

# final report

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## Red meat in aged care

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## Stage 3 Project Overview

**In Stage 1** of this project the demography of the aged care industry was established.

**In Stage 2** menus were collected from facilities, the meals were divided into the type of protein they were based on, then the number of meals containing each type of protein at the Main meal (daytime) and the Secondary (night) meal were totalled

**In Stage 3** The areas to be focused on are:

- Quantify in volume and value of the returns to the red meat industry in the following areas
- 1 more meal on rotation in the main meal sector (lunch)
- 2-3 extra rotations in the evening meal (value added products)
- What are the current sales into these areas of the menu rotation
- What cuts are being used now and why
- A SWOT analysis of red meat at each mealtime
- A SWOT analysis of a competing product - chicken
- The elements to be considered when constructing a menu
- Recommendations for overcoming issues identified regarding usage of red meat.
- Case study of Marian Centre in taking up Value Adding of secondary cut red meat.

Note: The food decision making position name varies from Chef to Cook or Food Service Manager and the titles are generally interchangeable. All three titles are used in this report and are to be considered as referring to the one position.

## Executive Summary

**“The red meat advantage.”** While red meat is still the product of choice by residents, current preparation and cooking techniques often prevent many residents from being able to eat or enjoy the red meat meals. There is a need to build on this preference by developing new techniques, new products, recipes and transferring this information to the people designing menus, cooking and preparing food at Aged Care Facilities.

1. Main Meal red meat accounted for 47% of total offerings. Beef 35% and lamb 12%.
2. Night meal red meat accounted for 35% of the offerings. Beef 32% and Lamb 3%.
3. Main and Secondary meals combined are 42% of all meals offered. Beef 32% and Lamb 8%.

## Main Meal

When utilising the government estimates of 167,000 aged care beds in Australia and the average protein portion being 80g, this equates to 42.084 tonnes per week or 2,188.37 tonnes per year of red meat. If one extra red meat meal was added per week to the menu cycle this would mean an extra 13.4 tonnes of red meat would be consumed each week. Currently based on 167 000 residents eating 3.15 x 80g red meat main meals the current red meat value is \$20, 820, 000 of cooked product or \$13, 533, 000 of raw product.

## Secondary Meal

Add one finger food type meal and one substantial wet dish meal each week to the secondary meal menu cycle and this would increase the consumption to 21.71 tonnes at the secondary meal each week. This would be supplied as a combination of cooked and raw product with a value between \$150, 000 and \$210, 000 each week.

On average 2.45 red meat meals are offered each week. If this can be increased by an average of 1.55 meals consumption will increase from 20.45 tonnes to 33.4 tonnes.

The residential aged care industry needs:

- Specification
- Education,
- Training,

The best way to drive this forward is through ongoing technical support on cooking methodology, menu & meal designs in a simple to read and easy to understand format.

Providing menu or recipe plans to decision makers will naturally lead them to use more of the product included and specified in that information.

### Stage 3 - Hypothesis:

*Red meat is losing market share in Aged Care to other meats including chicken and fish.*

The two previous research studies had detailed this “change” as taking place and looked at possible reasons.

Meyer report says “*Red meat is generally the third choice of aged care operators with chicken being first and fish second. Red meat products are usually used as a low grade, low priced alternative with roasts, mince and casseroles being the product served most. The trade off in recent times has seen red meats lose market share to chicken and perhaps even imported fish and seafood. In some cases such a decision could result in strategies for not offering red meats at all.*”

Whelan report states “*Red meat market place –it is widely known that red meat consumption is secondary to chicken, pork and fish.*”

The benefits of red meat in an aged care diet have been well documented both in Australia and Overseas. Both Myer and Whelan have detailed, referred to and listed these studies extensively. So this is an area that will need collation rather than more research effort.

This current study decided on an outcome based approach whereby menus from different facilities would be dissected and analysed to determine the makeup in meals from different protein groups. The Hypothesis of red meat at all meals was in decline was not directly supported by the evidence. The evidence is pointing to possible small loss of share at the main meal to other meats. It is estimated from analysing menus that there are 3.15 red meat main meals on offer at Aged Care facilities each week. At the night meal there is a definite loss occurring but to manufactured foods, whether they are vegetarian, chicken, fish, etc as long as it is simple to prepare and serve. In particular lamb is rarely offered at the secondary (night) meal.

If there was one outcome from this study it could be summarised by stating that there is a definite preference by residents for red meats at the main meal. This preference could be referred to as “***The red meat advantage.***” While red meat is still the product of choice by residents’ current preparation and cooking techniques often prevent many residents from being able to eat or enjoy the red meat meals. MLA however, needs to build on this preference by developing new techniques, new products, recipes, etc and transferring this information to the people designing menus and cooking and preparing food at Aged Care Facilities.

## Red Meat Still the One

In **Stage 2** menus were collected from facilities, the meals were divided into the type of protein they were based on, then the number of meals containing each type of protein at the Main meal (daytime) and the Secondary (night) meal were totalled. The recipes containing each type of protein were totalled and then expressed as a percentage of the total of different meals offered at that mealtime.

1. Red meat at the main meal accounted for 47% of offerings. Beef 35% and lamb 12%.
2. Red meat at the night meal was 35% of the offerings. Beef 32% and Lamb 3%.
3. The percentage when both meals were combined was that red meat was 42% of all meals offered. Beef 32% and Lamb 8%.

## Red Meat Product - How it is Currently Used

Red meat product bought in by facilities or central production kitchens can be raw or in a cooked or processed form.

**Raw:** Raw red meat can be from primal or secondary cuts. Due to financial pressures almost all aged care facilities use secondary cuts. One raw product commonly used in the Aged Care market is a topside roast. Other than whole or diced product mince and sausages are frequently used. The main uses of raw red meat in the aged care market are for roasts, wet dishes, sausages and loose meat dishes using mince. Roast meats are also used for cold meat and subsequently used in salads, sandwiches and light meals such as cold sliced meat and salad.

