



Royal Commission into Aged Care Quality and Safety

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Introduction

The Royal Commission into Aged Care Quality and Safety provides a welcome opportunity to highlight the importance of nutrition and enjoyable food and fluids in the care of older Australians living in the community and in residential aged care homes. The right to adequate food is a human right¹ and is essential for the physical, mental, social and emotional wellbeing of older Australians. Inadequate government and organisational support is contributing to an unacceptably high prevalence of malnutrition amongst older Australians (See Appendix) and food is a common cause of complaint in aged care settings². The lack of provision of adequate food and fluids represents elder abuse by neglect or omission.

As the peak body for dietitians in Australia, the Dietitians Association of Australia considers that safety and quality frameworks for nutrition care must be improved to promote quality of life and to protect the most vulnerable groups in the community against malnutrition, dehydration, food borne illness and other risk of harm related to food and nutrition. Timely assessment and treatment of those with identified malnutrition and implementation of strategies to avoid malnutrition in older adults living in the community or in residential aged care is essential for physical and cognitive health and the reduction of risk of falls and pressure injuries.

This submission considers nutrition in the community, respite care, day programs and residential care. While there are issues around nutritional care of older people in hospital, that has not been in scope of this submission.

We have used Accredited Practising Dietitian throughout the document because it signifies dietitians who are qualified to practice in Australia and who commit to the rigorous standards of the Accredited Practising Dietitian program³ managed by the Dietitians Association of Australia. The Accredited Practising Dietitian program is the foundation for self-regulation of the dietetic profession in Australia and is equivalent to registration under the National Registration and Accreditation Scheme. The credential is recognised by Medicare, Department of Veterans Affairs, the National Disability Insurance Agency and private health funds.

Accredited Practising Dietitians are the professionals to provide medical nutrition therapy to older Australians experiencing malnutrition and dehydration, dysphagia (swallowing problems), chronic disease (e.g. diabetes, cardiovascular disease, renal failure), food allergy and food intolerance. Accredited Practising Dietitians also contribute unique skills and knowledge to lead collaborative efforts which strengthen food and nutrition systems in the community, in residential aged care homes and in home delivered meal programs for older Australians (e.g. Meals on Wheels). The Dietitians Association of Australia considers that there is insufficient support for the involvement of Accredited Practising Dietitians in aged care in contrast to jurisdictions elsewhere. For example, the province of Ontario in Canada requires Long Term Care providers to consult with a registered dietitian regarding nutrition care⁴.

Recommendations for consideration by the Royal Commission

The provision of enjoyable nutritious food and evidence-based nutrition care is a complex undertaking. Improvements in all care settings requires a 'nutrition is everyone's business' approach to the development and implementation of policies and procedures related to nutrition care, food services and hydration, including identifying any risks and implementing interventions to mitigate and manage those risks. Programs must include a system to monitor nutrition care and take action when necessary. Accredited Practising Dietitians have a key role in leading the workforce to improve outcomes for older people.

Recommendations for government

1. Develop and implement a 'National Nutrition Policy' that addresses the nutrition needs of older Australians.
2. Invest in changes to My Aged Care to address nutrition risk experienced by older people. Specific training for staff is needed, including the appropriate use of the National Screening and Assessment form and appropriate response to assessment findings. The use of the Mini Nutritional Assessment screening tool should be routine not supplementary and always included in comprehensive assessment.
3. Update the terminology on the My Aged Care website and service finder to use the term dietitian, not nutritionist. Accredited Practising Dietitians are the professionals qualified to provide medical nutrition therapy, public health/community health nutrition guidance and food service/food supply guidance.
4. Include Accredited Practising Dietitians in Aged Care Assessment Teams, wound care services, and dementia care teams to support older people and to guide other workers in nutrition care.
5. Improve referral pathways to ensure older people who are at nutrition risk on screening by My Aged Care, or are referred by hospital dietitians or general practitioners to community services reach their referral destination. Referrals should also consider the needs of older people requiring end of life care.
6. Identify gaps (via mapping) in community dietetic services to meet the needs of older people receiving CHSP or Home Care Packages who are unable to pay for private practice dietetic services, with funding dedicated to address service gaps.
7. Increase the number of services and duration of service available under Medicare Allied Health Chronic Disease Management items to improve access to Accredited Practising Dietitians working in the private sector for the management of malnutrition and enteral feeding in the community.
8. Introduce a national funded assistive technology program to address inequity in access to dietetic services and nutrition support products such as feeding tubes, feeding pumps, enteral formula, high energy high protein supplements, and fluid thickener in community care or residential aged care.

9. Resource a governance and accountability framework for the implementation of the 'National Meal Guidelines' for home delivered and centre-based meal programs for older Australians.
10. Increase the transparency of reporting of the findings of accreditation for aged care service providers to enable clear sight of trends in failure in relation to food and nutrition care, and responses to sanctions.

Recommendations for Community Aged Care Services

11. Develop and implement a policy and framework to adhere to for 'Nutrition Care' within Community Aged Care Services. As needs escalate to higher level packages, care plans for home support need to include nutrition care plans, particularly if a person has been identified at risk of malnutrition and if a person is receiving meals in the community setting.
12. Introduce malnutrition screening on commencement of Community Aged Care Services and then at regular intervals (e.g. monthly follow-up screening imbedded in the assessment process).
13. Engage Accredited Practising Dietitians to support services with nutrition education and training; to work with meal providers regarding menu planning, special diets, audits and quality management; and to work with service providers to support community education (e.g. cooking classes, supermarket shopping, general nutrition education).
14. Introduce a strategy to improve general practitioner (GP) skills and knowledge to identify and manage nutrition risk, and when to refer to Accredited Practising Dietitians for specialised nutrition care. This would be supported by the inclusion of a validated malnutrition screening tool in the 'Medicare Health Assessment Tool for Older Persons (75+)' to achieve consistency in the malnutrition screening process Australia-wide.

Recommendations for Residential Aged Care Homes

15. Develop and implement a 'Nutrition Care Policy' in all residential aged care homes that includes an onsite Accredited Practising Dietitian (as a consultant or employee) and is supported by a multidisciplinary governance structure encompassing: auditing of food and nutrition systems, malnutrition screening, nutrition assessment, nutrition care planning, menu planning, meal reviews, the mealtime environment, assistance with eating and drinking, staff education and ongoing training.
16. Ensure the framework for 'Malnutrition screening' (as part of the 'Nutrition Care Policy' for residential aged care, outlined above) incorporates a validated screening tool, with monthly follow-up embedded in the assessment process. The framework for malnutrition screening must include initial and ongoing training of all care staff and support workers working in residential aged care in use of the screening tool, prompt referral of all identified as being malnourished or at risk of malnutrition to an Accredited Practising Dietitian and minimum standards for the documentation of screening results and follow up.
17. Establish a multidisciplinary team within residential aged care homes to plan, implement and monitor food and nutrition services which includes an Accredited Practising Dietitian, food service staff, nursing staff, care workers, family/carers and volunteers.
18. Ensure that the funding model to replace ACFI includes consideration of the cost of fundamental components of care
 - food ingredients
 - nutrition supplements e.g. high energy high protein commercial supplements,

- ongoing access to Accredited Practising Dietitians.

