



Increasing dairy serves in an aged care facility

Case study



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About the author

Louise Murray is an Accredited Practising Dietitian, specialising in aged care nutrition and food services. She's on a mission to remove party pies and sausage rolls from aged care menus and has worked to improve food quality for older adults for the past 20 years. Louise has a special interest in teaching chefs how to cook high nutritional quality food for older people while still making it taste delicious. She also teaches dietitians the skills and knowledge required to become an effective and supportive dietitian in aged care through an online mentoring program, to do more than just individual referrals.

Her consultancy Nosh Dietitians Co specialises in consulting directly to older adults in the community and the aged care sector. Connect with Louise on Instagram @louisemurray.dietitian or on her website noshdietitians.co.

Why this case study?

Dairy foods, such as milk, cheese and yoghurt are naturally rich in calcium and protein – two essential nutrients that build and maintain healthy bones and muscles. The combination of calcium and protein in dairy foods make them much more effective at improving muscle mass and bone strength than supplements alone.

A world-first study completed by the University of Melbourne has linked milk, cheese and yoghurt with the prevention of falls and fractures in older people. Dairy consumption was increased from two to 3.5 serves per day by older adults in residential aged care, resulting in:

- **33% reduction in all fractures;**
- **46% reduction in hip fractures; and**
- **11% reduction in falls¹.**

These results were seen after only five months of implementing a menu with 3.5 serves of dairy per day. Providing adequate milk, cheese and yoghurt is an easy and low-cost intervention. **The cost of providing additional dairy was 66 cents per resident per day, with an average overall saving of \$175 per resident per year².**

This case study was designed by a dietitian to demonstrate the ease of increasing serves of dairy, while highlighting any potential obstacles or challenges that other facilities may face when increasing dairy serves on their menu. This case study was developed retrospectively after the dietitian assessed a significant increase in serves of dairy from 2 to 3.5 serves per day on average across each week.

About the facility

The aged care facility is based in Perth with 45-beds and is specialised to care for older adults with dementia. It uses a cook fresh catering system with the kitchen onsite and has kitchenettes in each area for meal service.

Goals of redesigning the menu

One of the primary goals for this facility was to increase the overall protein content of the menu, delivered in a tailored way to improve dietary intake for residents with dementia. The core food group of Meat and Alternatives was already meeting recommendations, so the focus became to increase total protein by increasing serves of dairy to achieve the primary goal.

The menu was being redesigned as part of a meal and dining project at the facility due to changes with catering equipment and staff resources. This also allowed a redesign of the menu format to better suit the needs of the residents.

- 1 Iuliano S, et al. Effect of dietary sources of calcium and protein on hip fractures and falls in older adults in residential care: cluster randomised controlled trial. *BMJ*. 2021 Oct 20;375:n2364. doi: 10.1136/bmj.n2364.
- 2 Baek Y, et al. Reducing hip and non-vertebral fractures in institutionalised older adults by restoring inadequate intakes of protein and calcium is cost saving. *Age Ageing*. 2023 Jun 1;52(6):afad114. doi: 10.1093/ageing/afad114.

The old menu

It was a typical menu offering three main meals and three snacks:

- Cooked breakfast was offered once per week, with continental breakfast offered every day.
- Two hot choices were offered at lunch. The second choice was previously a finger food option to encourage intake for residents with cognitive impairment who preferred to pick up their food, but this slowly phased into two hot plated options due to ease of service. It was also identified that care staff, who plated meals in the kitchenettes, were not offering the second choice on a regular basis so there was high food wastage.
- Soup and a lighter meal were offered at dinner.
- Dessert was offered at both lunch and dinner.

Problems identified

- Previous Menu and Mealtime Quality Assessment report showed they were meeting Meat & Alternatives recommendations, with an average of 2.4 serves per day. The menu was not meeting recommendations for the dairy food group, at an average of 2.1 serves per day. Overall, the protein content of the menu was low due to the inadequate dairy serves and the report had recommendations for ways to increase dairy in the menu.
- Grain serves were higher than recommended at 5.5 per day. This means that more carbohydrate-based snacks and desserts were being provided, with lower protein content.
- Higher volumes of nutritional supplements were being recommended by dietitians due to unintentional weight loss, as the menu overall was not meeting the nutritional needs of most residents. The lower protein content of the evening meal was of most concern, as the time between supper and breakfast is generally 13 hours.

