant staff throughout the patient journey.
- Information regarding organisational food services and associated infection control policy should be made available.
- Education and information regarding safe artificial nutrition support strategies to treat or prevent malnutrition should be available.(2)
- Education regarding risk of aspiration should be provided to patients who continue to consume foods and fluids that put them at risk.

Practice Points – Organisation

- Nutrition and hydration information should be safe, accurate and evidence based.
- Information should be displayed and readily accessible by all patients.
- Information should be written and formatted to be easily understood by the general public.
- Information should be available and understood by culturally and linguistically diverse populations that access the service.(79)
- Patient information should be conducive to promoting health literacy.(79)
- Staff should utilise interpreter services to promote effective communication with culturally and linguistically diverse populations.

Support for practice

In line with NSQHS Standard 2, health care organisations should partner with consumers to deliver optimal patient-centred care.(78) Local guidelines should be used to develop patient education material(78) and if available, media and communications departments or consumer advisory groups should be consulted. Where practicable, patients/consumers should be involved in the process to ensure that all education and communication materials are culturally and linguistically appropriate.(18) A number of studies demonstrate the benefits and importance of dietary education, with or without nutritional supplementation, in improving anthropometric markers in patients with disease-related malnutrition,(80) and patients undergoing radiotherapy.(81)

Evaluation

Recommendation

Nutrition and hydration practices should be evaluated regularly, with trends examined and the results fed back to the staff, decision makers and consumers. Table 3 highlights some ways of monitoring nutrition and hydration practices.

Practice points

- Responsibilities for evaluating and improving care should be clear.
- Results should be compared with external targets, health round table data, and standards or guidelines where available.
- Regular reviews of current literature should be undertaken to ensure nutrition and hydration policies are based on current evidence.
- Organisational nutrition and hydration policies should be evaluated regularly in line with appropriate state and/or national standards.

Table 3: Examples of nutrition and hydration audit practices.

- Auditing of frequency and action plans from NSC meetings
- Patient satisfaction surveys
- Food safety or wastage audits
- Testing of temperature of meals at ward level
- Incident reporting of risks related to inappropriate food, fluid and fasting
- Safety and learning system quality review of critical nutrition or hydration-related incidents
- Recording of feedback and/or complaints related to nutrition and hydration
- Auditing of rates of malnutrition screening
- Measurement of malnutrition prevalence within the facility
- Reviews of compliance with nutrition and hydration action plans
- Auditing of nutrition and hydration related documentation
- Monitoring of weight pattern in long stay patients
- Observations of mealtime assistance
- Maintenance of attendance records at staff nutrition training sessions
- Reviews of staff competency in malnutrition screening processes
- Measurement of improvements in knowledge scores as a result of training

Support for practice

Evaluation of practice is a means to achieve continuous quality improvement and accountability of practice. The effectiveness of quality improvement interventions is variable and highly influenced by local context as change is required in “complex social systems that change over time”.(82) Effective interventions should be complex, multi-faceted and developed iteratively and “respond to unforeseen obstacles and unintended effects”.(82)

The use of a quality improvement framework can support organisational change. The use of a continuous quality improvement model, such as the Plan Do Study Act cycle,(83) may accelerate service delivery and improvement, see Figure 2. Clinical auditing with feedback, to compare practice with established standards, can be effective in improving professional practice.(84) Costs, resources and benefits must be considered. Key stakeholders should be involved at all levels.

Recommended steps for clinical audits(85) are:

1. **Preparation:** Including consumers, establishing/activating necessary committees and feedback systems, identifying skills and people to conduct the audit, providing training to the audit team.
2. **Selecting criteria:** Including measurable standards against which to assess the process or outcome of care, preferably from existing guidelines or systematic reviews and making criteria explicit and subjecting it to peer review.
3. **Measuring performance levels:** Including identifying the data to be collected: sample size, sources, extraction tools and techniques, method of analysis.
4. **Making improvement:** Including identifying level of and barriers to change, establishing the environment for the audit.
5. **Sustaining improvement:** Including feeding back results, monitoring and evaluating change.