Recommendations for Accreditation Surveyors

19. Develop and implement training for accreditation surveyors from the Aged Care Quality and Safety Commission in food and nutrition care with input/guidance from Accredited Practising Dietitians experienced in aged care. Training could be informed by the Dietitians Association of Australia Nutrition Care Audit tool.
20. Ensure that outcomes for older people improve after residential aged care homes fail standards related to food and nutrition by appointing an Accredited Practising Dietitian experienced in aged care to remediation teams to review the food and nutrition systems of that home and oversee the required improvements before sanctions are lifted.
21. Analyse data from the Computer Assisted Accreditation Tool being developed by the Australian Aged Care Quality Agency to refine accreditation procedures and the Single Quality Framework.

Recommendations for Training of the Aged Care Workforce

22. Include food and nutrition training (including malnutrition screening) as a core component of entry level training for all care staff and support workers working in residential and community aged care (including Commonwealth Home Support Programme staff, Home Care Package providers, My Aged Care staff, Regional Assessment Staff).
23. Ensure funding models support in-house nutrition training for all care staff and support workers working in residential aged care, day programs, respite care and community care to keep skills current in malnutrition screening, referral pathways and documentation processes. Funding should support maintenance of services at acceptable levels to older people while workers are off the floor for training.
24. Build competency of staff by reviewing the content of vocational education training qualifications and units for care workers, chefs and kitchen staff to ensure the material developed and delivered is evidence-based and addresses management of food and nutrition related risks experienced by older people i.e. malnutrition, dysphagia, food allergy and intolerance, therapeutic diets, and food safety.
25. Promote better nutrition outcomes for older people, other health professionals, and support workers by including Accredited Practising Dietitians in community education programs directed at reducing the risk of falls, wound management etc.

Recommendations for the Care of older people with Dementia

26. Manage weight loss and other nutrition risks for older people living with dementia by engaging Accredited Practising Dietitians with experience in dementia and aged care in government funded educational initiatives around dementia to support older people and guide support care workers and others involved in dementia care.

Recommendations for the Care of older people with Wounds

27. Ensure that clinical governance arrangements across care settings addresses nutrition as a component of wound care, that nutrition screening and assessment is documented and that Accredited Practising Dietitians are engaged to support team care arrangements.
28. Introduce nutrition training of all health care staff involved in wound care, which covers the

importance of nutrition screening and dietary management of wounds, with referral pathways to an Accredited Practising Dietitian.

Recommendations for End of Life Care

29. Plan and document the nutrition care for each person in advance care plans, as per the Nutrition and Hydration Guidelines for Hospitals and the National Safety and Quality Health Service (NSQHS) Standards.
30. Accommodate food/meal preferences and choices for people at the end of life in consultation with individuals and their families.

Malnutrition in Older Australians

Introduction

The World Health Organization (WHO) recognises malnutrition as one of six contributing factors to the declining physical and mental capacity of older people⁵. Malnutrition increases the risk of falls, osteoporosis and fractures, slow wound healing, morbidity, mortality and contributes to poor quality of life⁶. Malnutrition is an accelerator to entry to residential aged care.

Malnutrition may be defined as two or more of the following characteristics: insufficient energy intake, weight loss, loss of muscle mass, loss of subcutaneous fat, localized or generalized fluid accumulation or diminished functional status⁷. A study published in 2012 identified that the prevalence of malnutrition in older Victorians receiving home nursing services was around 8% and approximately 35% were at risk of malnutrition⁸. In residential care, Australian studies have identified a prevalence of malnutrition from 22% up to 50% (See Appendix). There is a failure in safety and quality systems for the prevention and management of malnutrition in older Australians.

This is such an important issue that the Australian government has recently mandated reporting by residential aged care providers of unplanned weight loss in residents in the National Aged Care Quality Clinical Indicator Program⁹. Prevention and management of unplanned weight loss requires measuring and monitoring, supported by clinical governance and training.

What is missing is leadership by the Australian government in recognising malnutrition in older Australians as a public health issue. The last national food and nutrition policy was released in 1992. A consistent comprehensive and contemporary national food and nutrition policy would address malnutrition alongside chronic disease and obesity. It would also position food and nutrition as an important factor in the promotion of quality of life and prevention of disease.

Contributing factors to malnutrition

There are numerous contributing factors to the unacceptable prevalence of malnutrition amongst older people. Some factors are about the older person, such as social isolation and poor oral health. Accredited Practising Dietitians are concerned when older people accept unintentional weight loss as the norm in later years.

There is also a culture of acceptance by many service providers that weight loss is usual or even desirable. Accredited Practising Dietitians describe a culture amongst care workers or managers which sees unplanned weight loss and underweight as normal. Low levels of nutrition literacy across the aged care workforce contribute to these beliefs.

While some service providers consistently invest in people, policies and food this is not universal. Inadequate investment in nutritious food, screening and assessment processes for malnutrition and the services of Accredited Practising Dietitians to support integrated multidisciplinary approaches to prevent and manage malnutrition are also factors in malnutrition.

Aged Care Services in the Community

Food and nutrition concerns in the community

Older Australians express a preference to remain in their home and community. The ability to maintain self-care activities specific to eating and drinking for nutritional requirements is a key determinant of staying at home (i.e. an ability to purchase enough food, prepare and cook food, consume enough food and to store food safely). The ability to undertake these self-care activities may diminish with dementia, with acute or chronic disease, or changes to socioeconomic situations such as financial stress, carer strain, social isolation, cultural barriers or widowhood.

The experience of Accredited Practising Dietitians is that these issues are not sufficiently identified, nor are responses sufficient when they are identified. Evidence for this are the studies of malnutrition among older adults living in the community and reports of screening for malnutrition at admission to hospital (see Appendix). Lack of time or skills of general practitioners, dysfunctional referral systems (My Aged Care) and inadequate training of the workforce are contributing factors to poor quality and unsafe practices.

Identification and referral for assistance

My Aged Care has capacity to identify care recipients who are at nutrition risk because there are questions in the National Screening and Assessment Form¹⁰ used in the My Aged Care process which asks about shopping, appetite, swallowing, intake, special diet etc. It also references the Mini Nutritional Assessment nutrition screening tool¹¹. Efficacious use of the form and the Mini Nutritional Assessment tool depends on the time and priority set by the assessor from the Regional Assessment Service or Aged Care Assessment Team to ask all relevant questions for an individual and the skills and knowledge to synthesize an appropriate response. Staff employed in Regional Assessment Teams and Aged Care Assessment Teams are rarely from a professional background of dietetics, and the training related to food and nutrition content is limited. As a result, timely and appropriate recognition and response to food and nutrition problems is compromised.

DAA members relate occurrences when malnutrition, unintentional weight loss or underweight have been identified in an Aged Care Assessment but no referral is made to an Accredited Practising Dietitian. The Dietitian only becomes aware of the client after a prolonged period when they are in a debilitated state and referred through other avenues (e.g. community nursing, hospital referrals etc).