Limited nutrition knowledge of care staff led to less dairy options being offered at meal services. For example, for residents with lactose intolerance, carers were not giving dairy-based desserts, offering fruit only.

The new menu

What was altered?

The draft menu format was provided to the Catering Manager by the dietitian, creating a framework to adjust the menu items to suit the current residents. Format changes included:

- Changing soup and a lighter meal option from dinner to lunch. This allows higher protein meal options at dinner before the overnight fast.
- Providing a finger food option at lunch, to serve with the soup. This aimed to increase total intake for residents who preferred to eat with their hands, at a better time of day for them when they were less tired. It also facilitated extra dairy, as most finger foods included cheese.
- Providing a half cup serve of a smoothie to all residents at morning tea, along with a sweet snack. This ensure that they get 5-10g protein for morning tea, as well as to have a sweet snack as per their preferences. The flavour of smoothie was changed daily and listed on the menu. Lactose free options were provided for two residents.
- One dairy serving was listed at each main meal, either in the main meal or dessert (at lunch and dinner).



Meal	Example of previous menu	Where are the dairy serves?	Example of new menu	Where are the dairy serves?
Breakfast	Cereal or porridge with fruit	Milk on cereal or in porridge 1 serve	Cereal or porridge with fruit Toast with jams Yoghurt	Porridge made with milk OR milk on cereal 1 serve. NB: This could be increased to 1.5 serves if extra milk powder was added.
				Yoghurt 0.5 serves
Morning tea	Buttermilk scones	Buttermilk scones 0.25 serves	Strawberry smoothie, banana bread	Fruit smoothie, made with milk, ice cream and milk powder 0.5 serves
Lunch	Seared salmon with asparagus and béarnaise sauce Chicken and chickpea salad with mango vinaigrette Lyonnaise potato and melange of vegetables Coffee crème brûlée	Crème brûlée (estimated using commercial powder plus mixing instructions with cream and milk) 0.25 serves	Beef and mushroom pie with a cheese mashed potato top, peas and carrots	Grated cheese on mashed potato on the pie 0.5 serves
			Tomato and basil soup Lemon crumbed fish strips Apple and berry crumble with vanilla custard.	Custard on apple crumble 0.75 serves
Afternoon tea	Fruit skewers Minestrone		Goats cheese tomato tartlet and assorted biscuits	Goats cheese tartlet 0.25 serves
Dinner	Lamb koftas with mint and apple chutney Pumpkin and sweet potato mash Minted peas		Chicken piccata Dauphinoise potato Ratatouille	Dauphinoise potato 0.5 serves
Dessert	Profiteroles with chocolate sauce		Nutella mascarpone Chocolate mousse Hot drink of choice Assorted finger sandwiches and cake	Mascarpone chocolate mousse 0.5 serves
Daily total		1.5 serves		4.5 serves

Menu total = Average of **3.5 serves** dairy per day

One serve of dairy is equivalent to:



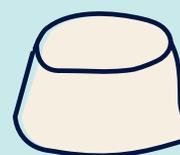
Milk
1 cup
(250ml)



Cheese
2 slices
(40g)



Yoghurt
 $\frac{3}{4}$ cup
(200g)



Ricotta
 $\frac{1}{2}$ cup
(120g)

Feedback from the Catering Manager

- On initial discussion, the Catering Manager was unaware of the recommendations for dairy serves in aged care menus and that the new menu met the recommended 3.5 serves per day. He reports that it was "potluck" as he didn't know what was required, however he said that he simply followed instructions from the dietitian.
- While the chefs are aware that they need to provide more nutritious meals to prevent weight loss, it is evident that the targets for food groups were not known, and therefore recipes had not been created specifically to meet these targets. It was suggested that more education be provided to chefs about the 'why' behind creating menus that meet nutrition recommendations for core food groups, including 3.5 serves for dairy.
- Catering Manager was pleasantly surprised to create a menu that provides 3.5 serves of dairy per day, when we discussed the nutrition implications relating to reduced falls and fractures in older adults.
- Simple changes were very quick to establish such as making desserts with milk in commercial products, for example instant mousse mix to be made with milk, rather than with water as per the product instructions. This change makes a lighter mousse that is more enjoyable to eat, due to the role of dairy in providing structure, holding air due to the fat content and enhancing the flavour.
- Operations and Clinical Managers were already in alignment with the project, so it was not necessary to obtain 'buy in' from them. This can be a barrier at some facilities.