Audit and feedback may be most effective when:

- the health professionals are not performing well to start out with;
- the person responsible for the audit and feedback is a supervisor or colleague;
- it is provided more than once;
- it is given both verbally and in writing; and
- it includes clear targets and an action plan.(83)

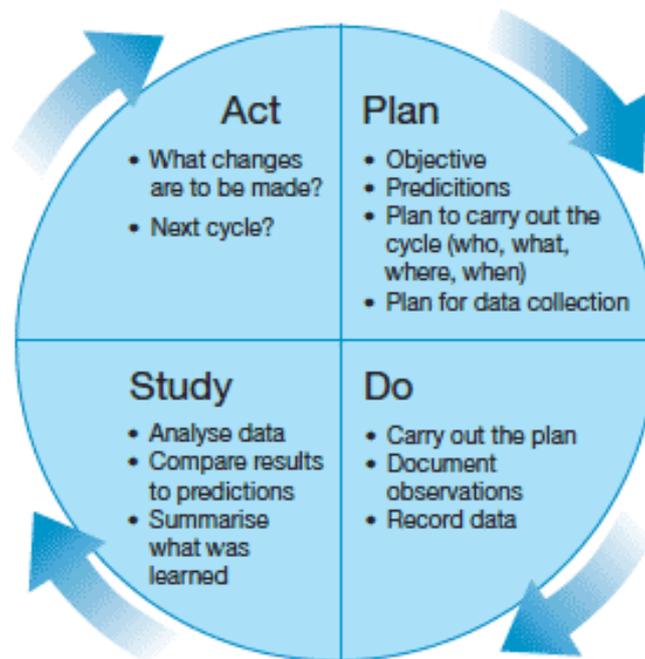


Figure 2: Continuous Quality Improvement Cycle.

Key Organisations

It is recommended that Australian organisations and guidelines are referred to in the first instance. The following key organisations have developed specific evidence based practice guidelines relevant to different key areas of nutrition and hydration care for different clinical conditions, interventions and settings.

For further information, refer to Key Resources in Appendix 3.

Australian organisations

Australian Commission on Safety and Quality in Healthcare
<http://www.safetyandquality.gov.au/>

Agency for Clinical Innovation
www.aci.health.nsw.gov.au

Australian Dietary Guidelines
<https://www.eatforhealth.gov.au>

Australian and New Zealand College of Anaesthetists
<http://www.anzca.edu.au/>

Australasian Society of Parenteral and Enteral Nutrition
<http://www.auspen.org.au>

Dietitians Association Australia
<http://daa.asn.au>

Health Consumers Alliance of South Australia (Inc).
<http://www.hcasa.asn.au>

National Health and Medical Research Council
<https://www.nhmrc.gov.au>

Nutrient Reference Value
<http://www.nrv.gov.au/>

PEN: Practiced-based Evidence in Nutrition
<http://www.pennutrition.com>

South Australian Health
<http://www.health.sa.gov.au/>

Speech Pathology Australia
www.speechpathologyaustralia.org.au

The Australian Council on Health Care Standards
<http://www.achs.org.au>

International Organisations

Academy of Nutrition and Dietetics
<http://www.eatright.org>

American Society for Enteral and Parenteral Nutrition
<http://www.nutritioncare.org>

British Association for Parenteral and Enteral Nutrition
<http://www.bapen.org.uk>

British Dietetic Association
<http://www.bda.uk.com>

Dietitians of Canada
<http://www.dietitians.ca>

Dietitians New Zealand
<http://dietitians.org.nz>

European Society for Enteral and Parenteral Nutrition
<http://www.espen.org>

National Institute for Health and Clinical Excellence
<http://www.nice.org.uk>

World Health Organisation
<http://www.who.int/en>

Glossary

Accreditation – a status that is conferred on an organisation or an individual when they have been assessed as having met particular standards.(18)

Acute care setting – a healthcare facility that manages urgent or emergent episodes of injury and illness that can lead to death or disability without rapid intervention.(85)

Artificial nutrition support – administration of specifically formulated nutrition, by mouth (oral nutrition support), through a tube directly into the gastrointestinal tract (enteral nutrition), or into a vein (parenteral nutrition).(27, 28)

Best Practice - A method or technique that has consistently shown results superior to those achieved with other means, and that is used as a benchmark.(86)

Criterion - an explicit statement that defines the appropriateness of healthcare decisions, services and outcomes, and that can be measured.(4)