Home delivered meals

Initiation of home delivered meals is an appropriate response to problems with self-care related to food for some people. However, delivered meals are intended to only provide half or less of a person's dietary requirements¹², even when prepared according to guidelines (which they may not be). When My Aged Care do not identify all issues impacting on the person's functioning related to eating and drinking, the consumer is exposed to increased risk of malnutrition. If no referral is made to an Accredited Practising Dietitian for full assessment and advice on adequate and appropriate food and drink strategies, the risk of malnutrition increases.

Meal providers should be accountable for monitoring of clients receiving meals and referral to Accredited Practising Dietitians when weight loss or poor intake is observed. DAA members relay that fewer clients are using services like the smaller Meals on Wheels services that have time to build relationships with their clients. They also say fewer older people are using Meals on

Wheels services because fewer Meals on Wheels services are cooking fresh and/or the quality of the meals is not consistent.

Quality of home delivered meals

National Meal Guidelines¹³ exist for service providers, food service operators and health professionals responsible for home delivered and centre-based meal programmes for older Australians, i.e. Commonwealth Home Support Programme meal providers. The absence of regulation, monitoring or evaluation means the quality of meal services is inconsistent across the country and not all meals provided are appropriate for aged care clients.

These issues could be addressed by increased engagement of Accredited Practising Dietitians to support meal providers through menu review, menu planning and meal audits; support with the provision of special diets, texture modified diets and recipe development; use of client satisfaction surveys; and the provider role in nutrition screening.

In some cases, service providers buy in menu items from food manufacturers. However not all products are suitable for older people with particular requirements. For example, some manufacturers produce items for people losing weight or vegetarians meals (which potentially lack sufficient protein and other key nutrients for older people). There is a lack of flexibility in bought-in meal items which makes it difficult to meet the needs of people with combinations of special diets. DAA members say that:

Some providers will not provide meals to care recipients with multiple requirements. This leaves the care recipient without meal supports.

DAA supports the principle of older people making choices and having genuine choice about the food available to them. Being mindful of a duty of care, staff providing services across the home support program setting need nutrition knowledge and behaviour management skills to assist their clients to make choices to suit their health needs. In some cases, the support to access meals is reduced to providing what the client wants with no support for the client in understanding their own nutrition needs. One Accredited Practising Dietitian was told by a provider of Home Care Packages that:

if a client wishes to be driven on a regular basis to a fast-food-chain for meals, then it is their choice.

Day Respite Centres

Day Respite Centres can be the major source of food and nutrition for the day for some clients and so the nutrition provided by meals in this setting is important. Clients attendance at day respite provides an opportunity to identify problems related to food and nutrition, but providers may not see it is in scope or they may assume other services have that covered. Timely initiation of support to address food and nutrition problems is thus compromised if providers do not undertake nutrition screening and referral to an Accredited Practising Dietitian.

Access to professional dietetic care is limited

Prior to the introduction of My Aged Care, Accredited Practising Dietitians were in place in positions funded under Home and Community Care in a number of jurisdictions. Their role was to see individuals, and/or to provide community education and training of the workforce. Many of these positions decommissioned to make way for My Aged Care and so there are fewer funded positions in communities now to perform those valuable roles.

DAA members report that the introduction of My Aged Care disrupted referral pathways and even now older people transitioning from hospital back to the community may not reach their referral destination. Poorly functioning referral pathways, cost and lack of government services are a barrier to care.

Home care service providers may not employ dietitians, dietitians may not be available through local community health services and the older person may not have private health insurance to pay to see an Accredited Practising Dietitian. Access through Medicare Allied Health Chronic Disease Management items is limited to five services per year across all eligible professions where each session is a minimum of 20 minutes (the norm would be 40 – 60 minutes). This is rarely sufficient to meet the complex needs of older people. DAA members report that:

We've had clients denied a referral to a Commonwealth Home Support Program funded dietetic service by My Aged Care as they currently have a level 3 / 4 Home Care Package, yet the client has no funds available in the package for allied health care. According to the Home Care Package guidelines and CHSP guidelines, a client who is in receipt of a package is able to access CHSP funded services if these package funds are exhausted.

In some cases the older person is seen by another provider acting out of scope of practice:

We've had cases with home care providers tell Accredited Practising Dietitians that a client would not need a referral to the dietitian, as the nurse takes care of all the enteral feeding and nutrition education.

Lack of timely referral to an Accredited Practising Dietitian in the community is also reported as a problem when an older person requiring enteral nutrition through a feeding tube returns home from a hospital. Without dietetic review, the initiation of enteral feeding products is delayed, which presents an immediate risk of dehydration and malnutrition when that is the sole source of nutrition for the person. DAA members report that:

Aged Care does not recognise enteral feeding as priority for direct referral to service but referral to meal services is a priority.

Lack of consultation with an Accredited Practising Dietitian exposes the client to paying more for products than they should expect to pay:

There was a situation where a home care case manager decided to order a tray of high protein/high energy nutrition supplements for a client at three times the cost that the CHSP funded Accredited Practising Dietitian was able to provide to the client. The cost of the oral supplements was taken out of the client's package without their knowledge and without consultation with the treating dietitian.

Access to nutrition support products

Nutrition support products include commercial high energy/high protein supplements to be taken orally, enteral nutrition (for feeding through a tube into the stomach or small intestine) or fluid thickeners for people with swallowing problems (dysphagia). Various issues are reported by DAA members in relation to the use of products and equitable access to products.

Service providers caring for older Australians at home or in residential care may claim a supplement where the older person requires enteral nutrition via a feeding tube because the formula and equipment costs more than the usual cost of food. DAA has been alarmed to hear several reports from members, such as the following:

a Home Care Package provider advised a client that he was \$4,000 in debt in his package due to nursing, equipment and consumable expenses and hence he would have to pay for his own

enteral feeds and equipment to cover the cost even though the enteral feed supplement included in the client's package fully covered the cost of the client's enteral feeding requirements.

The World Health Organisation⁵ recommends access to oral supplemental nutrition (e.g. high energy/high protein supplements) combined with nutrition advice for older people affected by undernutrition/malnutrition. While the costs of enteral nutrition through a feeding tube are covered for people on a Home Care Program package, there is no assistance for the purchase of oral nutrition support, fluid thickeners or ready thickened beverages even though the cost of those products may be more than the usual cost of food. There is no national aids, equipment and assistive technology program for older Australians: The cost to access high energy/high protein supplements, enteral feeds, and associated feeding equipment is variable across Australia and often prohibitive to older Australians.

If the care recipient is unable to afford the item, they may not be consumed as intended and there is an increased risk of malnutrition, dehydration or aspiration. Lack of access to such products on Australian government programs may discourage people from taking up packages because they will no longer be eligible for state funded/subsidised nutrition care products.

Accessibility to My Aged Care information

Accessibility to My Aged Care information and therefore nutrition and dietetic services is an issue for some clients. Unless the older person is able to navigate the system i.e. by telephone or computer, or they have an advocate to assist, it can be very difficult to access services. This is a barrier to dietetic care and increases the likelihood of preventable malnutrition.

