Summary of our Submission

We provide background and evidence for the following statements:

- Foodservices is a critical part of the aged care sector, both residential and community based.
- Foodservices in this context have been trivialised and do not receive the level of attention required.
- The national standards are ambiguous and inadequate and difficult to interpret as a result of this ambiguity, allowing variations in interpretation.
- There has been significant distraction through media which has deflected attention from real issues.
- Solutions should be developed using a systems approach and a nutrition risk management framework.
- For the past 40 years the same issues of malnutrition, staff skills, foodservice design, foodservice management still plague this industry. This will continue to be the outcome unless there are pragmatic changes to the standards to become systems based and linked to quality outcomes.
- Qualified foodservice dietitians are the professional group best placed to provide guidance in foodservice provision. They should be responsible for assessing standards as part of the accreditation processes.
- Staff are key and additional skills development training should be resourced.

The UQ Victus Foodservice Group brings together national and international experts in foodservice spearheading research focussed on vulnerable populations[1].

We use a pragmatic research paradigm[2] to create solutions that are practical, scalable and that respect clients and recognises the workers within the system.

We are connected with industry, future focussed while learning from experience, and professional, with a strong social justice and ethical basis to our work.

The UQ Victus Group is a serious attempt to improve the science of foodservices and make lasting change which will improve the quality of nutritional care for vulnerable populations. To put in bluntly this group is tired of the inaction in the aged care sector, the distractions caused by well-meaning individuals who have insufficient qualifications to make lasting

[1] See Appendix 1 for list of members, qualifications and experience

[2] See Johnson RB and Onwuegbuzie AJ, Mixed methods research: a research paradigm whose time has come. Educational Researcher, 2004 https://doi.org/10.3102/0013189X033007014. The authors argue that mixed methods research is a valid "third path" and that it offers a complementary system grounded in the real world. There is a significant literature around the view that mixed methods, as well as implementation science offers more promise in systems work than randomised controlled trials or qualitative methods only. Because they are relevant to what actually happens in practice, they are more likely to provide solutions that work.

change and the aged care sector itself not developing best practice models and systems which provide the care residents both in care and the community expect and deserve.

Foodservices in Residential Aged Care

Foodservice in aged care has been the focus of many complaints, especially in the media, but the good work that is being undertaken in the sector is often overlooked. UQ Victus Foodservice Research Group has leading researchers with more than thirty (30) years of research and work in this context including for the Commonwealth of Australia *Encouraging Best Practice in Residential Aged Care: Nutrition and Hydration* [3]. The group currently has four (4) doctoral students studying various aspects of foodservice in aged care systems. Our experiences have helped shape our views and projects around foodservice for this vulnerable group.

Foodservice is important and is critical in Residential Aged Care

Foodservice is one of the most important parts of any aged care home. The importance of food cannot be underestimated as it forms part of every resident who lives in the home. Food is an important part of everyone's life. Food preferences and habits are acquired from a lifetime of experiences. The foods that resonate with memories are built-up over a lifetime. It is those memories that link residents to their lives, family and friends. Food has a comforting aspect and underpins who we all are.

Your likes and dislikes, and the foods which bring you comfort and fill your life with joy remain on entrance to aged care. Where once you had access to a fridge, food cupboard and being able to eat what you wanted when you wanted, everything changes. The whole meal environment changes where the menu is created by others, and meal preparation is mostly limited to the odd activity event. Meals are shared in a dining room or eaten in rooms. The day is set to a food clock with meals time determine with little flexibility for change. Where once meals were consumed at times of personal convenience, the day's routine is set around meal times. It is all so different and residents have to adjust to a new way of life. One of the stark changes is the variety of food and how the larger evening meal, becomes the larger lunchtime meal, although this is not universal across the system.

Our research has clearly showed that when foodservice systems are correctly and appropriately reviewed in terms of the whole foodservice system, deficiencies in key areas such as meal delivery, temperature support of meals, meal quality, meal equality, food safety, management of diets and texture modified meals all became evident. All of the homes studied as part of this research (KA doctoral studies) were accredited at the time of

[3] https://agedcare.health.gov.au/tools-and-resources/encouraging-better-practice-in-aged-care-ebpac/ebprac-round-1-projects

the research. And these were homes who had volunteered to be included in the research, suggesting they were more confident in their systems.

Foodservice management is a speciality within dietetics, and only proven **qualified foodservice dietitians** should be reviewing foodservices as part of any accreditation system. As food is the most important aspect of all residents lives - nutrition and quality of life to not even review foodservice systems correctly has and will lead to situations as detailed in the royal commission.

Foodservices can be trivialized in Residential Aged Care

Foodservices can be trivialised and not given the attention that is needed. Foodservice is often an afterthought in the planning and design of aged care homes. Often the kitchen is distant from dining rooms, dining rooms have no kitchenette or residents receive tray meal services much like a hospital. The planning of foodservices should be centred on dining rooms (that is focus on the residents), or to be able to impress food into kitchenettes which then control the meal service. Tray services, where meals are pre-portioned in a separate location, tend to reduce choice, reduce the flexibility of portion size and often have the unintended consequence of residents staying in their rooms for all meal services.

Foodservice is task orientated, and is often staffed by those without the necessary skill sets to adequately manage and deliver a quality service. While in recent time, qualified chefs have been added in many homes, chefs themselves do not have any formal training in the area of nutrition nor health care foodservice systems or the food and nutrition requirements for the frail elderly.

Being able to provide food for a group of residents and take into consideration they individual preferences is a major undertaking and is often lost with clinical admission process and procedures. The science of foodservice has been left untouched for many decades, with system issues which impact how foodservices functions poorly understood or ignored. Our observations over decades, includes:

1. systems are hard to implement and maintain,
2. the quality of foodservices can be accidentally undermined due to the skill level of staff and poor understanding of the management of foodservices.

Issues for foodservices in residential aged care

1. It is the staff who make the foodservice system work.
    - There is high turnover, low levels of skills and sometimes language issues for staff which can impede the service.
    - The staff who work in aged care foodservices do a good job with limited resources, training and knowledge.

- Our collective experience, across systems and time, are that staff are caring and want to provide a top service to residents.
- We find that foodservice is undervalued within the sector and this impacts staff.