Dysphagia – The medical term for difficulty swallowing, or inability to swallow.(87)

Evidence - Information on which a decision or guidance is based, from a range of credible sources including randomised controlled trials, observational studies, and expert opinion (of clinical professionals and/or patients with direct experience of the context).(4)

Enteral nutrition - nutrition administered directly into the stomach or small intestine using a tube that is usually specifically designed for the purpose.(27)

Hydration is defined as the supply and retention of water in biological tissues.(2)

Malnutrition – A state of nutrition in which a deficiency of energy, protein and/or other nutrients causes measurable adverse effects on tissue/body form, composition, function or clinical outcome.(1) This document refers solely to **protein-energy under-nutrition**, in line with the DAA Malnutrition Guidelines 2009.(1)

Malnutrition risk - has eaten little or nothing for more than 5 days and/or is likely to eat little or nothing for the next 5 days or longer.(4)

Modified consistency diets – food and fluid that has an altered texture to reduce the effort involved in chewing, oral manipulation and/or safe swallowing.(88)

Nutrition The process of providing or obtaining the food necessary for health and growth.(89)

Nutrition Support – any nutritional strategies used to complement or replace normal food, for the purpose of improving or maintaining a patient’s nutrition status.(4) May include the provision of nutrients or adjunctive therapeutic agents to patients orally

and/or enterally (by administration into the stomach or intestine) and/or parenterally (by intravenous infusion)

Nutrition Screening – the process of identifying patients at nutrition risk or who have characteristics commonly associated with nutritional problems, most likely to benefit from comprehensive nutrition assessment and potentially nutrition intervention.(1)

Nutrition Assessment – a comprehensive approach to gathering pertinent data in order to define nutrition status and identify nutrition related problems.(1)

Nutrition Support Team – a multidisciplinary team (such as Dietitian, Pharmacist, Nurse, and Doctor) who nutritionally assess, prescribe, and oversee the care of nutrition support patients. Scope may include specialised enteral nutrition access, parenteral nutrition regimens, products and vascular access sites.(1, 4, 15)

Nutrition Care Process - Standardised cyclic model containing five steps - nutrition assessment, nutrition diagnosis, nutrition intervention, nutrition monitoring and evaluation - intended to guide high quality nutrition care.(19)

Oral nutrition support / supplement - A product for use in oral nutrition support given with the aim to boost nutritional intake and the nutrient density of the diet.(4)

Parenteral nutrition - nutrition support that is infused intravenously into the bloodstream either via a central venous access device (PICC or CVC) or peripherally. It is a nutrition formula that can contain amino acids, glucose, fat, electrolytes, vitamins and trace elements to meet a patient's complete nutritional requirements.(1, 4)

Protected mealtimes - mealtimes that are protected from unnecessary and avoidable interruptions, providing an environment conducive to eating, and freeing staff to provide patients with support and assistance with meals.(90)

Refeeding Syndrome - A potentially lethal condition arising from severe electrolyte and fluid shifts that occur when nutrition is given to anyone who has metabolically adapted to starvation. Refeeding Syndrome has been reported in cases of oral, enteral and parenteral nutrition, however it is most common when non-volitional nutrition support is provided (as oral intake tends to be self-limiting). Refeeding Syndrome can be associated with significant morbidity and mortality. The syndrome describes the physical signs and symptoms (such as heart arrhythmia, peripheral neuropathy, altered level of consciousness) rather than the electrolyte and fluid shifts that cause them. Fluid balance changes, abnormal glucose metabolism, hypophosphataemia, hypomagnesaemia, and hypokalaemia are all early signs of risk. In addition, thiamine deficiency can occur.(91)

Therapeutic diet - A diet intervention ordered by a health care practitioner as part of the treatment for a disease or clinical condition manifesting an altered nutritional status, to eliminate, decrease, or increase certain substances in the diet (e.g. sodium, potassium).(92)

Appendix 1.

Documentation

Documentation should be completed throughout the patient journey to ensure appropriate and safe nutrition and hydration care is provided and communicated to minimise clinical risk.

Documentation of nutrition and hydration needs and care planning may occur in different records, including in clinical records, nursing care plans, patient record cards, on communication boards, handover tools and summaries. Standard templates are useful to ensure consistent documentation.