DAA has made requests to the Department of Health to use the term dietitian, if not Accredited Practising Dietitian, on Departmental web pages related to aged care. However the Department continues to direct people to a 'dietitian or nutritionist' on its website and in the National Screening and Assessment Form. Dietitians are the professionals qualified to provide medical nutrition therapy and to advise on food service systems for people with special dietary needs. This places older people at risk because there is no regulation of nutritionists in Australia.

Nutrition in Residential Aged Care

Weight Loss and malnutrition often precede, even accelerate, entry into residential aged care¹⁴. In residential care, malnutrition and weight loss negatively impact quality of life and health outcomes for residents, while increasing the burden of care for aged care staff and providers. Residents with dementia and disabilities are most vulnerable to malnutrition, which increases the risk of preventable complications such as falls, pressure ulcers and delirium. DAA sees the prevalence of malnutrition to be a result of systemic failure which is not addressed by current practice and accreditation standards.

A systems approach is essential for the prevention, identification and management of malnutrition and other nutrition risks in residential aged care. A culture across all staff must be evident which demonstrates that enjoyable nutritious food is important, and that poor intake and weight loss is not inevitable. The following is an extract from a communication between a physiotherapist and dietitian in 2008 at Makk and McLeay at Oakden in South Australia.

With this combined approach between all disciplines, resident care has shown significant and great gains and quality of life has enhanced. While residents were undernourished, it is not surprising to think that they were unable to engage, let alone mobilise as they did not have the energy reserves to fuel their body for normal daily activities.

Service providers who are leading positive approaches in food and nutrition do so by implementing governance arrangements in consultation with Accredited Practising Dietitians, with support by policies and processes to effect good outcomes for residents. Policies acknowledge and measure nutrition risk and demonstrate a commitment to meeting the diverse needs of residents, guiding all who contribute to nutrition care, including dietitians, cooks and chefs, kitchen staff, nursing staff, personal care workers, managers, health professionals and others.

Leaders in this area provide a seamless experience in terms of the provision of food and do not separate nutrition as an issue of clinical care and food as a hotel service. Enjoyment of food and the role of food in a social and cultural context is acknowledged. This approach requires an investment in food itself and in the workforce, ensuring that food adequately supports resident needs. The provision of food and fluids to meet the diverse needs of residents is a complex undertaking requiring investment in the workforce, including in the services of an Accredited Practising Dietitian to work with management and floor staff, to assist them in acquiring skills and knowledge to support the nutrition and hydration needs of residents.

Screening and assessment

Screening and assessment processes facilitate identification and management of nutrition risk but they must be implemented appropriately. One DAA member visited an aged care home where there was a computer generated screening risk calculated:

It appeared that this score didn't correlate with the score generated manually by the Accredited Practising Dietitian. Upon questioning the Clinical Co-ordinator, it was discovered that only some of the staff entered data (and not complete data) and therefore the score generated wasn't accurate. The Quality Team for that facility endorsed this. Clearly this is not acceptable in terms of identifying nutrition risk and referral on to an Accredited Practising Dietitian.

Cost of professional advice

Accredited Practising Dietitians experienced in aged care have unique skills and knowledge to undertake nutrition care audits, to support menu planning to meet the special and general needs of residents, to advise on nutrition risk screening and assessment, to train other members of multidisciplinary teams implementing food and nutrition systems and contributing to governance processes to improve safety and quality.

Service providers say cost is a barrier to engagement of dietitians or other allied health practitioners as consultants or as employees. However, this fails to account for the high costs associated with malnutrition (falls, pressure wounds and increased staff requirements to support malnourished residents etc).

Some service providers only engage Accredited Practising Dietitians for menu reviews to prepare for accreditation and seek to minimise costs by purchasing desk top assessments of menus. DAA considers this is not adequate and puts residents at risk. Relying on desk top assessments misses issues of poor food quality and a lack of support for consumption of food and beverages. The Accredited Practising Dietitian should visit each home to undertake a complete nutrition care audit, observing activities in the kitchen and the food eaten by each and every resident to provide assurance that nutrition and hydration provision is adequate. DAA members relate the following observations:

Very small amounts of meat in casserole dishes so the protein content of the finished menu item is inadequate

Poor quality meat which has gristle and is tough, entirely unsuitable for soft or modified texture diets

Recipes not followed with impacts on nutrient composition and suitability for special diets

Missing high energy/high protein beverages or snacks on mid-meal refreshment trolleys

Meals left to sit in front of residents that have difficulty in feeding themselves and then being removed without adequate feeding assistance

Meals provided in the form of inappropriate textures that are not appealing or cannot be eaten

Fluids left with no support staff available to encourage consumption.

Allied Health Professions Australia advises that it is essential that the right professional is engaged in the right place at the right time in contrast to the following report of a conversation between an Accredited Practising Dietitian and a registered nurse:

If families think their family member needs a dietitian and we don't agree, then we are happy for them to call someone in, provided they cover the cost themselves. Our nurses generally look after people who are losing weight.

Some aged care organisations and chefs or cooks offering services to aged care providers actively promote the importance of enjoyable 'restaurant quality' meals. This focus can be a boost to the workforce within an organisation and lift the profile of the organisation in the community. But the Commissioners must be acutely aware that while the engagement of high profile and highly skilled chefs raises profiles, it is not enough to ensure residents achieve adequate nutrition and hydration. That requires the combined input of quality food with the professional knowledge of an Accredited Practising Dietitian to ensure that the general and special nutrition needs of aged care residents are met, that food is accessible (especially important in some remote locations), food budgets are realistic and achievable and that food service and care staff have the skills and capacity to provide every resident with access to adequate nutrition.

Cost of care staff

Investment is also required in sufficient numbers of staff to assist residents. Accredited Practising Dietitians report that:

When trying to advocate for suitable finger food to be provided to residents with dementia, they are often provided with party pies or other deep fried foods of little nutritional value. More typically the kitchen is too busy to do anything other than provide them with a plated

meal, where the resident may not even be able to identify cutlery, let alone feed themselves. The care staff are too busy to take more than five minutes to feed them because they have other residents that need help too. Those other residents then need to wait and their food is cold by the time it's their turn.

Cost of food

In an Australian survey conducted over the 2015 and 2016 financial years, compiled from 817 residential aged care facilities, representing 64,256 residential beds and 23 million bed-days Australia-wide, the average total spend on the raw food and ingredients budget alone was \$6.08 per aged care resident per day, and this was less compared with previous years¹⁵. This is the first time such figures have been published in Australia. Some DAA members would like to see a minimum spend on ingredients and menu items but there are no recommended figures because the funding needed to buy ingredients to provide meals which are 'varied and of suitable quality and quantity' is dependent on many factors including the skills of the workforce preparing the food, the profile of residents and the geographical location of the home. That said, it is challenging for an organisation to meet the general and special needs of residents when spending an average of only \$6.08 per day.