Was there an additional cost to changing the menu?

On review, there was minimal increase in food costs with the increase in dairy serves, as they were absorbed into the menu changes. This facility has a healthy food budget of ~\$18/resident/day. This includes meeting recommended serves of Meat and Alternatives of 2–2.5 serves/day, which is generally the most expensive food group per serve.

The Catering Manager identified that lactose free dairy products, specifically milk and custard, are more expensive than regular dairy products. The facility had two residents requiring a lactose free diet, so the impact on total cost relating to dairy was minimal. He reported that if further cost savings needed to be made, shelf-stable dairy products were generally a cheaper option and could be purchased in bulk (nil storage issues identified for pantry items).

Issues preventing residents consuming 3.5 serves dairy per day

On reflection with the Catering Manager, several issues were identified that prevented residents consuming 3.5 serves of dairy per day. There are two parts of the project:

- 1 Develop a menu with recipes that provide 3.5 serves of dairy per day.
- 2 Provide education and training for staff to ensure that meals and snacks are provided as per the menu. This includes providing information, so staff understand the importance of dairy-based meals and snacks for older adults in maintaining their nutrition status and to prevent falls and fractures. It requires leadership from the clinical team to ensure that menu items are provided such as from the tea trolley on mid-meal rounds.

There were also misconceptions from the chefs/ catering team on what a serve of dairy is. It is commonly thought that butter and cream added to soups and mashed potatoes are included in dairy serves.

It is also frustrating for catering staff to prepare all required meals and snacks providing adequate dairy, to see the clinical/care staff not provide the food or drinks. They may be left in the fridge or meal service area, rather than provided as a dessert or mid-meal snack. This then results in high food wastage and the residents not being given the opportunity to consume each serve of dairy.



Recommendations from the Catering Manager

Implementing the menu after development was somewhat challenging, as it required specific education and training for both catering and clinical staff. The Catering Manager suggested the following for each staff group:

Catering

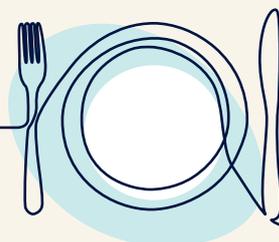
- **Providing 'in kitchen' or video education** that can be watched in 15-minute (or short) blocks of time. This is to provide the background of why the menu now includes 3.5 serves of dairy per day and what their role is to ensure this occurs.
- Training for chefs and cooks in aged care can be limited, so it is required to **improve their understanding of the dietary requirements of older adults**. This includes producing meals, desserts and snacks as per the menu, to provide adequate core food groups for Meat and Dairy to ensure protein requirements are met for the majority of residents.
- **Providing recipes for chefs/cooks** that must be followed, with amounts of dairy products added to match the menu total. For example, cauliflower cheese with bechamel sauce would be 0.75 serves of dairy with milk in the white sauce and cheddar cheese grated on top. This is based on standard serve sizes of dairy, with 250mL of milk and 40g hard cheese.
- **Providing education on each type of dairy** – butter and cream are not considered core dairy foods; however, they should still be added during cooking to improve flavour, mouthfeel and to be carriers for fat-soluble vitamins. It could be highlighted on each week of the menu where the dairy sources are, and the serve sizes provided.
- **Working in collaboration with the dietitian** to be able to measure serves of dairy in each mealtime, as well as to adjust or increase serves where needed. The dietitian will be able to measure this data in the Menu & Mealtime Quality Assessment report, with suggestions of where to include more dairy (if applicable). They will also be able to provide additional feedback from residents on menu changes that may be made to suit their preferences, and to observe food wastage on less favoured menu items. Further support and training can also be provided to the clinical team, to support the catering efforts in meal services.

Clinical

- **Liaising with Clinical Manager to provide education for nurses and carers** on their roles within food services. This is to ensure that all meals and snacks are provided as per the menu specifications.
 - For example, if cheese and crackers are provided as an option for afternoon tea, the cheese needs to be collected from the fridge by a carer. This task is to be allocated to a particular staff member and a checklist provided on the items required on the tea trolley before service begins.