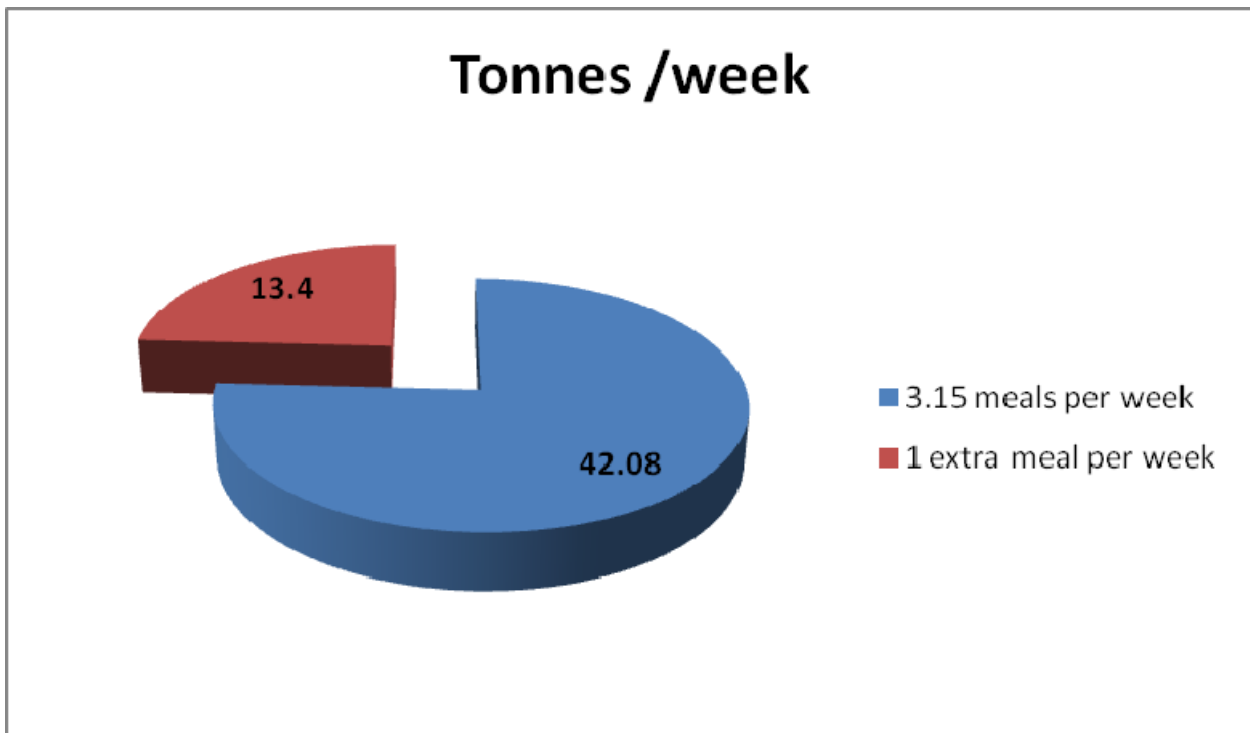
**Cooked:** Many facilities buy in pre-cooked product to save money and time. This is usually cubed for use in wet dishes or whole for use as roasts. There are several suppliers of product in this form that has been pre-cooked, usually sealed in a bag and cooked at low temperatures for a long time in a water bath then rapidly cooled. Could be called boiled beef. This form of product while useful is not without problems. The most common statement was that the colour was grey and unappealing and often tough with very little taste. It is however widely used because of its convenience and "low" price. Because it has been cooked and chilled in a sealed bag this product usually has an extended shelf life.

**Processed:** Products that have been processed into other forms such as patties, croquettes, party pies or as coated ready to heat/serve products. There are some beef based products in this category but very few and perhaps no lamb products. Sausages while processed are in raw form and have been included in that section. Processed products are the type of product used at the secondary meal. These products require little preparation and are in a heat/serve format that requires simply heating and serving to residents. Even though red meat is lacking in representation in this type of product it is still the most popular single product at this mealtime.

## Main meal

### Increase of 1 Red Meat Main Meal per week.

The Recommendations in the dietary guidelines for elderly Australians; state that elderly Australians should consume a minimum of 4 red meat meals per week, with an average of no less than 80g of protein per meal. Currently, derived from survey information there is an average of only 3.15 red meat meals on offer each week. When utilising the government estimates of 167,000 aged care beds in Australia and that the average portion size is 80g this equates to 42.084 tonnes per week or 2,188.37 tonnes per year. If one extra red meat meal per week can be added to a menu cycle that would mean an extra 13.4 tonnes of red meat would be consumed each week.

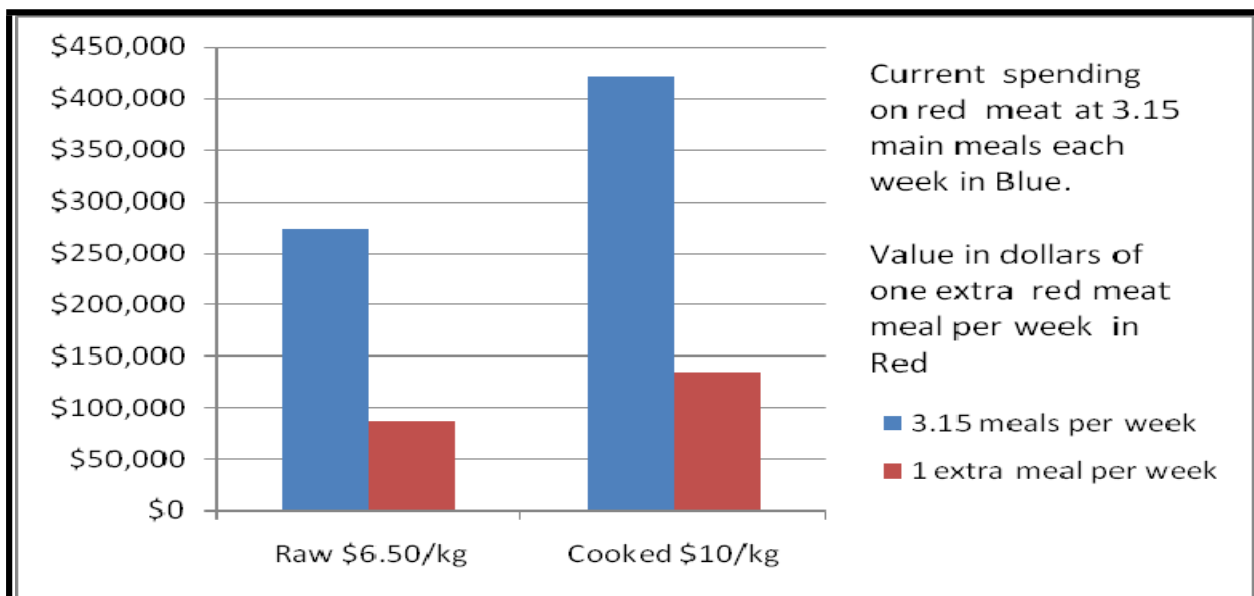


The addition of one red meat meal per week would increase the consumption by an extra 13.4 tonnes per week, which means an extra 694 tonnes per year.

With the desire by residents for red meat one extra meal should be achievable. How this is best done will be discussed in later chapters. Access to suitable red meat recipes will no doubt lead chefs to use the ingredients and in particular the types of meat specified in the recipes.

Graph 2 compares the value of Raw and Cooked red meat. The comparison shows the value of the amount currently used (shown in Blue) and the increased value of meat ((shown in red) with the addition of one extra red meat meal.

Graph 2 compares current usage and future usage in dollar terms based on two different suppliers of raw and cooked meat product. In blue the current sales of raw and cooked product based on 3.15 red meat meals per week. The red bars show the increase in sales (In \$) based on one extra red meat main meal per week. The left section of the graph shows the value of raw product based on a cost price of \$6.50 per kg and the right side shows the value of cooked product at \$10 per kg. In reality there will always be a mix of cooked and raw product. However it is interesting to compare the difference in value between cooked and raw product.



**RAW** products used – mince, sausages, topside, veal chuck as well as a varying range of other cuts. (See full list of cuts offered in appendix 1)

Prices range from \$5 to \$12. Per kg. Average of \$6.50

The current sales are \$420 800 per week or \$21 881 600 per year.