Quality of food and choice

Published studies in Australia and reports of complaints by families and service recipients demonstrate an underinvestment in food. DAA members experienced in residential aged care throughout Australia report that real choice is limited^{16,17}, especially when there are combinations of special diets or modified texture diets because of swallowing problems. Real choice is important for residents given they are generally unable to help themselves to food because it is only available when at times determined by the care home or because they are physically unable to help themselves to food. Conversations with advocates for culturally and linguistically diverse groups reinforce the reports of dietitians that cultural preferences may not be met in the food offered to residents. The lack of enjoyable nutritious food is a key factor in poor intake leading to malnutrition. DAA members have observed:

Extremely limited choices with meals (e.g. only one item on the menu), with a sandwich provided if the item is disliked, with sandwich fillings often limited to processed meat (e.g. ham or salami).

Extremely limited choices among residents on modified texture diets, with some sites only offering 3 vegetable options: mashed potatoes, mashed pumpkin or mashed carrots.

Residents being provided with foods that they have documented allergies or intolerances to (e.g. exposure to gluten on a gluten-free diet).

Special diets being catered for by omission (e.g. omitting milk and not providing an alternative to clients with a milk protein allergy or lactose intolerance).

Residents requiring specialised diets (e.g. low potassium) receiving foods that are the same as everyone else.

Some residents on vegetarian diets being provided with meals of just vegetables only because the cooks are not confident cooking with pulses and legumes, resulting in very low protein intakes and an increased risk of malnutrition.

Modified texture diets and thickened fluids

Modifying the texture of food is necessary for care recipients who are at risk of dysphagia or who have oral health issues. This presents a particular challenge in maintaining the energy, protein and nutrient density of food while presenting appealing and tasty food. Inadequate attention to modified texture diets is a common contributor to weight loss which accelerates decline in swallowing, and reduces the ability of the resident to maintain clear airways. The involvement of an Accredited Practising Dietitian when textural changes are prescribed can help reduce this nutritional impact.

Some service providers take pride in presenting nutritious and tasty modified texture food and thickened fluids for people with swallowing dysfunction. In some cases molds are used but this depends on skills, time, space or equipment, e.g. freezers to store molded puree foods, to make texture modified food appealing. Accredited Practising Dietitians report that they often encounter staff who say:

It is not important to make the puree food look more palatable to residents with dementia because they don't have the cognitive ability to tell the difference.

And despite feeding guidelines, some staff are still seen to:

mix up all of the plated food into one unappetising colour, rather than feeding the different foods and colours separately, so that the resident can savour the different tastes.

Quantity of food

The quantity of food served must be enough to meet the needs of care recipients. Some older people are not able to eat large amounts and so it is important to provide smaller amounts of nutritious food and fluids at meals and mid-meals. The site audit during a menu audit carried out by an Accredited Practising Dietitian identifies issues with staff adherence to requested serve sizes and where small serves are required, the Dietitian can initiate food fortification or supplementation to minimise ongoing weight loss or malnutrition among small eaters.

Food first, before commercial supplements

In most cases fortifying ordinary food is the preferred approach when a care recipient's intake is poor because it is more appealing, reduces taste fatigue (where individuals get tired of commercial supplements which they consider 'taste the same every time') and is less expensive than commercial supplements. Accredited Practising Dietitians can work with cooks, chefs and care staff to determine the most cost effective, acceptable means of boosting the nutritional content of foods and drinks to maximise nutrition for each individual. However, DAA members have observed:

Care staff rejecting Accredited Practising Dietitian requests for food fortification as the first approach for a client, with the rationale given that this is not possible for the kitchen to carry out.

One residential aged care home was found to routinely use an expensive and inappropriate dietary powder supplement (intended for another purpose) in all texture modified meals. Advice was provided by an Accredited Practising Dietitian to apply a 'Food First' approach, which resulted in large cost savings with no deterioration in weights or nutrition of the residents.

High energy/high protein commercial supplements are useful when nutritious and appetising meal and snack strategies have been tried but the resident continues to not eat or drink enough. The cost of these products is justified in the context of reducing other costs e.g. wound dressings for pressure injuries which heal more slowly without adequate nutrition. But Accredited Practising Dietitians say some providers refuse to use supplements on the basis of cost:

Residents on maximum food fortified meals and also supplements continuing to lose weight. It has been subsequently discovered that the residents weren't receiving these supplements because the staff were too busy, or didn't read the supplement list.

In one instance, these supplements weren't replaced with anything else, nor was there any intention to do so.

In other situations, high protein/high energy supplements have been ceased by the facility because they are "too expensive" and they "don't have the money".

In some cases Accredited Practising Dietitians report that they have been told by facilities that a resident needing high energy/high protein supplements will have to pay for them, even though the family can't afford them. This is at odds with the Quality of Care Principles 2014 legislation which describes services that must be provided for all care recipients who need them including 'Special dietary requirements, having regard to either medical need or religious or cultural observance'¹⁸.

Clinical governance

Aged care residential homes may not employ an Accredited Practising Dietitian but rather will call on an ad hoc basis if they perceive a resident requires review. The absence of a regular arrangement to contribute to development of clinical governance arrangements, development of policies or procedures, or training of the workforce in food and nutrition related matter exposes residents to increased food and nutrition related risk. DAA members have identified the following issues:

Poor documentation of dietary needs, with no reference to documentation (e.g. dietary prescriptions) when serving.

Care homes leaving referrals to the Accredited Practising Dietitian until the Body Mass Index was as low as 12kgm⁻² (which indicates an extremely low body weight, older adults with BMI <23 kgm⁻² are at greater risk of harm¹⁹.)

An Accredited Practising Dietitian was called into a residential aged care home to see a lady on a PEG feed who had lost so much weight she was down to 35kg (BMI<14). It was June and she was told that the feeding rate of 1 calorie/ml had been dropped down to 500ml per day because of reflux issues identified in February by the nurses/doctor. The Accredited Practising Dietitian asked to see where in the history that had been recorded, only to find that it was actually document one year before. So this lady had been receiving 500kcal per day through the PEG and nil-by-mouth for well over one year. There had been no dietetic follow up at all since the PEG was placed, with the nurses claiming they could manage the feeds. The Accredited Practising Dietitian recommended an increase in the feed with adequate follow up, but the lady died of malnutrition a short time later.

One patient in an Adelaide home lost 15kg on her PEG feeds in the space of one month because she had deteriorated on an oral diet and the PEG feeds were no longer adequate.

This person was a young lady with Motor Neurone Disease who resided in an aged care home, but not imminently dying. The aged care home failed to engage the expertise of an Accredited Practising Dietitian to adjust the feeds, hence the patient presented to hospital one month later and stayed more than two months, largely due to malnutrition.

Excellent care

There are service providers who see the importance of offering enjoyable food and ensuring the nutritional needs of their residents are met. One member from Queensland described aged care homes which:

take a proactive approach to nutrition care by contracting an Accredited Practising Dietitian for regular weekly hours to review residents as required, rather than taking a reactive approach of referral for one individual after weight loss has occurred.The menu is reviewed regularly, with changes based on resident requests. This is a highly effective model of care and allows the Accredited Practising Dietitian to provide regular, individualised nutrition care to the residents and food service staff.