2. Quality systems of foodservices are assessed by the national agency for accreditation. Accreditors are not required to have skills or understanding on how foodservice systems work.
   - Our group includes one member who has personally experienced 7 accreditations and another who has experienced more than 10. The time allocated to foodservices was less than an hour in each case. Often the focus has been on resident choice but not on the processes required to ensure choice happens.
   - There is no requirement for specific timelines in which menus need to be reviewed or even that the review is undertaken on site. Hence many are paper based by individuals in distant locations.
   - There is NO requirement for the menu review to be undertaken by an appropriate professional, in Australia this would be a qualified dietitian-nutritionist with foodservice experience.

Case Study 1 Karen Abbey

Over my career I have taken part in seven (7) accreditation processes. As part of my role as Resident Support Service Manager for an aged care home in Northern NSW I had to prepare for the three year accreditation reviews for the support service including laundry, cleaning and foodservices. Considering the importance of foodservices, it was shocking was how little attention assessors provided to this critical service. One example of this was at one accreditation, the extent of the "review" was a single assessor looking at the menu evaluation, walking around the kitchen, and speaking to staff. The whole process took no more than 30 minutes. The assessors undertaking the reviews had NO skills in the management of foodservices or nutrition, and demonstrated no understanding of foodservice systems. The result was very superficial examinations of the foodservice system.

3. Cost of food
   Cost of the food has often been the focus of comments regarding aged care foodservice, suggesting that if more money was spent this would solve any issues. We contend that this is unfortunate, because
   - this failure to recognise how complex costing is
   - there has little or no emphasis presented on the significant flaws in the scant published work from Australia
   - there has been no recognition that cost without considering the food production system is inappropriate.

With an increasing focus on costs and the level of care provided, attention has turned toward food expenditure and what this means for the service provided to residents. Raw food expenditure in RACH has been publicised widely and caused great criticism of the sector in recent times[4]. Focussing on raw food cost fails to capture the complexity that is the cost to provide residents with a quality foodservice. Within each RACH there are a multitude of components which all carry their own cost to the system. Between individual RACHs these systems can differ greatly, from the type of production system, the delivery of meals, staffing types and equipment to name a select few. With such complexity involved in a foodservice considering food cost alone is inappropriate and risks measuring the wrong outcome. The discussions around cost of food have clouded what it means to provide a quality foodservice and distracted from the bigger picture.

Case Study 2 – ARC funded research into foodservice in RACH

The ARC funded detailed studies into foodservice and consumption in aged care to better understand the system. We used an ecological study design to explore differences between 5 homes in Brisbane. We were trying to determine if portion size variation existed in foods provided to residents and whether or not similar trends were experienced at the five homes studied. Portion sizes were compared against Queensland Health portion size standards and whether certain foods had more variation than others. We explored whether portion sizes were related to malnutrition. The homes included both for-profit and not-for-profit. Ninety-nine individuals gave informed consent and their total intact over three days was measured – all foods consumed were photographed and weighed before and after each meal. Photographs of 1776 meals were analysed, with the weights being recorded. Variation of portion sizes existed across all food groups across all five facilities. Malnutrition rates did not appear to be associated with portion sizes served, as the site that served the smallest portions also had the lowest rates of malnutrition. We concluded that increasing portion sizes is not the solution for malnutrition, and that staff training is not the total solution, but that strategies targeting consumption at meal service may be a better solution.

4. Distractions from the real issues
   The skill and knowledge deficits allow distractions in the system. There has been distraction without scientific bases so that the focus from real and difficult issues is lost, including

[4] Hugo C, Isenring E, Sinclair D, Agarwal E. What does it cost to feed aged care residents in Australia? *Nutrition and Dietetics* 2018; 75: 6–10. Hugo's work has however been challenged due to its narrow definition and incomplete figures Retnasabapathy, G. Concerns about the study 'what does it take to feed aged care residents in Australia?, *Nutrition and Dietetics,* 2019, DOI: 10.1111/1747-0080.12525 .

- suggesting that vegetable gardens are a solution. Even with the recent moves to "sensory gardens" this still distracts from the foodservice issues.
- focussing on "fresh" food, a term which has no meaning. Suggesting that using any prepared foods is of lower quality is false, given that all persons in Australia use pre-prepared foods in varying amounts (for example, cooked meats, bread, frozen vegetables, cakes, biscuits). We have explored this and have reviews and comments attached at Appendix 2[5] .
- focussing on "healthy food" is challenging without definitions of what this means in the context of aged care and the frail elderly. A health promotion focus such as the eating pattern suggested by the Australian Dietary Guidelines is completely inappropriate for this context[6], yet this is constantly referred to as an issue in the media[7].
- gardening has become a focus, suggesting that residents should be able grow their own food. While this is an excellent activity for residents, the majority of residents are unable to take part due to frailty. What is alarming is the resources used in aged care homes are being misdirected to activities in the pretence of selling a vision of fresh foods. More focus needs to be on the real issues of ensuring residents are eating meals, menu planning and staff being able to adapt to provide choice to residents.

Case Study 3 – menus being planned by persons with insufficient knowledge and skill

Our experience from decades of student projects in aged care foodservices is that when people without the appropriate skills plan menus they often "get it wrong". A very recent example (July, 2019) is where the choice at the main meal was pork chops or casserole beef. Both had been planned by a chef, and seemed excellent, but both were inappropriate for the clients in the form provided. All meals in the dining room observed had to be cut up, and the bones removed before service. This need to "correct" the meals at point of service placed great strain on the service and care staff, and reduced their ability to actually assist residents with consumption.

5. Skills and chronic staffing issues
   The lack of foodservice management skill in the aged care sector is a concern. The lack of understanding of nutrition for this group is critical to issues in the sector.

[5] See Appendix 2 which includes a review as well as a legal statement provided on this topic
[6] See page 2 of the Australian Dietary Guidelines. (NHMRC Eat for Health: Australian Dietary Guidelines, 2013 https://www.eatforhealth.gov.au/guidelines) which states: The guidelines DO NOT APPLY to people with medical condition requiring specialise dietary advice, or to FRAIL ELDERLY PEOPLE WHO ARE AT RISK OF MALNUTRITION. (emphasis added by us).
[7] See as an example - https://www.abc.net.au/news/2018-09-17/food-in-aged-care/10212880, where meals are labelled inappropriate without ANY reference to the individual needs and preferences and ability to eat.