1 extra meal gives extra sales of \$134 000 per week or \$6 968 000 per year.

**Cooked** products used – The most extensively used are YG silverside flat, Eye round, Tunnel boned leg of lamb. (See full list of cuts offered in appendix 1)

Prices \$10 kg - \$13 kg

Current sales of \$420 800 per week or \$21 million per year.



## **Serve size increase.**

Increasing the serve size from 80g to 100g for all red meat main meals is another possibility for increasing the use of red meat. The increase in consumption by increasing serve size is the same as adding one extra 80gm meal per week.

The Recommendations in the dietary guidelines for elderly Australians; state that elderly Australians should consume a minimum of 4 red meat meals per week

An extra 20g of protein per meal x 4 meals=80g week.

80g extra red meat per week = 13.4 tonnes per week

This equates to 694.7 tonnes per year.

Using the same costs for red meat raw and cooked product from the previous example the increased sales equate to:

Cooked product \$134, 000 or raw product \$87,100 per week.

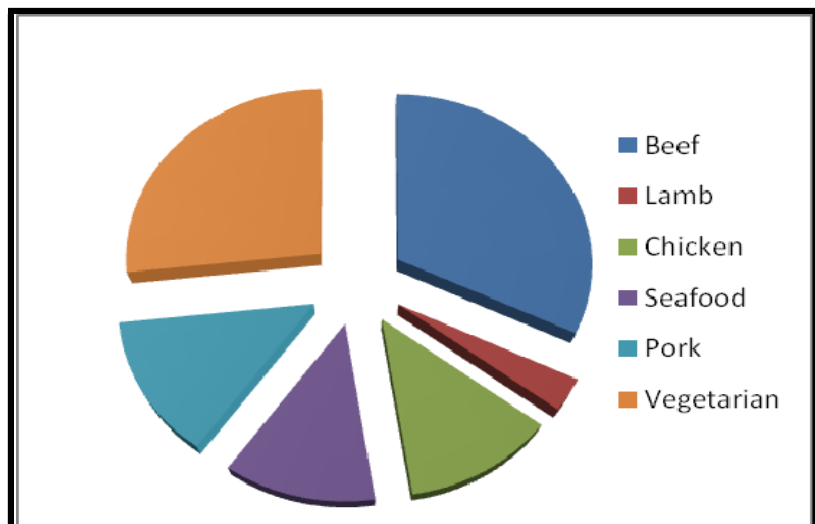
Increasing the serve size at the main meal is probably the most difficult option for increasing the use of red meat. Operators are constantly trying to reduce costs and a simple way is to have smaller serves. Also residents in Aged Care Facilities are often not capable of eating substantial meals and in many cases do not want to eat meals with substantial amounts of protein. This project has looked in depth at the options of increasing the number of red meat meals rather than increasing the serve size.

## Night Meal – Secondary Meal Increase

The Night Meal is the lightest meal of the day. It is definitely smaller than the daytime meal and breakfast. The night meal is served in most facilities between 5pm and 5:10 pm. The chef and kitchen staff usually leaves by 3:30pm so the meal is prepared, plated and served by service staff. It is because of these factors that many of the meal components are prefabricated products. Current consumption is estimated at 20.45 tonnes per week. This is calculated on an average of 2.45 red meat meals per person times the 167000 residents times each meal containing 50g of red meat. Or  $167\ 000 \times 2.45 \times 50g = 20.45 \text{ tonnes}$ .

**This Table and Pie Chart Show the Percentages of the Secondary Meal Food Groups**

Meal Type	Number offered	% Of Secondary Meal
Beef	60	32%
Lamb	6	3%
Chicken	23	12%
Seafood	23	12%
Pork	25	13%
Vegetarian	50	28%
Total	187	100%



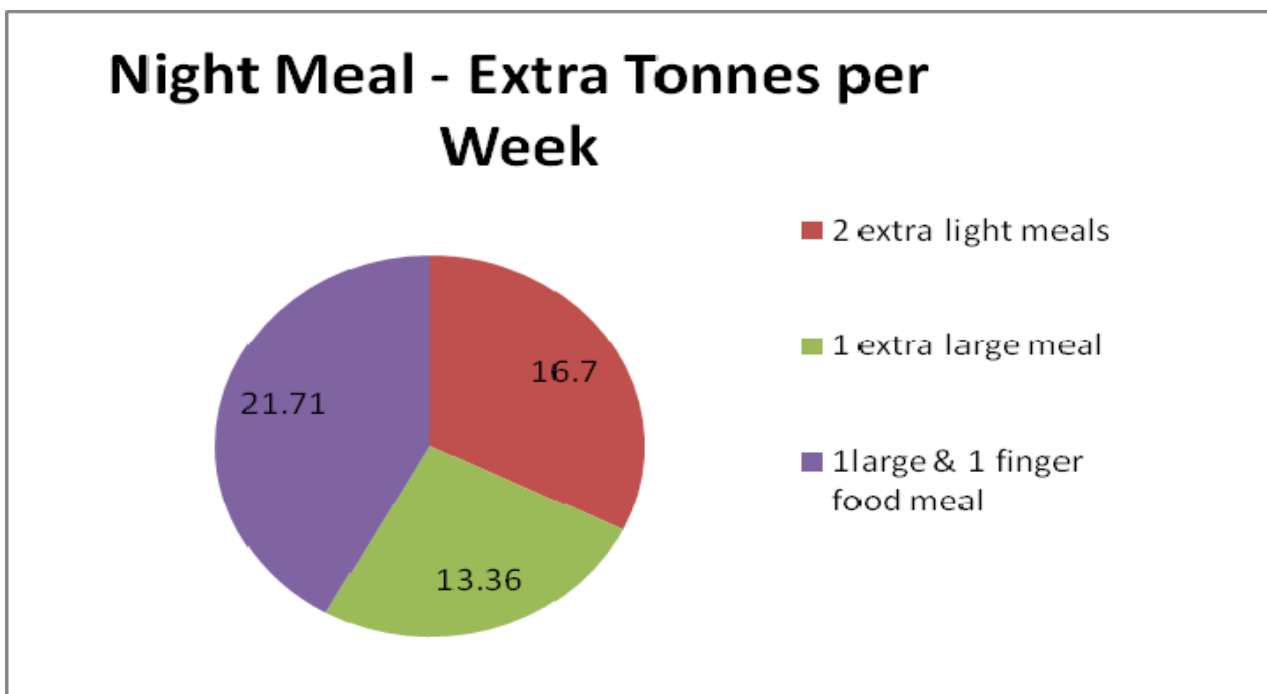
As the night meals are smaller than other meals during the day, the protein content is also smaller, between 30gm and 50gm. The smaller lighter meals are therefore more easily digestible. The night meals are traditionally a combination of small offerings that include soups, sandwiches, meat salads, finger foods as well as a number of more substantial night meals offered during the course of the weekly menu rotation.