One group of Accredited Practising Dietitians experienced in residential aged care describe an approach adopted by most of the residential aged care homes that they service where they work with the staff to:

develop an individualised approach to a high energy/high protein diet, rather than a standard 'one diet for all'. A list of appropriate alternatives is drawn up and these are tailored for the individual (e.g. options for extra desserts, particular milkshake flavour, plain milk, cheese and crackers etc.), with all items ready on hand.

Aged Care Standards and Nutrition

The accreditation framework has a primary role in ensuring that older people living in residential care homes and the community are supported to maintain or improve their nutritional status, health and wellbeing. Where food is provided, accreditation processes concerned with safety and quality should give confidence that systems are in place to allow older people the opportunity to eat nutritious enjoyable food to meet physical, social and cultural needs.

DAA has been critical of the current Aged Care Standards²⁰ because they are so general. We remain concerned that the new Aged Care Standards²¹ to be used for accreditation from July 2019 do not explicitly stipulate nutrition, rather only that meals provided should be 'of adequate quality and quantity'. The guidance material accompanying the standards provides some assistance but it still requires interpretation by service providers and accreditation surveyors.

Quality Standards in other industries contain detailed processes to investigate and carry out root cause analysis of issues and then apply corrective action as well as long term review of success (or failure) of actions taken. These Standards, due to their generality, do not adequately enforce corrective action or review of action taken on specific failures.

The need for interpretation presents a challenge because accreditation surveyors rarely have professional backgrounds in nutrition and dietetics. They do not know what to look for in terms of determining if individuals have received adequate nutrition and have little or no training in

the very complex food and nutrition systems which exist, even in smaller residential care settings. Additionally, assessors rarely, if at all, ask guidance or even question Accredited Practising Dietitians engaged in care homes during their assessments.

Accredited Practising Dietitians experienced in aged care report that accreditors interpret the current Aged Care Standards inconsistently. For example, one provider who generally performs very well with respect to provision of food and nutrition, was found not to have met the Standards because a single resident with dementia with very difficult behaviour refused a variety of food and nutrition supplements and the facility was marked down because the resident was very underweight. And yet facilities which have previously passed accreditation are later found to be so inadequate in provision of nutrition that sanctions are applied.

DAA members experienced in aged care have observed instances where residential aged care homes have passed accreditation, despite their own professional assessment being that the nutrition and hydration needs of all individuals living in these homes has not been adequate.

DAA has developed a Menu Audit Tool to be used by Accredited Practising Dietitians to assess nutritional adequacy of menus and food service processes. DAA considers that accreditors can rely on the outcomes and recommendations of that tool to determine whether homes have adequately met nutrition standards.

In situations where a home has failed the current Standard 2.10 (Care recipients receive adequate nutrition and hydration)²⁰, then by definition those care recipients have suffered elder abuse by neglect or omission. Providers who have failed this standard apologise and promise improvement, but DAA members experienced in aged care have witnessed instances where improvement has not sufficiently resolved the failures and yet sanctions have been lifted.

When sanctions are applied to a residential care home because of failure in nutrition and hydration, the appointment of a dietitian to assist in implementing remedial action is dependent on the nurse advisor who is overseeing remedial action. DAA considers that it should be routine to appoint an appropriately experienced Accredited Practising Dietitian as the professionals with the skills and knowledge to guide actions of multidisciplinary teams undertaking remedial work to in such cases.

Nutrition Training for the Aged Care Workforce

The successful implementation of integrated nutrition care and the provision of nutritious enjoyable food is a complicated undertaking. It requires a trained workforce working within their scope of practice and present in sufficient numbers who are guided by contemporary policies and procedures.

Skills and knowledge of personal care workers and other staff

Nutrition literacy levels in the population are generally low, especially when it comes to the unique needs of older people, so it is important that staff have good quality training experiences where they learn on the job. Staff with vocational education training may have completed Certificate III in Individual Support or Certificate IV in Ageing Support level courses without studying any food or nutrition component. This impacts on quality of care when personal care workers assisting aged care clients in the community with grocery shopping and meal preparation do not have basic understanding of food and nutrition.

Service providers may face difficulty in recruiting qualified chefs, especially in rural and remote areas. Chefs and cooks may not have sound knowledge of therapeutic diets, and may be more uncertain when there are combination diets required. The outcome for the older person is a meal which lacks the necessary nutrients or includes items which pose a risk of harm.

Unsafe practice is observed when the enteral nutrition care of older people receiving a Home Care Program package is provided by a care worker without appropriate training or supervision. Food service staff knowledge of Australian standardised definitions and terminology for texture-modified foods and fluids (required for people with dysphagia and disabilities) is frequently inadequate due to lack of competency-based training and a high staff turnover. Nutrition care must be person-centred care but personal care workers or lifestyle staff may order meals for residents without reference to their needs or preferences.

For problems which arise after services at home have been initiated, the limited food and nutrition knowledge of in-home support teams, i.e. personal care workers, registered nurses and other allied health workers, limits appropriate basic support to older people. It is a barrier to identifying food and nutrition problems and escalation of referral to an Accredited Practising Dietitian for higher level support. DAA members are concerned that:

Individuals with obvious weight loss or pressure ulcers are not being referred to an Accredited Practising Dietitian.

My Aged Care workforce

Staff employed in My Aged Care call centres and Regional Assessment Services make decisions about referrals to Accredited Practising Dietitians, even though they have little or no training in nutrition screening and little idea of the role of the dietitian. Regarding Aged Care Assessment Team, DAA members report that:

ACAT teams that are not referring to Accredited Practising Dietitians despite recognising malnutrition, low body weight, unintentional weight loss etc in their assessments.

Scope of practise of professionals

Health professionals with inadequate knowledge of the specific and diverse nutrition needs of older people may not identify problems which should be escalated to an Accredited Practising Dietitian. They may feel under pressure to support care recipients and so act out of scope of practice by attempting higher level nutrition care using their own beliefs thus compromising patient safety and quality. One DAA member working in the community reported that:

the first time I was aware that there was a client with a wound, was when the registered nurse asked where to purchase 'Arginaid' (a commercial nutrition supplement designed for people with chronic wounds). In another case, I was asked by the registered nurse whether there was anything they should tell the client 'nutrition-wise' to help with the wound healing.

In another situation an aged care Accredited Practising Dietitian was concerned that the lack of knowledge of nutrition and the importance of including the Accredited Practising Dietitian in the care team impacted poorly on the quality of care when speaking with one of the two consultants who the Department of Health had appointed to a home under sanctions. The Accredited

Practising Dietitian:

was alarmed that, in one section of the home that housed some 60+ residents, more than 50% were either at risk of malnutrition or were malnourished (as assessed by the Mini Nutrition Assessment). One of the consultants commented: "Oh being at risk of malnutrition is to be expected in aged care and the nurses can manage that".

Dietetic workforce

Dietitians also require preparation prior to graduation and after entry to the profession to ensure they can support older people and others contributing to nutrition care systems. Many Accredited Practising Dietitians working in aged care are engaged as consultants and this presents barriers to providing experiences for student dietitians. New models of training and funding are needed to enable student dietitians to gain experience in aged care.