- Research demonstrates that a "nutrition champion" is required for solutions to be maintained, but that the cost of this may be a barrier. Nutrition champions can help the sustainability of nutrition strategies in aged care homes, and consequently maintain or improve the nutrition status of residents[8] .
- Chefs per se, are not qualified in foodservice management in this context unless they have undertaken specialised training.
- There is a chronic shortage of suitable training.
- There is a shortage of suitably qualified nutrition professionals in this field.
- The lack of knowledge of the food nutrition needs of the frail elderly is a major concern, leading to inappropriate foods on the menu[9].
- Protein requirements increase for older adults (1-1.2g/kg/day) and protein intake should be distributed across the day (25-30g/meal) [10]. Our studies demonstrate that many aged care menus do not have enough protein at breakfast, mid meals or even at some evening meals[11].

In the aged care sector, food fortification could be used to support the nutritional adequacy of menus[12]. Food fortification delivers additional macronutrients and/or micronutrients to counteract common nutrient inadequacies observed in older adults. This strategy involves the addition of energy and nutrient-dense ingredients (either common kitchen ingredients or commercial supplement powders) to foods or beverages, without increasing the portion size. Common on-site food fortification strategies include the addition of ingredients high in energy and protein, such as milk powder, butter, cream, cheese or supplement powders. Staff training is needed for this strategy to work. We currently are exploring costs and ease in implementing easy solutions that will be sustainable.

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[8] Byles, J., et al., *Encouraging Best Practice Nutrition and Hydration in Residential Aged Care*, Department of Health & Ageing, Editor. 2009. Gaskill, D., et al., *Maintaining nutrition in aged care residents with a train-the-trainer intervention and nutrition coordinator.* The journal of nutrition, health & aging, 2009. **13**(10): p. 913-917.
a nutrition champion is a person who supports and advocates for the nutritional care of residents and may also be referred to as a nutrition coordinator or nutrition assistant. Previous research has found that residents of aged care homes with dedicated nutrition coordinators were more likely to maintain or improve their nutrition status, whereas residents of homes without a nutrition coordinator were significantly more likely to have deteriorating nutrition status (Gaskill et al. 2009). Similarly, in 2009 the Australian Government Department of Health & Ageing funded the Encouraging Best Practice Nutrition and Hydration in Residential Aged Care project, which took place in nine aged care homes throughout New South Wales, Australia and established a nutrition champion at each facility to help with the success of the project (Byles et al. 2009). However, whilst a nutrition champion may improve the success of an intervention, there are issues with staff changes and continued

[9] See case study 3

[10] Bauer, J., et al., *Evidence-based recommendations for optimal dietary protein intake in older people: A position paper from the PROT-AGE study group.* Journal of the American Medical Directors Association, 2013. **14**(8): p. 542-559. Tieland, M., et al., *Dietary protein intake in community-dwelling, frail, and institutionalized elderly people: scope for improvement.* European Journal of Nutrition, 2012. **51**(2): p. 173-179.

[11] Data from multiple student projects undertaken over the last 30 years in RACHs across Queensland and NSW

[12] Forbes, C., *The 'Food First' approach to malnutrition.* Nursing And Residential Care, 2014. **16**(8): p. 442-445. Kral, T.V.E. and B.J. Rolls, *Energy density and portion size: their independent and combined effects on energy intake.* Physiology & Behavior, 2004. **82**(1): p. 131-138. Dunne, A., *Malnutrition in care homes: improving nutritional status.* Nursing And Residential Care, 2009. **11**(9): p. 437-442.

6. Standards are ambiguous and offer limited guidance
   The introduction of mandatory choice is welcomed but there is no clear definition of what this means
   - There is no international consensus of what choice means in this context
   - Choice can be hard to implement, depending on the food production system, the food distribution system, the physical layout (multiple buildings, dining rooms etc) homogeneity of the population, personal preferences and other factors.
   - There can be the appearance of choice where, there is, very little or none[13].
   - Choice will be an illusion unless the menu can be modernised and production and meal delivery system changed to provide more flexibility.
   - It was noted as part of our doctoral research that homes which had three year accreditation often had foodservice systems failures in meal temperature, dining room services and texture modified meals. These findings highlight the fundamental issue that the previous standards did not provide enough support to deliver minimal standards. The new standards provide no additional guidance and support.

   Standard 4- supports for daily living specifically relates to the provision of meals to residents. Requirement 4 (3) (f) details that where meals are provided, they are varied and of suitable quality and quantity. This standard is ambiguous and leaves interpretation up to individual homes as to what varied, quality and quantity means. As a result, there is little guarantee that residents are provided with a foodservice that meets their needs and preferences. There is no reference to any specific targets or nutrient ranges within the standards, creating difficulties when designing menus and determining whether they meet the nutritional needs of the group. With around 50%[14] of residents in aged care home malnourished, proper menu planning that meets these requirements is if even greater importance. As a result of the ambiguity, there is little understanding of what a menu in aged care should look like and as such there are many poorly designed menus in Australian aged care homes.

   The term quality in reference to food is undefined and therefore there is uncertainty as to what this means in the context of aged care. What does quality mean to aged care residents? Is it a hot meal, appealing presentation, taste, meets resident's preferences, chosen at point of service? All of these outcomes can be a measurement of quality, however with its ambiguous use in the standards, delivering such 'quality' in foodservice is difficult. This standard does not guarantee that resident are served an appropriate meal service[15].