When evaluating night time meal menus there were facilities who were serving up to two, more substantial night time meals in their weekly menu cycles. These menus included meals such as lasagne, savoury mince, stroganoff, shepherds pie and curried sausages. These had been prepared earlier by the cooking staff. So there is the opportunity to increase red meat usage at the night meal in a number of different ways.

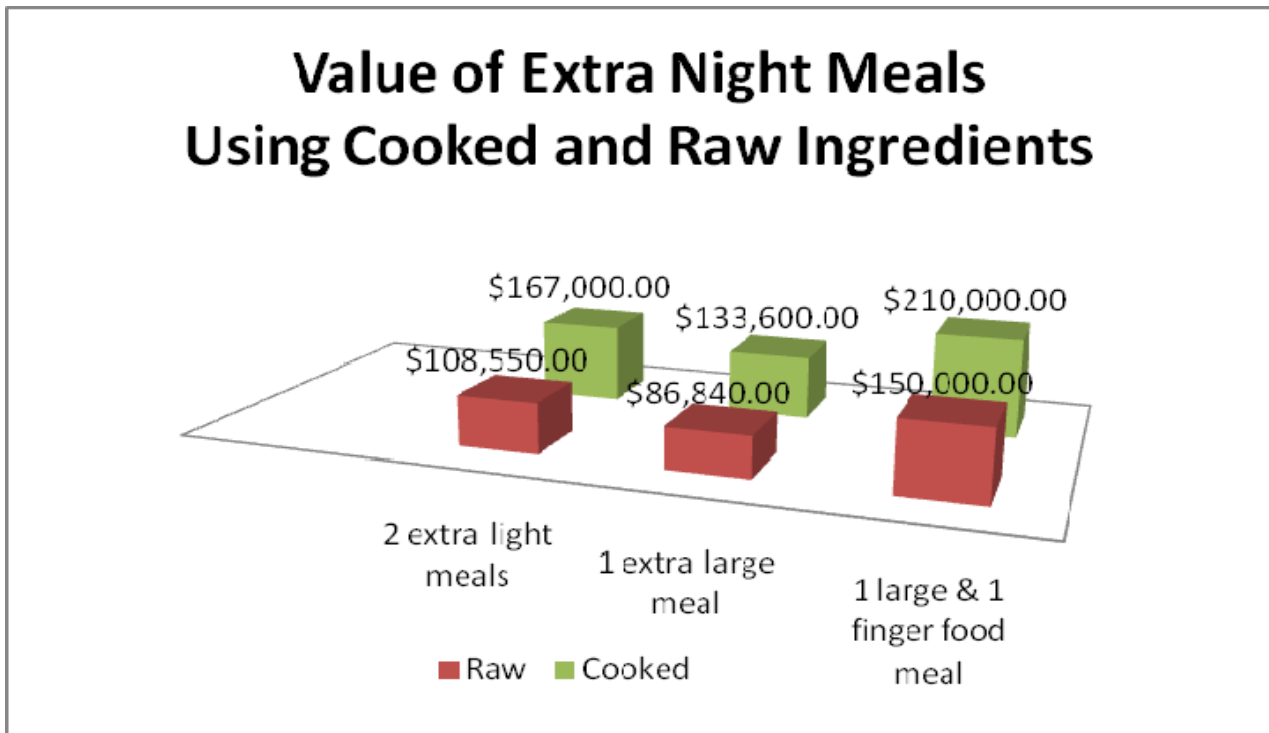
1. Increase by two the number of meals each week using finger type foods. Each meal would contain 30gm to 50gm of meat. Two meals each with a 50gm content would add a total of 16.7 tonnes per week. Value of cooked product would be \$167 000.

- Increase by one the number of substantial night meals each week. With a meat content of 80gm this would be 13.36 tonnes per week. If sourced as raw product the value is \$86,840 or \$133,600 if sourced as cooked product.
- Add one finger type meal and one substantial meal each week to the menu cycle and there is an increase of 21.71 tonnes each week. This would be supplied as a combination of cooked and raw product with a value between \$150, 000 and \$210, 000 each week.

The benefits of red meat in an aged care diet have been well documented both in Australia and Overseas. Both Myer and Whelan have detailed, referred to and listed these studies extensively. So this is an area that will need collation rather than more research effort.



The above graph compares the increase in usage based on different scenarios at the night meal.



The above graph shows a comparison between some different options for increasing the red meat content at the secondary meal. As well as different options the value of each option when costed as raw or processed product is displayed.

Usage Australia wide of red meat in total at the second meal each week is estimated at:

Current red meat usage	20.45 tonnes
Beef	18.75 tonnes
Lamb	1.7 tonnes

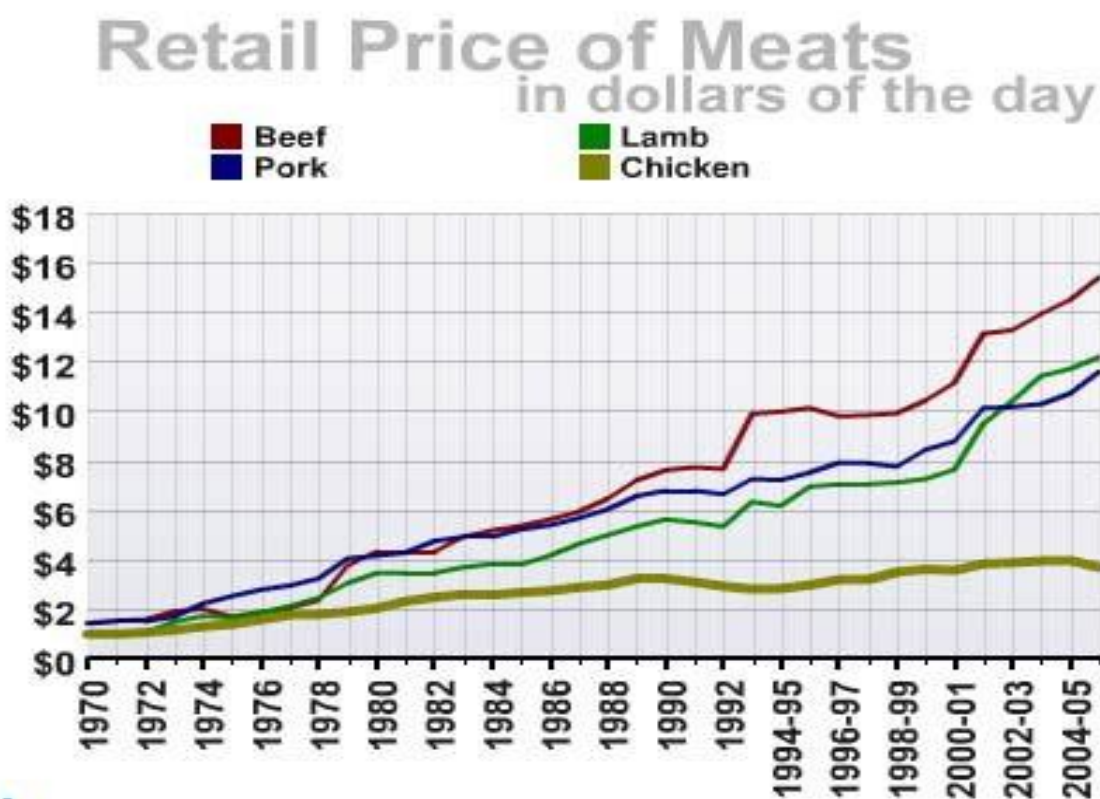
The addition of 2 extra meals will increase usage by between 13 and 21 tonnes with a value between \$86 000 and \$210 000.