Top five tips to increase dairy serves

- ① **Know your data.** Does your current menu provide 3.5 serves of dairy? If this is not known, you may need a dietitian to complete a Menu & Mealtime Quality Assessment to identify how much dairy your menu provides.
- ② **Aim for 1 serve of dairy at every meal.** It might be as simple as including more dairy-based desserts or adding custard to crumbles and pastries.
- ③ **Swap water for milk.** In porridge and dessert mixes/commercial dessert powders.
- ④ **Provide full milk drinks e.g. full milk hot chocolate or malted milk drink at supper,** to provide additional protein to help with sleep and prevent hunger overnight.
- ⑤ **Engage your Facility and Clinical Managers.** Provide the information behind why this is important to help with discussions relating to food costs. More cost-effective dairy options are available, including shelf-stable items and milk powders. The cost benefit far outweighs the cost of dairy products, with research available to support this.



Checklist to achieve dairy serve goals

To achieve the increase of dairy to 3.5 serves per day, it requires a collaborative approach from roles across management, clinical and catering within residential aged care facilities. As it was highlighted in the issues identified in the case study, residents will only be able to consume the recommended serves of dairy when both clinical and catering roles are working together with a focus on ensuring residents have the opportunity to consume these foods and fluids.

Chef/Catering Manager

- Learn what foods provide dairy, including the recommended serve sizes.
- Assess existing menu for serves of dairy provided, using standard dairy serves as a guide. The Menu and Mealtime Assessment report completed by the dietitian can also be used as a guide.
- Provide meals, snacks and fluids as per the approved menu
- Provide leadership to kitchen staff to demonstrate serve sizes, how to provide each food and fluid, and reporting any food wastage/ foods that are not consumed or given to residents.

Facility Manager

- Learn and understand the importance of providing a menu that includes 3.5 serves of dairy to residents, with the significant improvement of falls and fractures as per the Fractures trial research findings.
- Discuss current menu with chef/catering manager to determine the current vs proposed menu to reach the recommended 3.5 serves of dairy each day.
- Discuss food budget with the chef/ catering manager, to advocate for a menu and food budget that include recommended dairy serves.
- Provide education to leadership staff (chef, clinical manager, registered nurses) on why the focus of dairy is now included, and what this means to residents for improving clinical outcomes. This is also an opportunity to share this focus with residents and their families and friends, further providing more education on the importance of dairy for older adults to the wider community.

Clinical Manager/Registered Nurses

Their role is to ensure the carers are following dietary care plans and assisting with meal services to provide all food and drinks, according to the chef. This is an area that is often identified by chefs as being one that is not actioned well, resulting in high food wastage and the residents not being given the opportunity to consume each serve of dairy provided.

- Learn and understand the importance of providing a menu that includes 3.5 serves of dairy to residents, with the significant improvement of falls and fractures as per the Fractures Trial research findings.
- Provide leadership at mealtimes to ensure carers and other staff are providing the dairy-based foods and fluids the kitchen have provided. This includes snacks and nourishing drinks that are included for mid-meal snack rounds/ on the tea trolley.
- Ensure staff are providing meals and fluids according to each resident's dietary care plan, rather than making decisions at point of service.
- Ensure staff have adequate assistance at mealtimes to have the opportunity to consume these serves of dairy.

Carers/assistants in nursing

Carers are the staff who have the most contact with residents and often have the most influence on food and drinks given to residents at point of service. Their support and encouragement for residents to consume the food provided is integral for them to meet dairy requirements.

- To follow the dietary care plan recommendations and provide food and drinks as per the plan.
- To ensure food and drinks provided by the kitchen are given to residents at mealtimes and mid-meal snack rounds. For example, if cheese and crackers are listed as the afternoon tea snack, the cheese needs to be taken from the fridge and put onto the tea trolley with crackers. These are to be offered as the first option for residents on a regular diet.
- To ensure residents on a texture modified diet are given dairy-based snacks and drinks when made by the kitchen.
- To provide feedback to the catering staff/chef about food wastage from mealtimes, or if residents are declining to drink milkshakes on High Protein High Energy diets (HPHE).