[13] See case study 2
[14] Gaskill, D. , Black, L. J., Isenring, E. A., Hassall, S. , Sanders, F. and Bauer, J. D. (2008), Malnutrition prevalence and nutrition issues in residential aged care facilities. Australasian Journal on Ageing, 27: 189-194. doi:10.1111/j.1741-6612.2008.00324.x
[15] Abbey, K. L., Wright, O. R., & Capra, S. (2015). Menu Planning in Residential Aged Care-The Level of Choice and Quality of Planning of Meals Available to Residents. Nutrients, 7(9), 7580–7592. doi:10.3390/nu7095354

The term varied is not defined within current standards. Varied can be interpreted in multiple ways including, variation within a day, a week, a menu cycle or the length of the cycle itself. With no specifications as to what varied means in the aged care setting, menus are poorly designed with repetition of meals, ingredients and cooking styles. Lack of variety within a menu can lead to menu fatigue and decreased intakes, which is concerning for a group that is at such risk of malnutrition. Resident satisfaction with the menu should be regularly undertaken within aged care homes to determine if the variety is adequate.

There is no requirement for homes to meet the resident preferences or to provide choices in menus within the standard. That is there is no stipulation on the level of choice to be provided to residents. As a result menus contain little opportunities for choice and little ability for residents to direct their meal decisions. With the known importance that choice plays in oral intake, satisfaction and quality of life [16]. It is important that there is a standard that protects the right of residents to have meaningful choices available that align with their needs and preferences.

As discussed at length, the aged care quality standards relating to nutrition are ambiguous and inadequate. Their lack of definition does not provide aged care homes with adequate guidance on what a foodservice and mealtime should be for residents. These standards do not protect our elderly from a poorly designed foodservice that is inappropriate and does not meet their basic nutritional needs.

Case Study 4 Consultant experience– Karen Abbey

As a consultant in aged care foodservices for the last 25 years the most obvious issue to me, is that while foodservices produce the most important part of every resident's day (food and drinks) it is not a service which is not considered the most important or even one of the most important. The planning and design of foodservices with regard to both kitchen and dining facilities seems often an afterthought. The two most important parts of a home are the kitchen and the dining room. Getting these both right is essential for all other foodservice operations. Often kitchens are distant from dining room areas, or are too small making it difficult to produce meals, or the design is inefficient placing strain upon foodservices and staff.

[16] Milte, R., Ratcliffe, J., Chen, G., Miller, M., & Crotty, M. (2018). Taste, choice and timing: Investigating resident and carer preferences for meals in aged care homes. Nursing and Health Sciences, 20(1), 116-124. doi:10.1111/nhs.12394, Carrier, N., West, G. E., & Ouellet, D. (2009b). Dining experience, foodservices and staffing are associated with quality of life in elderly nursing home residents. Journal of Nutrition, Health and Aging, 13(6), 565-570. doi:10.1007/s12603-009-0108-8, Bangerter, L. R., Heid, A. R., Abbott, K., & Van Haitsma, K. (2017). Honoring the Everyday Preferences of Nursing Home Residents: Perceived Choice and Satisfaction With Care. The Gerontologist, 57(3), 479. doi:10.1093/geront/gnv697

7. The residents are not a uniform group

With residential aged care homes there is a diverse population with differing needs, requirements, and preferences. The use of residential aged care has increased 15% over the past ten years with 180, 900 people living in aged care in June 2018. The average age on admission is 82 years for men and 84.5 for women, this trend is due to the longer life expectancy of women. In 2017-2018 there were more women in residential aged care across all states and territories. As well as this, there is a higher proportion of women in older aged groups than compared to men with 1 in 9 women age 95-99 compared to 1 in 20 men[17].

As a result of Australia's multicultural society there are diverse service needs of residents entering residential aged care. With such a heterogeneous population, there are large variations is country of origin, ability to speak and understand English, reasons for migration, post migration experiences, age, sex religion and socioeconomic status. All of these all affect the needs of residents and require a flexible system that can account for such differences.

The level of care required also varies among residents. A high care rating in all three ACFI assessment areas was obtained by 31% of residents in residential aged care. The majority of residents (86%) were diagnosed with at least with one mental health or behavioural condition of which 49% were diagnosed with depression. Fifty two percent of residents also have diagnosis of dementia[18].

In 2018, 1% of the population living in residential aged care identified as indigenous and 22 aged care homes reported having a population of 50% or more of indigenous residents. Aboriginal and Torres Strait Islander people have a lower life expectancy compared to non-indigenous people and as a consequence are using residential aged care at a younger age than those who do not identify as indigenous. Seven percent of indigenous people in residential aged care were under the age of 55 compared to 0.6% of non-indigenous people[19]. With these differences in age, cultural preferences and health conditions it highlights the diverse needs of residents in residential aged care.

These changes in the client group have led to an increased complexity with respect to:

- Menu planning – if all residents are to receive meaningful choice and the group is very diverse, then it becomes a very complex task.

[17] https://www.gen-agedcaredata.gov.au/Topics/People-using-aged-care/Explore-people-using-aged-care

[18] https://www.gen-agedcaredata.gov.au/Topics/Care-needs-in-aged-care

[19] https://www.gen-agedcaredata.gov.au/Resources/Dashboards/Aboriginal-and-Torres-Strait-Islander-people-using

- Meeting nutritional needs- the increased age and health decline means that considerably more care is required in terms of malnutrition amelioration and reduction.
- Language and skills – residents cannot be assumed to have a good knowledge of English and there is increased complexity for both staff and residents.

Foodservice in Community Aged Care

The community meal sector is of vital importance to those livening in the community. Government policy is to keep Australians in their homes for as long as possible and provide support to do so. However, without a strong, well-organised meal service from providers such as Meals on Wheels there is real risk of increased community malnutrition and the flow-on effect of those entering age care being more frail and malnourished.

It is widely known that dietitians are involved in developing policies for "Meals on Wheels" foodservice, providing advice on nutritional content of meals, supporting Meals on Wheels staff in planning effective menus that meets the needs of their residents. However, the other skill sets and professional identity of the specialist foodservice dietitian has not been fully recognised by society and other foodservice staff.

There are unique attributes related to the model of the services, including using volunteers for some aspects of the service, receiving government funding and yet operating in a competitive commercial environment.