Documentation is a legal requirement for all health practitioners and is necessary for; communicating patient care management, quality review, organisational financial reimbursement, legal affairs, education and planning of services.(93) Local and state documentation guidelines should be used to inform documentation requirements. Refer to practice guidelines from key organisations(28) for further information regarding specific documentation of nutrition care plans. Table 4 provides a summary of recommended key documentation.

Table 4: Summary of recommended key documentation.

Stage of patient journey	Documentation practice points
Admission	<ul style="list-style-type: none">• Height and weight• Appropriate dietary and fluid requirements communicated• Alerts for those with aspiration risk or food allergies• Feeding assistance needs communicated
Malnutrition screening	<ul style="list-style-type: none">• Completed malnutrition screening tool and action plan communicated
Nutrition assessment	<ul style="list-style-type: none">• Validated nutrition assessment tool including nutrition and hydration information and score obtained• Nutrition and hydration impact symptoms• Signs of aspiration, dysphagia or gastrointestinal intolerance• Malnutrition diagnosis as per ICD-10AM 7th edition (26)• Refeeding Syndrome or dehydration risk• Documentation as per local Dietetics procedures
Provision of food and fluids	<ul style="list-style-type: none">• Standard, therapeutic or modified diet and fluids ordered• Oral nutrition supports (e.g. supplement drinks)• Refeeding Syndrome management strategies• Food and fluid refusal or missed meals, including management strategies or actions

Artificial nutrition support	<ul style="list-style-type: none"> • Clinical indication for artificial nutrition support • Patient/consumer consent • Goals of artificial nutrition support and expected duration • Negotiated timeframes for trialling artificial nutrition support and plan for reintroduction of alternate nutrition • Type of access or feeding tube used including date of insertion • Method of EN administration e.g. pump, bolus, gravity fed • Confirmation of correct positioning of tubes/intravenous lines • Refeeding Syndrome management strategies • Clear regimen, including type artificial nutrition, volume, administration times, rates, water flushes, instructions regarding additional hydration and medication • Macronutrient, micronutrient, electrolytes and fluid provided • Additional instructions or equipment required • Signed consent form before placement of PICC/CVC or EN tube • Consent for withdrawal of artificial nutrition at end-of-life • Any incidences of infection or sepsis • Longer term nutrition plans
Mealtime environment	<ul style="list-style-type: none"> • Pre-meal hygiene • Level of supervision and/or assistance provided • Equipment (such as weighted cutlery) required • Unusual events occurring during meal times
Monitoring	<ul style="list-style-type: none"> • Weekly repeated malnutrition screening • Changes to medical status that affect nutrition and hydration (e.g. clinical deterioration, surgery, medications) • Nutrition and hydration impact symptoms • Signs of aspiration, dysphagia or gastrointestinal intolerance • Monitoring of nasogastric tube position, IV site/dressing • Changes to weight and fluid balance • Biochemistry results specific to nutrition care plan(27, 28) • Update or changes to nutrition and hydration care plan • Nutrition and hydration education required or provided • Timeframes for review • Timely referrals to relevant disciplines
Discharge planning	<ul style="list-style-type: none"> • Recommendations from all relevant disciplines. • Strategies for managing any clinical risks identified • Follow-up plans and community supports
Education	<ul style="list-style-type: none"> • Patient-centred nutrition and hydration goals and strategies • Education provided including written material
Clinical handover	<ul style="list-style-type: none"> • Identification • Situation • Background information • Assessment • Recommendations • Acknowledgement of the transfer of clinical responsibility

Appendix 2.

Clinical Handover

Clinical handover should occur between all staff involved in patient care as per national health safety standard 6.(94) Patients and carers should be included as required in handover and communication of treatment plans. Handover should occur in an appropriate confidential environment, with verbal handover documented. Handover must be timely, relevant, structured and contribute to safe patient care and be in-line with organisational procedures or electronic clinical handover models (refer to Table 5 for example).(94, 95)

Table 5: Example handover mnemonic: ISBAR

ISBAR A standard mnemonic to improve clinical communication

- **Identify** – who you are and what is your role. Identify the patient.
- **Situation** – what is going on with the patient
- **Background** – what is the clinical background/context
- **Assessment** – what information have you gathered, what is the problem
- **Recommendation** – what needs to happen next, what are your recommendations, what risks are there to patient safety or the organisation/staff, assign and accept responsibility and accountability

Appendix 3.