Better care is possible

DAA recognises there is a wide range in the quality of care delivered. Some service providers are investing in training to improve the care of older people:

At one residential aged care home that was identified with numerous episodes of cross contamination with gluten, food service procedures were reviewed and training was introduced by an Accredited Practising Dietitian regarding the requirements of a gluten-free diet. The result was an improvement in resident health, including weight gain and no more episodes of diarrhoea.

Nutrition and Dementia

Nutrition issues in dementia

The term dementia includes a number of diagnoses and symptoms which include reduced appetite, apparent disinterest in food, altered mood, elevated distractibility, memory issues (e.g. forgetting if he/she has just eaten), confusion and excessive activity. All of these can negatively impact food intake and nutritional status.

Approximately 50% of all people have lost bodyweight in the year prior to diagnosis. This weight loss is indicative of loss of lean body mass and malnutrition. Any loss of lean body (muscle) mass in an older person potentially increases morbidity and mortality. Weight loss in someone living with dementia rapidly impacts quality of life as well as physical and cognitive capacity.

An understanding of nutrition risks associated with dementia can identify modifiable issues around eating to assist individuals to continue enjoyment of food and drinks and maintain adequate nutritional intake. The observation of DAA members is that more needs to be done in all care settings to ensure nutrition screening and assessment is in place, and that processes are in place to ameliorate the impact of dementia on nutrition.

Normalisation of malnutrition

DAA considers that one of the contributing factors to lack of action related to dementia is that food related problems are seen as routine and that nothing can be done to address these problems. Members report:

Accredited Practising Dietitians are often told by care staff that it is too difficult to feed residents who 'wander', with the rationale that 'they can't stop them to eat'.

Accredited Practising Dietitians are often told "all people with dementia lose weight - it just happens".

Supporting access to food

Residents in care are generally dependent on others for their food and for assistance when they are less able to feed themselves. DAA members report that:

Care staff tell dietitians that they are too busy to take the extra time it requires to feed residents with behavioural issues, as have "too many other people to feed".

Food is not available overnight. Some of the unsettled behaviours in the night can be a consequence of hunger, especially for restless residents.

Excellent care

One group of Accredited Practising Dietitians developed a series of snacks suitable to be given at any time in the dementia unit. Rather than relying on the standard mid-meals, staff are able to provide items at any time. Reliance on high protein/high energy supplements has reduced and resident's weights have stabilised.

Nutrition and Pressure Injury

Nutrition and pressure injury

Pressure injury prevalence has been reported at 16–23% in combined hospital and residential aged care populations^{22,23} and chronic leg ulcers affect 1–3% of population aged over 60 years, with incidence increasing up to 5-10% of the over 80 years age group^{24,25}. The impact of pressure injuries has been recognised by mandating collection of prevalence data in the National Clinical Indicator program from July 2019. Wounds contribute significantly to costs in aged care in wound supplies, in staff time associated with treatment of wounds but also in assisting individuals incapacitated by wounds and of course, wounds drastically impact quality of life for individuals.

Nutrition screening and treatment of any degree of malnutrition is integral to the prevention and healing of pressure injuries and related wounds in adults²⁶. Research consistently shows that "oral eating problems, weight loss, low body weight, undernutrition, and malnutrition are associated with an increased risk for pressure injuries". In addition, 'inadequate nutrient intake and low body weight are associated with slow and non-healing wounds'. Furthermore, 'early nutrition intervention supports lean body reserves by preventing or delaying protein and energy deficits and their impact on pressure injury risk and healing'²⁷.

Better outcomes in wound healing are achieved when the older person is eating and drinking well, or is supported with additional nourishing fluids and snacks to promote adequate intake. This is just as important as wound dressings. DAA members report however that in some homes there is a culture of 'nurse knows best' and comprehensive supports, including referrals for specialist nutrition advice from Accredited Practising Dietitians, are not in place.

Excellence of care

Some providers are providing holistic care as demonstrated in the following examples:

When working with one of the Community Aged Care services, all of the registered nurses were trained in wound care and rotated through at the Wound Clinic. All were aware of the importance of nutrition in wound healing so dietetic referrals were great. The Wound Clinic was staffed at all times, by a registered nurse, a podiatrist and an Accredited Practising Dietitian. The outcomes for care recipients in terms of wound management and healing were much improved.

At one site that was sanctioned, an Accredited Practising Dietitian identified multiple issues with the provision of nutrition. Rates of significant wounds was very high. Many initiatives were introduced to improve wound care, including fortification (e.g. in-house milkshakes, a wound supplement) and better nursing care. All wounds were healed, including in one resident who was told she would 'die with the wound'.

Nutrition in End of Life Care

Nutrition is an important part of advance care planning, especially when texture modified meals, thickened fluids and enteral feeds are required. Not eating is part of the process of dying so it is normal for people to eat little or no food at that time, and while associated weight loss is common, it may not occur until the final days in some people.

The food service systems supporting residents in the community, aged care facilities need to be flexible and varied to meet the needs of those person's approaching the end of their lives. Food and support around food and nutrition should add "quality" to their lives, but in many cases it doesn't.

People should have an eating and hydration plan that supports dignity and quality of life, keeping them as comfortable as possible while addressing requests. Family members and carers should be reassured that all appropriate measures are being offered for the enjoyment of food, as appropriate and as desired by the individual.

Accredited Practising Dietitians observe issues in end of life care which reduce the quality of care including the following:

There is a delay in the request for services from My Aged Care for clients requiring palliative care, as clients are still required to undergo a wellness and reablement assessment.

Clients may request meal providers cease providing meals once they reach the end stages of life, because they are eating so little they no longer see the value of receiving meals. But for those at home alone this can be traumatic for the client and the service provider. It often means clients are left with no community visits and no social support. This highlights the importance of the social aspect of eating with someone to support them even if they eat very little is an underrated aspect of services like Meals on Wheels.

Food and nutrition are often not discussed during end of life care with family or patients, nor is it included within advanced care plans.

When weight loss is observed in a resident approaching end of life, that "you don't need to worry about them - they are palliative".

Organisations have no processes to accommodate food/meal preferences at the end of life. It is commonly stated that “they just won’t eat anymore”, but if provided with something of their preference, in most cases they will eat.

Accredited Practising Dietitians are rarely included in palliative care teams and the development of advance care plans.

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Appendix: Studies of malnutrition in older Australians

Older Australians in the community and in residential aged care represent a heterogeneous population i.e. some are well nourished, some are overweight or obese, some are malnourished. Research shows that up to 50% are either at risk of malnutrition or are malnourished. Malnutrition is defined as two or more of the following characteristics

insufficient energy intake, weight loss, loss of muscle mass, loss of subcutaneous fat, localized or generalized fluid accumulation or diminished functional status¹.

There are many contributors to the development of malnutrition. People with malnutrition are at higher risk of falls, infection and pressure wounds and they experience greater mortality than people who are well nourished. They also experience longer recovery from illness or injury and are less able to carry out activities of daily living.