Case Study 5 – Lack of recognition of the role of the dietetics professional and failing to follow advice provided by them

Foodservice staff from one Meals on Wheels "site 1" said that their residents had improved energy and protein consumption through making alterations in meals, such as making meals smaller but ensuring that they had increased energy density or protein content and this was assumed to be the only work that involved a foodservice dietitian The site's Chef failed to follow the standardised Meals on Wheels recipe book (provided by qualified dietitians) and did not follow the electronic menus that they submitted to Queensland Meals on Wheels. The Chef decided what the residents would have for lunch and dinner in early morning based on the ingredients in the pantry. The Chef was confident about the clients' satisfaction and said, "we cooked two mains to enhance the choice and residents love their meals very much".

Case Study 6 – Inadvertently removing choice from recipients of MoW through poor systems

At one Meals on Wheels site they strictly followed the electronic menu and their clients pre-ordered their meals according to the menu. They also cooked spare meals and froze spare meals in the freezer. If their clients did not like the two meal options on the menu, they could order the frozen ones. Therefore, at this site by deciding the menu in the early morning, they left the residents with no choice for their meals.

Case Study 7- Using a systems approach to improve MoW

The Chef at one MoW site was concerned about the change in texture and appearance when using powders, or beans and lentils to fortify foods (as requested by the dietitians).
I gave them more ideas on food fortification, for example sprinkle grated cheese on top of soup, add ground almonds to soup, or add cream to any flavour "cream of" soup, use cheese / thickened cream / milk powder to fortify sauce or gravy, using mayonnaise / sour cream / milk powder /cheese / thickened cream to fortify mashed potato, using fortified sauces that dress up mains and vegetables. There were many things that needed to be implemented apart from choosing the appropriate nutrition enhancers for the target recipe and food vehicle, which were then worked through with the staff.

- *They needed staff instruction for food fortification employing fundamental ingredients with introductory materials as well as schedules to master the new techniques.*
- *Assess how acceptable the fortified food was to recipients in terms of how it looked, its taste, its texture and shelf life.*
- *Evaluation of food handling techniques for personnel, with a sampling provided to staff in the kitchens*
- *Maximise in-house cooked items with high protein and energy and hold tasting sessions with recipients.*
- *Estimate the costs, benefits, residents' satisfaction, staff's skills and knowledge necessary for the recipe implementation and make a decision.*
- *Identify barriers and enablers of implementation, and develop an action plan*

Case Study 8 – Student Projects in Meals on Wheels

Recent work undertaken by University of Queensland Masters of Dietetics students highlighted that services are struggling with how to meet the growing expectations of clients. Foodservice reviews highlighted consistent issues with food safety, food portion control, nutritional adequacy of meals, recipe development and meeting the needs of clients requiring special diets across services in Brisbane. Meals on Wheels provides a valuable social contact to clients, however it was reported that often the focus was only on the meal and services struggle to understand and deliver the Meals on Wheels motto of "more than just a meal". These findings have remained constant over more than thirty years of working with these services, and identify that more is required to assist this sector. The "re-invention of the wheel" is depressing as corporate knowledge and learning is lost over time.

QUT similarly has been working Meals on Wheels sites in Brisbane in a service learning model for over 25 years in the training of student dietitians. The issues highlighted in the recent UQ review, are consistent to those found by QUT in our recent reviews, but also consistently over the 25 plus years of these supervised these projects. There are always very dedicated staff providing meals for the community, however there is inconsistency in accessing advice from professionals in diet and foodservices and acting on this advice, and with the same food issues arising.

Appendix 1

The Victus Foodservice Research Group is currently composed academics and scholars from the University of Queensland and the Queensland University of Technology. The present members of the group are:

1. Professor Sandra Capra AM (SC)
   BSc(Hons), DipNutr&Diet, MSocSc, PhD

2. Dr Karen Abbey (KA)
   BSc(Hons), DipNutr&Diet, MHlthSc(HSM), PhD

3. Dr Mary Hannan-Jones (MHJ)
   BAppSc, DipNutr&Diet, MHlthSc, PhD

4. Ms Danielle Cave
   BNutrSc, MDietStud, PhD Scholar

5. Ms Mikaela Wheeler
   BHthSc, MDietStud, PhD Scholar

6. Ms Ge Ge
   BHlthSc, MDietStud, PhD Scholar

7. Ms Z
   BSc, MDietStud, PhD Scholar

This group have collectively more than 100 years of experience in working in foodservices for vulnerable groups including but not limited to, aged care. KA and MHJ have PhDs in foodservice management, two of only a handful of such degrees in Australia. The group works with and supervises research in foodservice management and are the authors of key tools used in foodservices to measure satisfaction and outcomes. They have presented at conferences across Australia and internationally on foodservice management and have published extensively in the scientific literature. They are authors of tools used to assess foodservice and have undertaken many assessments of foodservices as part of quality improvement processes.

Together, this group supervises between 20 and 60 projects per year in foodservice management, with fifty percent of these in aged care (either residential or community based). Since 1988, this has been a group of at least 1000 projects, providing a high level of knowledge and skill in the sector.

KA has worked as a consultant to the aged care foodservice sector for more than 20 years, part of which was as a Resident Support Service Manager for two aged care homes in Northern NSW. KA continues to work as a consultant with recent foodservice reviews of aged care homes still bringing up the same issues that were apparent 20 years ago.

All of the PhD scholars currently work within the aged care sector, ranging from a level consistent with their scholarships up to full time.

Members of this group have and continue to provide professional development for workers within the aged care sector. They are key influencers in practice assessment for students undertaking professional practice in foodservice management.

Peer reviewed scientific publications from this group in the field of foodservice science and management of relevance to this submission.