Key Resources

It is recommended that Australian organisations and guidelines are referred to in the first instance. The following key organisations have developed specific evidence based practice guidelines and/or resources relevant to different key areas of nutrition and hydration care for different clinical conditions, interventions and settings.

All web links below were current at the time of publication of this document.

Australian Resources

National Safety and Quality Health Service Standards

- ACSQH (2011) National Safety and Quality Health Service Standards.
<http://www.safetyandquality.gov.au/wp-content/uploads/2011/09/NSQHS-Standards-Sept-2012.pdf>
 - Standard 1 Governance for Safety and Quality in Health Service
 - Standard 2 Partnering with Consumers
 - Standard 6 Clinical Handover
 - Standard 8 Preventing and Managing Pressure Injuries
- ACSQH (2015) Resources for Implementing the NSQHS Standards
<http://www.safetyandquality.gov.au/our-work/accreditation-and-the-nsqhs-standards/resources-to-implement-the-nsqhs-standards/>
- ACSQHS (2012) Health Literacy Stocktake Consultation Report
<http://www.safetyandquality.gov.au/wp-content/uploads/2012/01/Health-Literacy-Stocktake-Consultation-Report1.pdf>

Australian Commission on Safety and Quality in Health Care

- The OSSIE Guide to Clinical Handover Improvement
<http://www.safetyandquality.gov.au/wp-content/uploads/2012/01/ossie.pdf>
- Improving JMO clinical handover at all shift changes Implementation Toolkit
www.archi.net.au/documents/resources/qs/clinical/clinical-handover/jmo/jmo-handover-toolkit.pdf

Australian Dietary Guidelines

- <https://www.eatforhealth.gov.au>

Food Standards Australia and New Zealand (FSANZ)

- <http://www.foodstandards.gov.au/industry/safetystandards/service/pages/default.aspx>

National Health and Medical Research Council

- Nutrient Reference Values <http://www.nrv.gov.au/>

Dietitians Association of Australia (DAA)

- DAA Nutrition Support Interest Group (2018) Enteral Nutrition Manual for Adults in Healthcare facilities
<https://daa.asn.au/wp-content/uploads/2018/06/Enteral-nutrition-manual-june-2018-website.pdf>
- DAA Nutrition Support Interest Group (2018) Parenteral Nutrition Manual for Adults in Healthcare Facilities
<https://daa.asn.au/wp-content/uploads/2018/06/Parenteral-nutrition-manual-june-2018-website.pdf>
- Watterson et al(2009) Evidence based practice guidelines for the nutritional management of malnutrition in adult patients across the continuum of care
<http://onlinelibrary.wiley.com/doi/10.1111/j.1747-0080.2009.01383.x/pdf>
- Trans Tasman Dietetic Wound Care Group (2011) Evidence based practice guidelines for the dietetic management of adults with pressure injuries
<https://daa.asn.au/resource/evidence-based-practice-guidelines-for-the-dietetic-management-of-adults-with-pressure-injuries/>
- DAA & Speech Pathology Australia 2007, Australian Standardised Terminology & Definitions for Texture Modified Food and Fluids
<https://daa.asn.au/marketplace/publications/>

PEN: Practice-based Evidence in Nutrition

- <http://www.pennutrition.com>

The Australian Council on Health Care Standards (ACHS)

- ACHS Accreditation, Standards and Guidelines: Clinical Function.
<http://www.achs.org.au/> (log in required)
- ACHS (2010) EQUIP Standards 5th ed. criterion 1.5.7.
<http://www.achs.org.au/> (log in required)
- ACHS (2012) EQUIP National, Standard 12.
<http://www.achs.org.au/> (log in required)

Department of Human Services (Victoria)

- Nutrition Standards for Menu Items in Victorian Hospitals and Residential Aged Care Facilities
<https://www2.health.vic.gov.au/public-health/preventive-health/nutrition/nutrition-and-healthy-eating-policies-strategies-and-guidelines>