Whether the increase will be in raw or processed form and whether the meals are based on lamb or beef are shown in the varying tonnage and varying value.

The possibility of increased red meat use at this mealtime is real and within the scope of this research. How much extra red meat is used is only limited by the range of appropriate products, meal options and new technology developed. This new information must be presented in a suitable form and transferred to the facilities and employees who are best placed to use it in the food decision making process.

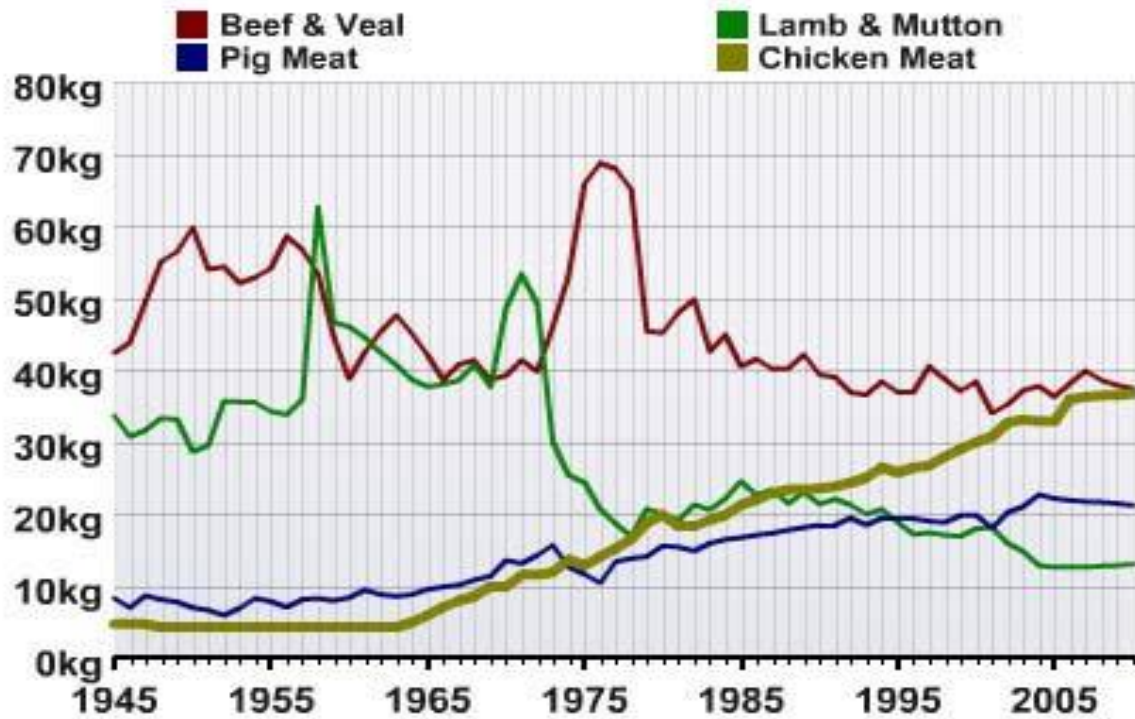
## Comparison of Price & Consumption Between Red and White Meats

It does not mean that because red meat is currently the preferred meat that producers and suppliers can become complacent thinking that this preference will always remain. To get an idea of the direction of future trends it is useful to look at current and past trends in the community because these are the people who will be entering aged care in the future. The two following graphs are from the Australian Chicken Meat Federation. Graph 1 shows the price of different meats and graph 2 shows the average consumption of each type of meat over the past 50 years.



Since the base date of 1970 the price of all meats has risen. Chicken prices have doubled and beef prices have risen about 600%. So in the future as budgets become tighter chicken will become more attractive on price alone. Between 2001 and 2005 Beef has risen from \$11/kg to \$15/kg while chicken has risen to \$4/kg and then fallen slightly to below \$4/kg. Improved breeding in the chicken meat industry has meant shorter time to grow poultry to marketable size. So even though inputs may be rising the cost of production has been able to be kept the same due to the shorter time. In some way beef has to find a way to control the costs rising more by % than other meats. The shorter production chain for chicken also mean fewer profit points than for beef and one company may be responsible for the product from grower to retailer where red meat may have 5 companies involved.

## Consumption of Various Meats in Australia



Graph 2 shows consumption of the different meats since WW2. Beef has remained reasonably constant but has reduced from 42kg per person per year to 38kg per person per year. There is however a reduction in lamb and a rise in pig meat and chicken. It is chicken that shows the biggest increase from 5kg per person per year to about 35kg per person per year. The biggest rise is since 1964. The people who began eating more chicken and less red meat in the 1960's are now entering their late 50's and will begin to enter nursing homes in the next 5 years. These new residents and their families have a large say in meals offered and there may begin to be a preference for meals based on chicken. The reduction in lamb is probably due to the higher process and the move by producers away from lamb to beef. With recent droughts production has fallen further and inputs have risen even higher with the higher cost of supplementary feed. As mentioned the price of poultry has been maintained or even fallen with shorter growing times to slaughter.

## **S**trengths **W**eaknesses **O**pportunities **T**hreats

To try and look into the future a SWOT analysis of beef, lamb and chicken was undertaken to identify possible trends. A separate SWOT analysis was completed on the main meal and the secondary meal, then a combined analysis of the Aged Care Market in relation to red meat. Also SWOT of a competing product such as chicken or vegetarian. This SWOT is done from the point of view of the opposing product not from a red meat point of view.

### **Main Meal – Red Meat**

#### **Strengths**

The residents want it and use it as a comfort food. They have been used to eating it all their lives. It is very versatile and can be cooked in many styles in a wide variety of methods. It can be stewed, roasted, baked, braised, grilled, fried or boiled. Flat sliced red meats can be used in many ways hot or cold.

- Multiple uses of diced meat products.
- Ease of preparation.
- Multicultural acceptability.
- Widespread availability.
- There is a requirement/recommendation for it to be used at least 4 times a week.
- It is a significant and valuable source of Iron and zinc in diets.

#### **Weaknesses**

- There is considerable variability in quality of supplied product.
- Lack of specification knowledge by ordering staff.
- Variability of cooked product – depending on quality of supplied product,
- how it is cooked and prepared and the
- Equipment and staff knowledge used in preparation.
- Best cuts are expensive – particularly lamb.
- Supplied cooked product can be variable in taste, texture and appearance.

#### **Opportunity**

In Aged Care there has been little work done to promote unique selling points.

- Provide facility staff with product information.

- Little work done with partnerships to develop innovative techniques and products specific to Aged Care.
- Transfer this information to the broad Aged Care community.
- There is an opportunity to develop new dishes with ethnic acceptability.
- Markets in self care and home care have not been fully investigated.
- A significant opportunity exists for information transfer to food decision makers in Aged Care on information regarding the use of red meat.