1. **Cave, D., Abbey K**., **Capra, S**. Can foodservices in aged care homes deliver sustainable food fortification strategies? A review. International Journal of Food Sciences and Nutrition (2019). doi: 10.1080/09637486.2019.1658722
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3. **Hannan-Jones, M**., **Capra, S.** Impact of type, size and shape of plates on hospital patients' perceptions of the quality of meals and satisfaction with foodservices. Appetite 2018, 120, pp. 523-526 https://doi.org/10.1016/j.appet.2017.10.014
4. **Hannan-Jones, M**, **Capra, S**. Developing a valid meal assessment tool for hospital patients. Appetite (2017) 108 68-73 DOI: http://dx.doi.org/10.1016/j.appet.2016.09.025
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2. **Abbey K** (2019) Identifying opportunities for procurement aggregation of foodservices PASA Aged Care Sydney
3. Lackoff, A., Jolliffe, L. & **Hannan-Jones, M**. (2018) Are routine meal quality audits valuable in a remote hospital setting? Nutrition and Dietetics, 75 (S1), 92. Dietitians Association of Australia 35rd National Conference, Sydney, Australia
4. **Abbey K** (2017) Meal Choice – importance and strategies National Meals on Wheels Conference Gold Coast
5. **Abbey K** (2017) Menu Planning In Aged Care Fine Food Sydney
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7. **Abbey K** (2016) Menu choice in aged care. Essential in Foodservices Workshop Brisbane
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3. Capra S Comments and advice on compliance with ACI menu standards for Infrashore, NSW Aug 2015.
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Appendix 2

Menu choices and meal preparation methods in aged care homes[20]

1 Menu choices and quality of life

A previous study shows that a highly diverse diet is linked with improved nutritional status and lowered risk of mortality mainly because the diet contains balanced nutrients (Ducak & Keller, 2011). On the contrary, poor dietary habits such as repetitive meals, unfamiliar foods, and unmet food preferences can have adverse effects on an individual's food intake, nutritional status and quality of life (Ducak & Keller, 2011). These findings gain support from another research shows the value of food autonomy in improving quality of life; food autonomy, in this case, refers to having choice and control over food (Carrier, West, & Ouellet, 2009). In most of the cases, menus in aged care facilities tend to have reduced choice due to culturally oriented and special meal requirements (Abbey, 2015; Abbey, Wright, & Capra, 2015). However, the new aged care standards (standard 4) recommend the value of food choice and consumer-directed care (Department of Health, 2018). It is expected that most of these new changes lead to increased menu choices in aged care homes.

2 Menu choices and meal preparation methods

The strategies used for preparing meals in aged care food services can have effects on the availability of choice. Several strategies are available for preparing meals including making the meals from individual ingredients, from pre-made ingredients, purchasing readymade foods or combining any or all of these methods.

2.1 Labour

The foodservice industry is labour intensive and relies on trained labour especially when preparing specific meals. Modern technology has taken a centre stage in food preparation, for instance, there is increased use of technologies such as microwave, cook-chill methods, ovens, labour-saving innovations and out-sourcing (Riley, 2005). Most of these technologies have been adopted at a high rate in recent years because they save labour costs, reduce skill and training needed for staff (Riley, 2005). Technology has also allowed caterers to have access to pre-processed products such as trimmed and cut vegetables, fresh fish or pre-fried meat. If technology could be adopted and used for preparing a significant part of the meal or meal elements which would just require heating to make the meal complete, a significant amount of manual labour involved in large scale food production could be reduced (Adler-Nissen et al., 2013). Even though the cost of buying readymade foods is relatively higher than cooking from scratch, readymade foods are less likely to increase expenditure concerning cooking-from-scratch menus when labour costs are added to expenditure costs (Ge, Abbey, & Capra, 2019).

[20] Prepared by Scholar Ge Ge

2.2 Quality and presentation

Regarding quality control, a study in the hospitality sector showed that customers often expect consistency and highly standardized customer service (Zeng, Go, & de Vries, 2012). Thus, readymade products allow a better client-foodservice relationship to be forged which would improve satisfaction. This is very likely since, with readymade foods, it is easier for the foodservice to ensure consistency by assuring security, safety, quality and flexibility (Belasco, 2007; Zeng et al., 2012). In aged care facilities, residents fail to differentiate between meals prepared using different meal preparation methods; therefore, there is little evidence to show that readymade foods are inferior to scratch-cooking foods in terms of taste (Ge et al., 2019). Moreover, when raw materials for cooking are combined with readymade products, significant time savings can be made by the chef with regards to the actual cooking process. Since the chef will have more time to concentrate on the presentation, the resulting food will be of greater quality (Riley, 2005).

2.3 Variety and satisfaction

Elderly persons are less responsive to a variety of foods compared to younger people (Saba et al., 2008). Sensory-specific satiety has been noted to be one of the reasons why these people lack responsiveness; as such, elderly persons are likely to consume a monotonous diet (Saba et al., 2008). Therefore, to have healthier food choices and reduce the risk of a monotonous diet among the group, readymade meals can be included on the menu. Besides, the inclusion of ready-made meals on the menus provides a higher level of flexibility and convenience that can support allergies, intolerance and cultural meal planning (Ge et al., 2019). Therefore, the inclusion of ready-made meals on menus can improve customer satisfaction because the meals would be bought as per the customer's needs (Dallinger & Magnini, 2016).

2.4 Nutrition

Aged care homes which utilized readymade meals offered their residents the comparable nutritional benefits of scratch-cooking meals in terms of energy and protein (Ge et al., 2019). A study in a school food service also reported similar results whereby no significant difference was found between readymade foods and scratch-coking meals in terms of the amount of fibre and calories they provided (Woodward-Lopez et al., 2014). Compared to scratch-cooking foods, ready-made foods tend to have higher salt content. However, research has shown that modest intakes of sodium do not present a concern because of its specific functionality in terms of flavour and palatability. The sense of taste is crucial because it allows the nutritional value, safety, quality and palatability of the foods to be assessed (Ogawa, Annear, Ikebe, & Maeda, 2017). Most clinical and laboratory studies have reported that enhancing the flavour of the food with sodium salt tends to improve its palatability and satisfaction among seniors (Schiffman, 2000; van der Meij, Wijnhoven, Finlayson, Oosten, & Visser, 2015).

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Appendix 2 continued

Expert opinion provided by Sandra Capra AM, July 2008 in a legal matter in the federal court of Australia relating to the meaning of "fresh food" .

The different types of production of foods

It is usual to break up components of foodservice into the production component – how the food is prepared or cooked and the distribution/service component or how the food once ready is delivered/served to the client. This is common in all descriptions of foodservice and is a general method of teaching (Spears and Gregoire, 2007, Payne-Pelacio and Theis, 2005)

Production systems

Cook-Serve/Conventional : food is prepared from ingredients, held hot and then served to the client. In traditional systems all the ingredients were in their primary form, for example, meat would be purchased in larger pieces and then trimmed/cut on site, cakes and pastries would be made on site and all vegetables prepared from raw.