South Australian (SA) Health

- Developing Quality Consumer Health Information
<https://www.safetyandquality.gov.au/wp-content/uploads/2017/04/Consumer-health-information-needs-and-preferences-A-rapid-evidence-review.pdf>
- Food Hygiene: SA Health, see
<https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/health+topics/health+conditions+prevention+and+treatment/food+safety/keeping+your+food+safe>
- Clinical Handover Guidelines (*SA health employees only*)
http://www.sahealth.sa.gov.au/wps/wcm/connect/cd523300458ad11e9915dd519b2d33fa/guideline_clinical_handover_oct2010_final.pdf?MOD=AJPERES
- Clinical Handover Policy (*SA health employees only*)
<http://www.sahealth.sa.gov.au/wps/wcm/connect/f1460980458acdea98eddc519b2d33fa/ClinicalHandoverDirective-PHCS-SQ-1209.pdf?MOD=AJPERES>
- Evaluating Health Information with Consumers
<https://www.sahealth.sa.gov.au/wps/wcm/connect/8709a1004e45539aacaaf8ba24f3db9/HLT-WritingHealthInfo-T8-PHCS-SQ-20130118.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-8709a1004e45539aacaaf8ba24f3db9-m08t9Gw>
- SA Health Guidelines for Consumer and Community Participation in Health (2008) and Consumer and Community Participation Policy Directive
<http://www.hcasa.asn.au>.

New South Wales Agency for Clinical Innovation

- NSW Agency for Clinical Innovation (2011), Nutrition Standards for Adult Inpatients in NSW Hospitals
http://www.aci.health.nsw.gov.au/___data/assets/pdf_file/0004/160555/ACI_Adult_Nutrition_web.pdf
- NSW Agency for Clinical Innovation (2011) Therapeutic Diet Specifications for Adult Inpatients in NSW Hospitals. <http://www.aci.health.nsw.gov.au/?a=160557>

International Resources

Council of Europe (CoE)

<http://hub.coe.int/web/coe-portal/home>

- Council of Europe Resolution Food and Nutritional Care in Hospitals (2003)
<https://rm.coe.int/09000016805de855>
- Council of Europe; Beck et al. (2002) Practices in relation to nutritional care and support—report from the Council of Europe. (*log in required*)
[https://www.clinicalnutritionjournal.com/article/S0261-5614\(02\)90555-8/pdf](https://www.clinicalnutritionjournal.com/article/S0261-5614(02)90555-8/pdf)

European Society for Enteral and Parenteral Nutrition (ESPEN)

- ESPEN Enteral & Parenteral Nutrition Guidelines (multiple)
- <https://www.espen.org/guidelines-home>

American Society for Enteral and Parenteral Nutrition (ASPEN)

- ASPEN Clinical Guidelines: Nutrition Screening, Assessment and Intervention in Adults (2011)
<http://pen.sagepub.com/content/35/1/16.full.pdf+html>
- ASPEN Enteral Nutrition Guidelines (multiple)
<http://www.nutritioncare.org/> (log in required)
- ASPEN Parenteral Nutrition Guidelines (multiple guidelines available)
<http://www.nutritioncare.org/> (log in required)

British Association for Parenteral and Enteral Nutrition (BAPEN)

- BAPEN (2010) Malnutrition Matters: Meeting Quality Standards in Nutritional Care
http://www.bapen.org.uk/pdfs/bapen_pubs/bapen-toolkit-for-commissioners-and-providers.pdf
- BAPEN (2007) Organisation of Food and Nutrition Support in Hospitals from the British Artificial Parenteral Enteral Nutrition
<http://www.bapen.org.uk/ofnsh/OrganizationOfNutritionalSupportWithinHospitals.pdf>

National Institute for Health and Clinical Excellence (NICE)

- NICE (2006) Nutrition support in adults: Oral nutrition support, enteral tube feeding and parenteral nutrition
(<http://www.nice.org.uk/nicemedia/pdf/cg032fullguideline.pdf>)

Appendix 4.

Malnutrition screening tools

Refer to PEN Malnutrition Knowledge Pathway (25) for a comprehensive list of different malnutrition screening tools appropriate for a variety of patient groups and care settings.

Figure 1: Malnutrition Universal Screening Tool

[Source: SA Health e-MUST, adapted from BAPEN 2005.]