### **Threat**

- Other protein products.
- Products from companies that innovate to produce heat serve products.
- Products from companies targeting aged care or that have better sales and distribution networks.

## **Night Meal**

### **Strength**

- Residents want red meat based meals.
- Red meat is recommended four times each week.
- There is a significant use flat meat in sandwiches.

### **Weakness**

- There are few reheat/serve products.
- Almost no lamb is available as a finger food product.
- Few companies are aware of the size of the market or its special requirements.
- Red meat generally requires cooking and is perceived as a cook/serve product that is not easily prepared and served by service staff.

### **Opportunity**

- There is an opportunity to create new products.
- The recommended levels of four red meat meals each week are not being met.



## **Threats**

- There are many companies producing reheat/serve products.
- These are mostly coated and chicken, fish or vegetarian.
- Not only are there many products but they are available in a wide variety of styles.

## **Red Meat – Beef & Lamb Combined**

### **Strength –**

- At the main meal there is a preference for red meat.
- Offerings of red meat are up to 47%.
- It is the most offered product.
- There are significant health advantages in red meat being a ready source of iron and zinc.

### **Weakness –**

- At the night meal red meat is not offered often.
- There are not as many heat/serve light products available.
- Digestibility, toughness, taste, texture flavour are all very variable depending on specification and cooking.

### **Opportunities –**

- There is an opportunity to add more red meat meals at both day and night meals.
- Providing chefs with appropriate recipes will lead them to use desired cuts.
- There is an opportunity to develop and market a range of heat serve light meals and finger food products.

### **Threats –**

- At main meal red meat advantage could be lost if red meat meals are not made easier to include in menu construction by Food Service Managers of facilities.
- Other meats are more easily included by suppliers providing product information, recipes and benefits through better marketing.
- There is a threat of research promoting the “unhealthy” aspects of red meat.
- Red meat and cancer is one example. It needs to be determined who is the sponsor of such research.
- Better marketing and distribution by competing products targeting the Aged care market.
- R&D by companies producing competing products to develop products specifically designed for the Aged Care market.

## **SWOT on other protein – Chicken**

### **Strength**

- Most Australians have grown up eating chicken and are familiar with it.
- Versatile.
- A large range of products.
- No special specifications.
- Short distribution chain.
- Large range of reheat/serve products.
- Much easier product to cook to specification.
- Low fat and is seen as healthy.
- Price has been maintained at a similar level for many years
- With skin off it is a lean white meat and seen as being very healthy.

### **Weakness**

- Disease and toxins associated with chicken.
- Outbreaks of Salmonella associated with poultry and eggs;
- Clostridium perfringens associated with large catered functions and takeaway establishments;
- Listeria in ready-to eat foods
- Avian Flu
- Does not have the strong flavour profile of red meat that many people desire.

### **Opportunity**

- Large and growing market.
- Can be used in many different types of products.
- Widely used in Asian, European and middle east cooking
- Will suit changing demographics.

### **Threats**

- Threats to chicken are fish and vegetarian products.
- Red meat is not considered a significant threat as chicken and chicken products including eggs are already supposedly taking a bigger portion of the red meat market.
- An adjusted marketing and R&D program could see greater use of red meat and red meat based products.

## Meating the Challenge - Change

There is an ever present debate about quality versus costs in aged care facilities and this is directly related to the strict budgetary criteria under which such facilities operate. But this is also affected by the knowledge of the cooking staff at facility level. Or perhaps it could be described as a lack of knowledge (not to denigrate that they are doing good work under difficult budgetary regimes) of new technologies, techniques and products that are becoming available. Most kitchens in Aged care facilities have a copy of the book “Best Practice Food and Nutrition Manual for Aged Care Facilities”. This was produced by the Central Coast Area Health Service. Written by Rudi Bartl, a nutritionist and Carol Bunney, a nutritionist/ home economist it contains many of the prescriptive elements in Aged Care. The reason it is so widely used is that it has many reproducible proformas and checklists that make the food designers’ job many times easier and simpler.

For change to occur there must be a benefit to the user. Even more importantly there must be a “buy in” and therefore ownership of the “Process of Change”. This ownership is best at the at the grass roots level for any change to be successful and long lasting. A “bottom up” approach rather than “top down” will be more successful and long lasting. The people at lower levels of management will feel an ownership of the program and be more than willing to participate. There are many Food Service Managers very willing to try new products and new techniques. Work with these people and use them as a springboard to others in the industry. Of course it will be an advantage to get the approval and consent of staff in higher level management positions as well.

## Problems:

Food service managers do not have available time. These people are already working within tight budget constraints, within the ethos of their facility, within legislative requirements, with and organising other staff for food preparation and delivery,

Food in Aged Care is constrained by legislative, dietary and physical requirements. Aged Care residents are considered the most at risk group for food borne health problems so Food Safety is of the highest priority and all food must meet the most stringent food safety conditions.

Food must meet requirements of residents and their families. The medical and physical needs must be met while being acceptable to the resident’s palette.

Take the case of an 87year old with dementia, who has difficulty swallowing and is from a rural, Asian, middle eastern or southern European background. In this case the food must be soft or perhaps even pureed. It must be interesting. Often dementia patients lose interest in food and are likely to “play” with their meal rather than eat it. It must be food they are used to eating or they may refuse to eat it and complain long and loudly to staff and their family. It must fit within food safety guidelines and not take all day to prepare as an “extra or special” meal as there are another 120 residents to consider.

## Menu Preparation Time

The time taken in menu preparation is incredibly large. In the case of a real menu, at the two main meals there are at least 2 cooked offerings plus one at breakfast. Add to this dessert and each day there are 7 different recipes needed for cooked meals. So for a 4 weekly rotation the chef will have to develop 200 different recipes. Add sandwiches, afternoon and morning teas plus cold breakfast there is many hours, days and weeks of planning required to create a 4 week rotational menu. If there are any diabetics or residents with special needs there will need to be an additional 200 recipe menu for each diet created and available.

**When considering a meal the chef has to consider the nutritional content, palatability and digestibility, physical ability of residents to eat it and whether it fits within the budget. They also have to ensure it fits within dietary guidelines detailed in following pages. Then they have to work out the quantity needed for the number of residents and what equipment and staff they have to actually prepare, cook and serve the meal.**

**And that is a just one MEAL not the whole menu!**

At the same time there are recommendations for the number of times each protein is served and how often fruit, bread, cereal are served. Other considerations in the menu planning are that the same type of meal cannot be served at consecutive mealtimes. Red meat could be served at the main and secondary meal but only as a roast and a wet dish not two wet dishes.

It can be seen that the role of creating menu's in Aged Care is far different to what a chef would experience in any other food service area such as restaurants, bistros, function centres, cafes or fast food outlets.

A list of points chefs must take into consideration is provided immediately prior to the Sample Menu Performa.