Cook-Freeze and Cook-Chill: the product is prepared from ingredients and then either frozen or chilled before rethermalisation and service, ie there is a holding time between the preparation of the food and its service. This allows for an extension of time between preparing food and its service to the client. The lengthening of this time has advantages in terms of staffing and organising preparation of individual menu items.

Convenience/Assembly-Serve which includes Thaw-Heat-Serve and Heat-Serve describe production systems where, in fact very little food is produced at the facility where it is served but is bought in ready prepared in either a frozen or chilled form. In these systems, supplies of ready-foods are held on hand. The kitchen on site is often referred to as a "receival" kitchen, because its primary function is to receive and manage prepared foods. This system is used for many larger foodservice systems where there is very little preparation on site (except for products like soups, salads, sandwiches, etc).

While "conventional" and "cook-serve" systems are "traditional", there are many variations. The term now tends to be used for production/cooking systems which do not chill or freeze the main meat foods on site after preparation or do not purchase the majority of their items already cooked. That is, systems which use a variety of convenience, chilled and frozen foods such as frozen vegetables, chilled salads, frozen cakes, bought in cakes and breads, ready prepared lasagne, powdered soups and the like are often called "fresh" systems.

There can therefore be confusion with some people saying they use only "fresh" food while using frozen vegetables. The days when a foodservice actually prepared all of its items has long gone.

In the domestic situation, there can be variants of any of these systems, so it is not uncommon to purchase ready trimmed, cut meat, ready prepared vegetables, ready cooked noodles and ready prepared sauces and to assemble a stir fry meal from these, or to purchase a frozen or chilled lasagne and merely heat it at home.

Similarly it is common to freeze or chill left-over prepared foods for later consumption. In time- limited households the use of assembly-serve has risen, as has cooking larger quantities and freezing for later use. There has been a rise in cookbooks based on these principles where a limited number of ingredients are used, but each ingredient may be a complex food in its own right, for example using a soup mix as an ingredient (example the book "4 Ingredients" by Bermingham and McCosker – a best seller where every recipe is made up of four ingredients only).

AC Neilson reported in 2003 that the main purchasers of convenience foods in Australia were most likely to be families, with the primary shopper aged less than 54yrs. Of all meals made, 45% of meals were made by combining components, 28% were made from basic ingredients and 28% were made up of convenience types of food (www.nfis.com.au/foodbiz/v1i5_trends.asp, accessed July 23rd 2008).

The term "home-cooked" has come to have some ambiguity in its meaning. Dictionary definitions of "home-cooked" is cooked "in the home" and therefore in literal terms does not include any group cooking, or any food prepared anywhere but in a person's home, but can include meals where portions of that meal, as described in paragraph 3.4, are in a convenience form. This means that meals assembled in the home from pre-prepared products such as a frozen, uncooked pizza, are often described by the lay public as "home-cooked". In much the same way, "home made cakes" are often made from cake mixes, where the only ingredients actually added are water and perhaps an egg. Similarly, "home-cooked" pikelets can be made up from a mix where water is added and the container shaken. This has taken the meaning away from the idea that "home-cooked" foods are made up from basic or raw ingredients as was the case prior to convenience products being readily available. Nevertheless, these items still can be termed "home-cooked" as they are made up in the home. Areas of greyness include when a food that is fully prepared and is purchased chilled or frozen is reheated at home. Some would classify such a food as a "take-away" food. Further areas of ambiguity arise when a person's home is a large establishment where many persons reside in a single place with a kitchen serving them. In literal terms, any food prepared in such a place could be described as "home-cooked" as it is in the home.

In much the same way "home-style" is ambiguous and has no clear meaning. In my opinion, it refers to a simplicity of ingredients and the equipment used in preparation. It implies the use of smaller, domestic appliances, and therefore simpler dishes, as well as dishes that could be considered traditional to an ethnic cuisine. "Home-style" can therefore be contrasted with "deli-style" or "restaurant-style" which suggest complexity or more exotic ingredients, larger or specialty equipment. This would not preclude "restaurant-style" meals being prepared in the domestic situation and with smaller appliances, and does not

preclude "home-style" foods being prepared in quantity. I would therefore characterise meals such as roast dinners, casseroles, macaroni cheese, sandwiches, omelettes, soups, custards, crumbed fish, spaghetti bolognaise and similar foods as "home-style" Australian cuisine, while items such as potatoes with balsamic vinegar, basil and goat's curd, chicken terrine, beef fillet with quince jam could be described as Australian "restaurant-style" foods. I have formed this view from experience talking to people about menus and food preferences.

Delivery or distribution systems

Delivery refers to the methods of getting the food from the kitchen to the client. There are numerous options available to assemble, distribute and serve meals, and these options have been increased by the use of technology. The system of distribution can be independent of the production system or the way the food is prepared but essentially, can be cafeteria style, where clients come to a central point for service or can be variants where meals are taken to clients.

Foods which have been frozen can be managed in two ways: it can be heated first then served, or plated/served first then heated. Systems can use both of these. These can have different consequences for appearance and some nutrients.

Hot-holding refers to placing cooked/reheated foods into some kind of equipment which will maintain the temperature in the zone which is considered safe from a food poisoning perspective. In any situation where there are more than say 12 persons, if you heat the food before serving, it must be kept hot. In most situations this would be a bain marie – designed to hold the food above 60ºC – the minimum required to inhibit bacterial growth. Hot-holding for more than about 30 minutes is not considered good practice as vegetables lose their texture and nutrients which are sensitive to heat such as vitamin C are lost (Williams, 1993, 1996).

Trends in Foodservice

The use of technology is high in preparing foods at the present time and expected to continue to rise in the future. Even in domestic situations it is no longer the norm to have all meals prepared from primary, basic ingredients (for example flour is an ingredient whereas a cake mix is not). New technology allows food to be kept for longer which reduces spoilage and ultimately reduces costs. Technology also allows foods to be stored for unexpected events. Hence supermarkets stock many foods which have had differing amounts of preparation prior to purchase. These can be frozen, chilled or canned or can be uncooked products which have been partially prepared such as peeled potatoes. It would be rare for households to never use products such as sliced, chilled cooked meats, frozen crumbed or battered fish, chicken, pies, desserts and other items which have been partially or totally prepared. Indeed, the use of frozen or canned corn nibblets and frozen peas would be the dominant forms of consumption of these vegetables.