There are a variety of tools available to screen and assess malnutrition in different care settings. These have been reviewed and summarised in 'Nutrition Education Materials Online' (NEMO) on the [Queensland Health website](#).

While there is no single marker for malnutrition, unplanned weight loss is a key indicator of malnutrition risk. It is possible to be overweight or obese and also malnourished, as any weight loss at a later age can significantly impact lean body mass and therefore immune capacity, wound healing ability and more. Studies show also that there is an increased risk for older people with a Body Mass Index (BMI) <23.0 kgm². Monitoring of body weight is essential in both residential and community aged care settings.

The involvement of Accredited Practising Dietitians is vital where unplanned weight loss is identified as they are uniquely qualified to lead integrated strategies for the prevention and management of malnutrition. Better outcomes in treating malnutrition and hydration are achieved when organisations implement proactive policies and when collaboration occurs with older people, carers, nursing, medical practitioners, allied health professionals, food service managers and staff, aged care workers and service managers.

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Summary table showing prevalence of malnutrition in Australian studies

The table below is a summary of Australian studies in malnutrition. While the focus in this document is residential care and community settings, the prevalence of malnutrition in Australian hospitals is also of concern. Most hospital programs aim to screen and assess patients soon after admission, which reflects nutritional status prior to admission to hospital. This is not to say however that a great deal more needs to be done to address malnutrition in hospital, whether it is pre-existing or not.

Author	Year of publication	Age of subjects	Number subjects	Malnutrition prevalence	Assessment Tool	Practice setting	State/Territory
Hamirudin et al	2016	>75 yrs	72	1.4% malnourished 27.8% at risk	MNA-SF	General Practice	NSW
Hamirudin et al	2016	Mean: 85±5.8 yrs	79	61.8% at risk or malnourished	MNA	DVA	NSW
Walton et al	2015	Mean: 81.9 (±9.4) yrs	42	5% malnourished 38% at risk	MNA	MoW customers	NSW
Winter et al 2013	2013	>75 yrs Mean age: 81.3 ± 4.3 yrs	225	1 malnourished person 16% At Risk	MNA-SF	General Practice	VIC
Ulltang	2013	Mean age: 62 yrs	153	17% malnourished	SGA	Hospital – MAPU	QLD
Charlton et al	2013		774	34% malnourished 55% at risk	MNA	Older Rehabilitation Inpatients	NSW
Manning et al	2012	Mean: 83.2±8.9 yrs	23	35% malnourished 52% at risk	MNA	Hospital	NSW

Charlton et al	2012	Mean: 80.6±27.7 yrs	2076	51.5% malnourished or at risk	MNA	Older Rehabilitation Inpatients	NSW
Kellett	2013		57	26% moderately malnourished 7% severely malnourished	SGA	RACF	ACT
Kellett	2013		101	20% moderately malnourished 2% severely malnourished	SGA	RACF	ACT
Kellett	2012		189	47% moderately malnourished 6% severely malnourished	PG- SGA	hospital	ACT
Gout	2012	59.5 +/- 19.9 yrs	275	16% moderately malnourished 6.5% severely malnourished	SGA	Hospital	VIC
Ackerie	2012		352	19.5% moderately malnourished – Public 18.5% moderately malnourished - Private 5% severely malnourished – Public 6% severely malnourished - Private	SGA	Hospital – public and private	QLD
Sheard	2012	Mean 70 (35 -92)	97	16% moderately malnourished 0% severely malnourished	PG-SGA		
Agarwal	2010	64 +/- 18 yrs	3122	24% moderately malnourished 6% severely malnourished	SGA	Hospital	QLD
Rist	2009	82 (65–100) yrs	235	8.1% malnourished 34.5% at risk of malnutrition	MNA	Community	VIC metro
Vivanti	2009	Median 74 yrs (65–82)	126	14.3% moderately malnourished 1% severely malnourished	SGA	Hospital – Emergency department	QLD
Gaskill	2008		350	43.1% moderately malnourished 6.4% severely malnourished	SGA	RACF	QLD
Adams et al	2008	Mean: 81.9 yrs	100	30% malnourished 61% at risk	MNA	Hospital	
Leggo	2008	76.5 +/- 7.2 yrs	1145	5 – 11% malnourished	PG - SGA	HACC eligible clients	QLD
Brownie et al	2007	65-98 yrs	1263	36% high risk 23% moderate risk	ANSI	Community setting	

Thomas et al	2007	Mean: 79.9 yrs	64	53% moderately malnourished 9.4% severely malnourished	PG_SGA	Hospital	
Walton et al	2007	Mean: 79.2±11.9	30	37% malnourished 40% at risk	MNA	Rehabilitation Hospitals	NSW
Banks	2007	66.5/ 65.0 yrs 78.9 78.7 yrs	774 1434 hospital 381 458 RACF	Hospital 27.8% moderately malnourished, 7.0% severely malnourished (2002), 26.1% moderately malnourished, 5.3% severely malnourished (2003) RACF 41.6% mod malnourished, 8.4% severely malnourished (2002), 35.0% moderately malnourished, 14.2% severely malnourished (2003) malnourished	SGA	Hospital RACF	QLD – metro, regional and remote
Collins et al	2005	Mean: 80.1 ±8.1	50	34% moderately malnourished 8% severely malnourished (at baseline)	SGA	Community	NSW
Lazarus et al	2005	Mean: 66.8 yrs	324	42.3% malnourished	SGA	Acute Hospital	NSW
Martineau et al	2005	Mean: 72 yrs	73	16.4% moderately malnourished 2.7% severely malnourished	PG-SGA	Acute Stroke Unit	
Neumann et al	2005	Mean: 81 yrs	133	6% malnourished 47% at risk	MNA	Rehabilitation Hospital	
Visvanathan et al	2004	Mean: 76.5-79.8 yrs	65	35.4-43.1%	MNA	Rehabilitation Hospital	SA
Visvanathan	2003	67 – 99 yrs	250 baseline	Baseline 38.4% not well nourished 4.8% malnourished	MNA	Domiciliary care clients	SA metro

Patterson et al	2002	70-75 yrs	12,939	30% high risk 23% moderate risk	ANSI	Community setting	
Middleton et al	2001	Median: 66 yrs	819	36% malnourished	SGA	Acute Hospital	NSW
Beck et al	2001	Mean not available	5749	7-14% malnourished in acute setting 49% malnourished in rehabilitation setting	MNA	Acute and Rehabilitation Hospitals	NSW
Burge & Gazibarich	1999	>65 yrs Mean: 75.2 ±5.8 yrs	92	-High risk: 27% (score of 6 or more) -Moderate risk: 30% (score of 4-5) -Low risk: 43% (score of 0-3) -Most common nutrition risk factors: polypharmacy (47%), eating alone most of the time (45%) and dietary modification due to illness (35%).	Australian Nutrition Screening Initiative (ANSI)	Community living (Senior citizen's centres)	NSW Regional
Cobiac & Syrette	1996	>70 yrs	1098	30% high risk 20.6% moderate risk	ANSI	Community setting	

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