## Solutions

- Provide Food Service Managers with simple, supportive templates of 4 week rotational menu plans.
- Provide backup material and personnel to support these templates. E.g. Beef and lamb recipes with ordering specifications and quantities for 20, 50 100 say and cooking requirements.
- Everything required to provide that meal without having to put any extra thought into the ordering of components, thinking about specifications and nutritional content or preparation by the chef or other food service staff.
- The meal section would need developing to include ethnic and geographic diversity.
- Whatever is provided it must not require any extra time. It must be a time/work saver not a time/work maker.

Support must be available to the Food Service Decision Maker. Ongoing support in the form of email/web, phone or personnel visits would be essential for any trial to be successful.

## Evaluation

Prior to any trials evaluate and quantify menu contents specifically in relation to red meat. Include attitude of Food Service managers to red meat and costs of red meat in their budgets. Also include attitudes of residents and importantly nursing staff and resident's families. At end of trial compare red meat usage and attitude of staff. In particular compare attitude of residents.

### Factors affecting choice of product:

**Knowledge:** How to cook and suitable meal options. Most chefs will have had no training in cooking red meat since their training in Commercial Cookery.

**Suitability:** Will it be acceptable to residents and fit their physical and legislative requirements. The residents at each facility will differ in their likes and dislikes. Many factors influence this ranging from location: city – country to ethnicity.

**Availability:** Knowledge that the product is available, where it is available from, cost and how it can be used.

**Convenience:** Is it available conveniently so that it can be ordered / delivered at short notice, especially if it runs out of stock and needs to be resupplied.

# Guidelines for Meal Selections, Menu Performa, Meal Lists Recipes.

Increasing consumption of red meat in Aged Care facilities is the primary purpose of this research and the research by Meyers and Wheelan. Myer and Whelan have suggested strategies that involve creation of new business and research units within and outside MLA. This paper has identified deficiencies in two key areas.

1. Knowledge
2. Products

The following chapters outline one of the ways to overcome the lack of knowledge and to help facilitate technology transfer. Decision makers/chefs will have lists of meals then each meal will have a fact sheet that includes all dietary, specification, product and nutritional information on that meal.

The first section is a copy of The Guidelines for Meal Selections and is included to show the complexity that decision makers are faced with when constructing a 4 week rotational 6 monthly seasonal menu plan.

The second section is a proforma outline of a one week menu plan. All the meal planner has to do is select meals from the lists provided in part three and add them into the plan.

Thirdly, lists of possible meals suitable for each mealtime are included.

The final section has a recipe and data sheet on each meal. All dietary, nutritional, ordering specification, ordering quantities for each ingredient are included. The data/recipe sheet would include pictures, cooking instructions and possibly suppliers.

This document would need to be published, distributed to all facilities then followed up to publicise and provide ongoing support. It is essential that ongoing support is available and that new recipes are constantly and regularly added. Good examples of similar systems can be found on the websites for Nestle, Kellogs, Sanitarium, etc.

Each menu could include ordering sheets with appropriate specifications to the ingredients to be used. Possibly include a pull-out poster for the kitchen or office. It is not sufficient to create such information without promoting it to the people who would want to use it.

Additionally product development would be a key part of any such project.

## Guidelines for Meal Selections

These guidelines are from Best Practice Food and Nutrition Manual for Aged Care Facilities (bartl & bunney).

### Main Meals

#### Meat Meals

1. Lean red meat is included on the menu at least **4** times a week
2. Lean white meat is included on the menu at least **2** times a week.
3. On each day white meat is served, at least **1** other iron rich food is included.

#### Vegetarian Meals

1. A vegetarian meal is included on the menu at least **1** time per week.
2. Every meal if residents are vegetarian.
3. Vegetarian meals are based on eggs, cheese, tofu, nuts or dried beans.

#### Vegetables and Fruit

1. The menu includes at least 5 serves of vegetables daily. A salad is **1** serve.
2. The menu includes at least **2** serves of fruit daily. This includes fresh, stewed, canned.
3. Fruit juice, if served, is counted only once as a fruit serve.

#### Dairy Foods

1. The menu offers each resident at least **3** serves of full cream dairy foods per day, such as milk, yogurt and cheese.

#### Bread Cereals Rice and Pasta

1. The menu includes at least **4** serves of bread, cereal, rice or pasta foods per day.
2. High fibre bread varieties (eg multigrain, wholemeal, white high fibre) are offered.
3. High fibre breakfast cereals are offered e.g. Rolled oats, All Bran, Weetbix.

#### Snacks

1. Snacks are planned on the menu as part of the total days intake.

2 At each snack time, a fruit, bread/cereal based food or dairy based food appears on the menu.

## **Light, Hot Meals**

1. Lean red meat is offered on the menu at least **4** times a week.
2. Lean white meat is offered on the menu **2** times a week.
3. A vegetarian meal is offered 1 time a week. (Every light meal if resident is vegetarian)

## **Light Meals**

### **Soup**

Soups offered are substantial. I.e. contain legumes, meat, chicken, barley, vegetables

### **Salads**

Salads include a source of protein such as egg, beans, fish, cheese, meat, etc.

Bread is offered with soup and salads.

### **Sandwiches**

Sandwiches include protein fillings such as sliced cold meat, egg, baked beans, fish cheese, meat, etc.

### **Beverages**

Milk is offered at all meal and mid meals and is useful to compensate for weight loss.



<b>Breakfast</b>	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>	<b>Saturday</b>	<b>Sunday</b>
Fruit							
Cereal(hot)							
Cereal cold selection							
Toast							
Hot							
Beverage							
<b>Morning Tea</b>							
Biscuit/fruit/cake/dairy							
<b>Main Meal</b>							
Hot 1							
Hot 2							
Starch							
Green vegetable							
Other vegetable							
Cold(salad/sandwich)							
Dessert							
Beverages							
<b>Afternoon Tea</b>							
Biscuit/fruit/cake/dairy							
<b>Evening Meal</b>							
Soup							
Hot							
Starch							
Vegetables							
Salad							
Sandwich							
<b>Dessert</b>							
Beverages							
<b>Supper</b>							
Biscuit/fruit/cake/dairy							

# List of Red Meat Meal Options

## Breakfast

Mince on toast  
Grilled Sausages  
Lambs Fry  
Sausage and tomato ragout  
Chipolatas

## Main Meal – Day Meal

### Beef

Roast Beef  
Beef & Mushroom Sauce  
Sliced Beef Dianne  
Steak Dianne  
Swiss Steak  
Silverside  
Mixed Grill  
Cajun Beef  
Vietnamese Beef  
Hungarian Goulash  
Beef/Black Bean  
Beef Stroganoff  
Beef Chasseur  
Beef Stroganoff  
Braised Steak Pot & Veg  
Beef Bourguignon  
Beef & Mushroom Cass  
Steak & Kidney  
Meat & Potato Pie  
Meat Pie  
Beef & Onion Pie  
Steak & Mushroom Pie  
Creamy Veal  
Crumbed Veal  
Veal Mango Cass  
Veal Cordon Bleu  
Beef Hot pot

### Lamb

Roast Lamb  
Roast Lamb Mint Gravy  
Roast Lamb with Cumberland  
Sauce  
Sweet Lamb Curry  
Tuscan Lamb  
Braised Lamb  
Moroccan Lamb  
Sweet Lamb Curry  
Lamb Rogan Josh  
Lamb & Rosemary Casserole