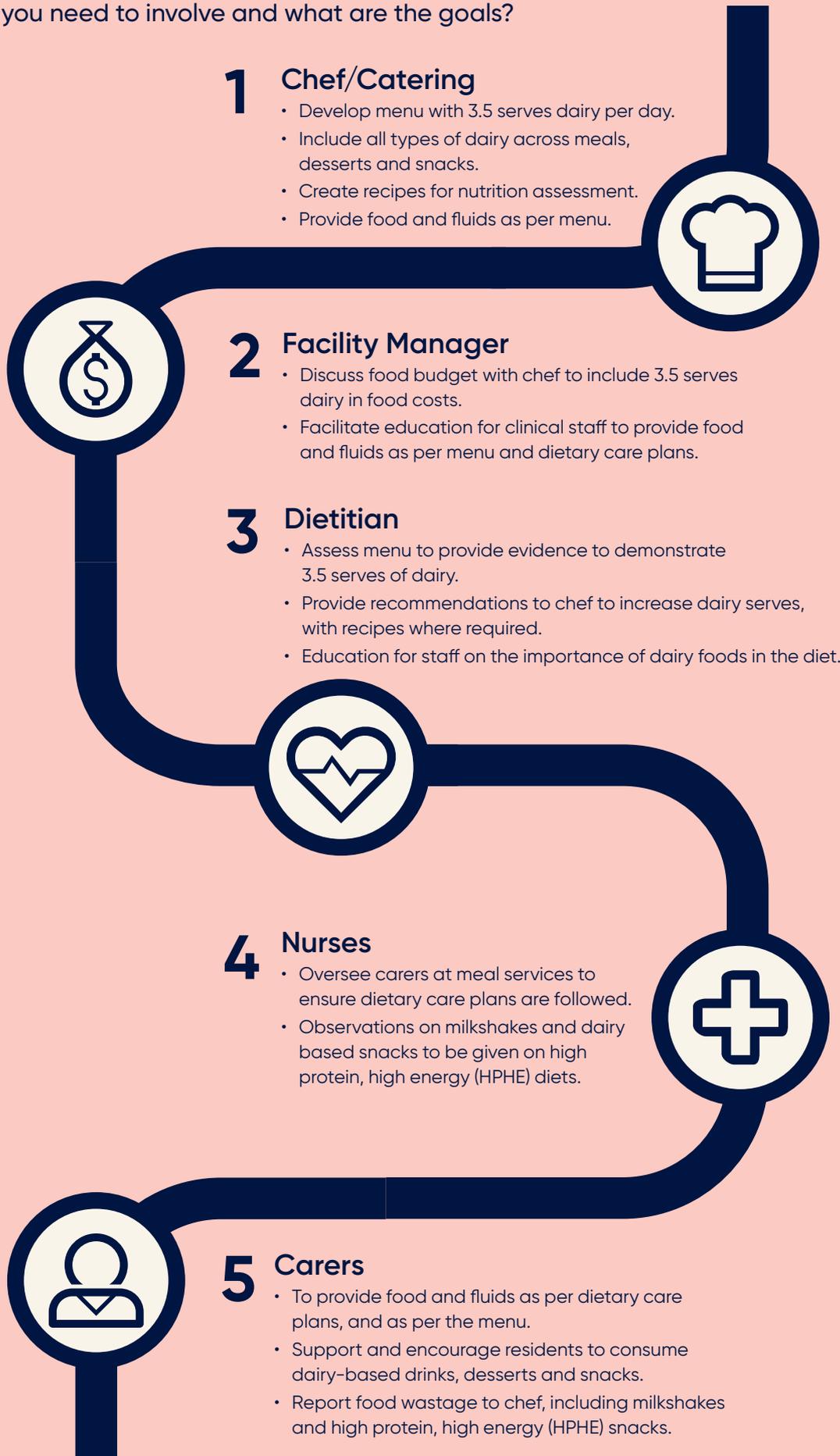


Dietitian

Regardless of whether the dietitian is external to the facility or within the organisation, the dietitian is required to assess serves of dairy across the menu and provide recommendations to increase these if they are not meeting 3.5 serves per day on average across each week.

- Learn and understand the importance of providing a menu that includes 3.5 serves of dairy to residents, with the significant improvement of falls and fractures.
- Discuss recipes and food fortification with the chef, as extra serves of dairy may be used in producing foods that may not be listed on the menu. For example, extra milk powder may be added to porridge at breakfast, milkshakes may be provided for all residents at morning tea, cheese and crackers may be provided on every afternoon tea trolley, but not listed on the menu.
- Assess serves of dairy at the Mealtime component of the Menu Assessment, to accurately assess the serve size of each dairy component. E.g.: custard added to apple pie may be 0.5 serves (½ cup).
- Provide education to the chef and catering team where required to increase serves of dairy.

Increasing dairy serves in aged care at a glance: who do you need to involve and what are the goals?





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