Figure 5: Malnutrition Screening Tool

MALNUTRITION SCREENING TOOL (MST)	
Have you lost weight recently without trying?	
No	0
Unsure	2
If yes, how much weight (kilograms) have you lost?	
1-5	1
6-10	2
11-15	3
>15	4
Unsure	2
Have you been eating poorly because of a decreased appetite?	
No	0
Yes	1
Total	

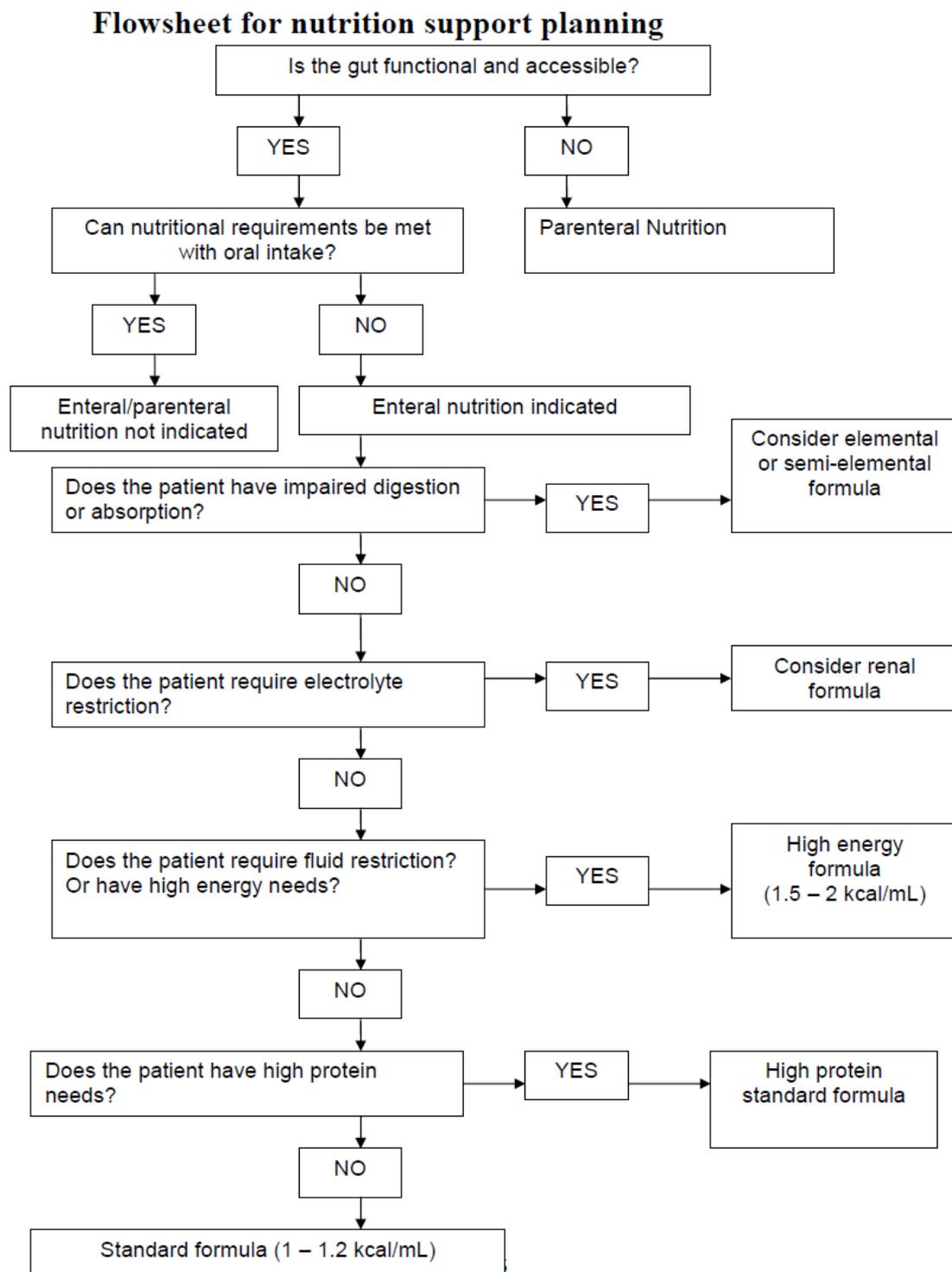
Score of 2 or more = patient at risk of malnutrition.