The use of "fresh" is ambiguous.

- It can be used to mean wholesome, in contrast to food which is stale and not suitable for consumption – example fresh milk compared to soured milk. This meaning is also used in relation to water, "fresh water" contrasted with foul or tainted water.
- "Fresh" can imply that the time between ingredient preparation and final consumption is short – as in "freshly prepared", which is a time rather than quality descriptor. This meaning is also used in relation to application of other preservation methods, such as, "freshly frozen" used in an array of foods such as fish, chicken, fruit, vegetables, pizza and the like. These imply a short time between preparation and freezing, that is, the food is frozen before any decaying process can commence.
- Technology has made the term less precise so that it can also mean uncooked compared to cooked, as in "fresh fish" which can have been frozen but which is sold uncooked, "fresh pasta" which is chilled, uncooked compared to uncooked dried pasta (heated in some way). The term continues to be applied in these cases even if the time from actual preparation is quite long – weeks or months, as new packaging technology has been introduced. Chilled, "fresh" (uncooked) meat can be preserved for weeks through packaging.
- "Fresh" also can be used to mean new, as in "fresh ideas" or a "fresh start". In relation to food this can be translated as not being left-overs or not appearing stale, old or tired. Food that has been recently prepared, no matter what the form of the components, could be described as "fresh" if it is contrasted to food that was prepared some time previously and kept warm or which has been heated once for service, not used and then reheated. In this context it refers more to the appearance of the food, so that wilted salad would not be described as "fresh" even if it had been prepared very recently.

To define "fresh food" becomes difficult as a result of the lack of clarity of meaning. Although I could not locate any published research on the topic of consumer definitions of fresh, it is my professional opinion that people use the word "fresh" more in terms of appearance and final preparation just before consumption. I believe that it is common practice to call cooked frozen peas "fresh" and to call cooked fish that had been frozen prior to cooking "fresh fish". In this way "freshly prepared" and "fresh food" can include chilled and frozen components if the final preparation is shortly before consumption.

The use of pre-prepared foods in health and aged care

I was first employed within Queensland in early 1981, when the transfer from conventional food preparation to the use of frozen meal components was in process in the public hospital sector. The Frozen Food Facility at Wacol (now Prepared Foods Australia), was built by Queensland Health in the late 1970s, modelled on systems in the UK. It was originally government owned but with a private contractor managing and operating the facility on behalf of the government. All public hospitals from the NSW border to Gladstone transferred to using product from the Facility from the late 1970's to the mid-1980s

(exceptions the Mater as it is a public/private partnership and Toowoomba Hospital). At that time government policy was that as much product as possible was to come from the facility, which included meats, vegetables, desserts and sauces. In the mid 1990's (from memory) the facility was sold, but policy remained that the "protein" components of the meal for Queensland Health facilities had to be purchased in a frozen form from the frozen food facility. This was later liberalised to at least one protein meal component, and from 2008, policy has changed again that chilled (rather than frozen) product can now be used in Queensland Health hospitals. Because the frozen food facility (now called Prepared Foods Australia) was the main source of menu items in the hospital sector, I used to take students on field trips yearly up until 2003 when I left Queensland. I therefore consider that I am very familiar with the products and the equipment used in their manufacture.

To my knowledge, the majority of public acute hospital systems in Australia now have a large proportion of their product coming to them in pre-prepared forms, as do large aged care systems. This is because

- There is quality assurance through a degree of standardisation in food preparation
- Better use is made of skilled staff in a climate of staff and skill shortages
- Predictability of supply is improved.

One of the more important advantages of the introduction of pre-prepared foods into aged and health care facilities is the increase in choice it permits. This is especially the case for smaller systems and facilities (less than 200 beds). To prepare a number of different meals simultaneously in a cook-serve or conventional system means the foods tend to be prepared in a sequence rather than at the same time, unless a number of cooks are employed. Sequencing preparation can lead to excessive hot holding of items. Rethermalising (reheating) multiple types of foods can be done at the same time, so for small systems offers real advantages. This is particularly the case in longer stay situations where menus can become boring quite quickly. Offering choice means that exceptions, where alternate meals are made for those who dislike or cannot eat the menu items, are reduced.

Choice is important in facilities catering to the elderly as malnutrition is a major issue for this population, and food intake per se is one of the key causes of malnutrition (chronic disease is another). In addition, food takes on more meaning in situations where there is loss of personal control over other aspects of life, so that choice can increase quality of life and intake of foods which in turn lessens the chance of malnutrition and its consequences (West, 2003). Studies in Brisbane indicate that about 15% of the elderly living in the community have malnutrition (Leggo, 2008), and that generally 30-40% of those in residential aged care may have malnutrition (Banks, 2008 personal communication in viewing prepublished paper, West, 2003). As well as total energy (leading to weight loss), at most risk are those nutrients which

- do not occur in a large number of foods, so that if these foods are reduced or omitted from the diet there is a problem - examples omega 3 fats, calcium, folate

- have absorption impaired with the aging process - example iron, B12, zinc
- occur in the food supply at relatively low levels so that they become at risk when the total food is reduced - example thiamin, fibre,
- become at risk as a result of external changes examples - vitamin D, water.

Increasing the opportunity to eat more, via choice, is one strategy to combat malnutrition problems. Other strategies include improving distribution systems (Desai, 2007).

There is no evidence that frozen or chilled products are less nutritious that fresh prepared products which have been subjected to hot holding (Williams, 1996). The evidence suggests that it is the number and type and length of heating processes involved, the conditions of preparation and the conditions under which foods are frozen or chilled that are important. Hence, slow cooling and chilling using ambient temperature and normal refrigeration are likely to lead to lower nutrient retention than rapid chilling or freezing. The use of domestic appliances or holding refrigerators or freezers rather than blast freezers leads to the slow cooling noted above.

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