[Source: Ferguson M, Capra S, Bauer J, Banks M. Development of a valid and reliable malnutrition screening tool for adult acute hospital patients. Nutrition 1999;15:458-64. Reproduced with permission from Copyright Clearance Centre's RightsLink service.]

Appendix 5.

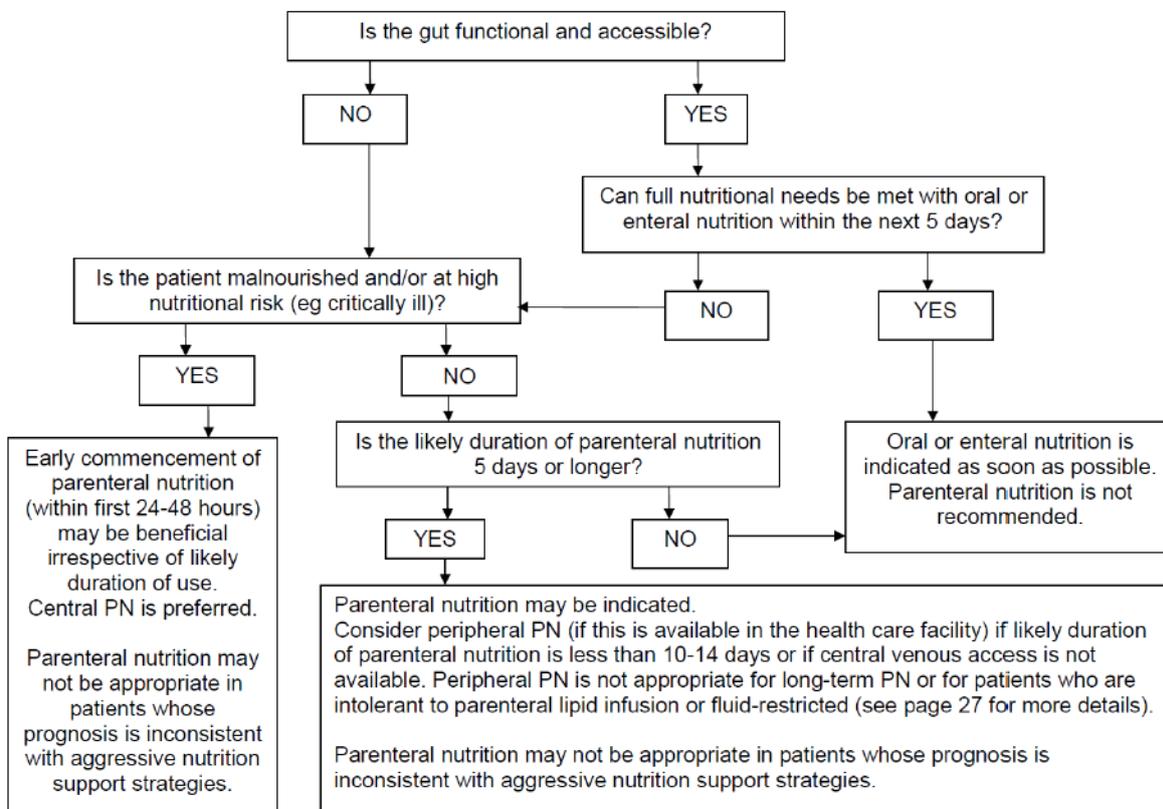
Enteral and parenteral nutrition support decision making

Figure 6: DAA Enteral nutrition support flow chart(27, 28)



[Reproduced with permission from DAA Nutrition Support Interest Group.]

Figure 7: DAA Parenteral nutrition flow chart(27, 28)



[Reproduced with permission from DAA Nutrition Support Interest Group.]

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This information has been independently reviewed by the Dietitians Association of Australia. For expert nutrition and dietary advice contact an Accredited Practising Dietitian (APD). Visit 'Find an APD' at www.daa.asn.au or call 1800 812 942.

This manual is due for review in January 2021.
Questions? Comments? Ideas for improving our manual?
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