## Secondary Meal – Night Beef

Party Pies  
Cocktail Meatballs  
Grilled Sausages  
Chipolatas  
Curried Sausages  
Sausages & Bacon Gravy  
Meatballs in Tomato Sauce  
Rissolle x  
Bolognaise Sauce  
Portuguese Meatballs  
Beef Lasagne  
Savoury Mince  
Cottage Pie x  
Curried Mince  
Beef Stroganoff  
Veal Goulash  
Beef Chasseur  
Beef Bourguignon  
Pasta & Beef Bake  
Steak & Veg Pie  
Braised Steak & Veg  
Party Sausage Rolls  
Party Pies  
Beef Croquettes  
Mini Pasties  
Beef Spring Rolls  
Pea & Beef Pastizzis  
Flame Grill Italian Meatballs

### Lamb

Lamb Patties  
Tripe & Onions  
Irish Stew  
Lamb & Cinnamon Casserole  
Rosemary Crumbed Lamb

## Beef Hot Pot

### Recipe-



### For each recipe include

Ingredients

Specifications

Quantities for different quantities of say 20, 50, 100 meals.

Nutritional Information

Preparation

Cooking

### Additional Recipes

Cottage Pie, Chunky Beef Pie, etc, etc times **200+**.

Include special diet recipes.

## Recommendations:

The residential aged care industry needs:

- Specification
- Education,
- Training,

A significant need exists for product development of pre-prepared heat/serve secondary meats and consumer driven innovation in the use of value added secondary cuts. Remembering that the consumer is a resident in an aged care facility and may have special dietary or medical needs and who relies entirely on supplied food for nutrition. These consumers not only rely on supplied food for their total nutritional needs but their meals must be comfort food to them.

To introduce and promote the concept of menu preparation and meal selection that encourages more red meat take-up facility staff need on going technical support on cooking methodology, menu & meal designs etc in a simple to read and easy to understand format. Operators were keen to have further contact with David Vaile and to share information on his experiences with new production concepts at the Marian Centre.

**Outcome:** In Real Estate it might be Location! Location! Location! But in red meat and aged care its: Specification! Education! Training!

**The SET approach will improve quality; reduce costs and increase resident's satisfaction.**

The co-author David Vaile when working as facility manager at The Marian Centre in Port Macquarie was the only person Value Adding to secondary red meat products – as detailed by Meyer and Whelan in their reports. It is important that the Case Study detailing the experience and the outcomes that resulted be read to gain an insight as to how change can occur and what is needed to ensure this change continues.

## The Marian Centre – A Case Study

**Location:** The Marian Centre is a central production kitchen based in Port Macquarie on the mid north coast of New South Wales. Port Macquarie is a town of 40,000 people with a large population of aged residents and retirees. This is evidenced by the eleven hostels and nursing homes located there. Seven of these (about 450 beds) are owned by the Trustees of the Catholic Church. Residents are supplied with meals three times a day seven days a week from a central production kitchen known as The Marian Centre.

**The Marian Centre:** Is a central production kitchen operating as a cook/chill kitchen. As well as providing meals for the 450 aged care residents it is also a training facility and operates as a function centre with the capacity to cater for seating up to 120 people. The Marian was designed to operate as a cook/chill facility.

Until mid 2007 David Vaile was the manager in charge of operations at the facility where he had begun work as the manager in 1999. Meyer and Whelan both visited and made extensive use of information gathered at The Marian Centre. David Vaile (working closely with David Carew) was making extensive use of secondary red meat cuts over a five year period. He was processing and value adding to this meat to achieve many of the goals and aims outlined in the Whelan (7) and Meyers (9.2) reports. It appears from these reports that The Marian Centre was the only facility that was actively making use of red meat innovation in either raw or processed forms as part of their menu production program.

David Vaile is a qualified chef with a Cert IV in commercial cookery. Previous to the Marian Centre he had owned and operated restaurants, fast food outlets and for 17 years his own catering company.

With no experience in aged care, but a wide and long experience in food service, he was expecting The Marian Centre to be similar to other areas in which he had expertise. He thought it may be similar to bulk catering, where he had worked for 17 years. When asked the main difference his reply was *“I had to deal with the meal concept of total nutritional intake rather than just a meal at a time. I had to make meals within a budget and I had to deal with lots of special needs. In particular the differences in the ability of the residents to chew.”* It was basically learn on the job as you go. Getting information from any source he could and *“developing a network of resources and people”* he could turn to for information proved a long and at times difficult and frustrating task. Information was available from sources like providores, equipment suppliers, trade shows and trade magazines. The problem being none of this information is specific to aged care.

When David commenced all meat for roasting and dicing was being bought in pre-cooked. Even with his knowledge and experience David was unable to produce meat with consistent tenderness. This was evident from the feedback at residents meetings and his own quality regime. There had to be a solution so he developed a

partnership with his new acquaintance, the industry renowned expert in red meat – David Carew.

### **Why did the take-up of processed secondary red meat occur and continue?**

“I was looking for an alternative to address the constant complaints that the roasted meats and diced meats were attracting from the residents. The most common complaint was toughness and flavour for the roast and toughness for the diced. These products were being bought in, in a fully cooked state. The purpose of the project was to address the ever-present quality issues in line with the commitment to delivering the highest quality product and service.”

### **Reasoning**

Upon investigating, it became obvious very quickly that no outside supplier was prepared or capable of producing a pre-cooked product that had adequate flavour, texture or plate profile for roasted meats. Diced meats were inconsistent in size, texture and eating characteristics. The inconsistency of diced meat in the industry is endemic so it wasn't a matter of just changing suppliers as the same problems would occur. He looked at the reasons for this variation and concluded it was due to mixed muscle groups in the diced meat. The easiest solution was to work with a local supplier and get the specification right. Unfortunately this didn't happen as the supplier just wanted to dice all off cuts into the one order. It was decided the best option to achieve the outcomes of consistent quality and flavour was to dice it ourselves in-house. So I employed accurate technology and utilised advanced techniques to under-pin a positive out come with an expected cost benefit, coupled with a marked improvement in the quality of product supplied by the Marian Centre.

### **Sales and savings projections**

The centre embarked on a trial program to develop cooking protocols based around the roast meat products utilised in menu production at the centre.

The value added methods of needle injection of brine solutions have a two fold effect. Firstly increasing the yield of the product by increasing the pre-cooked weight thereby neutralising the effect of moisture loss in oven roasting and creating a more tender, palatable cut of meat. Secondly, creating a product that is shelf stable for over 1 month.

### **Cost Analysis**

The first step in the trial program had been to ascertain exactly how much each out-sourced product line cost per kilo in real terms. These fully cooked out-sourced products are delivered in vacuum-sealed pouches with juice in the bag. Upon opening the pouch the meat juices are discarded hence reducing the gross weight of product available for use. The meat juices are part of the kilo price charged so the yield loss of the juice has to be incorporated in the grossed up price per kilo. Any

added labour cost could be neutralised in the future as new packaging system are developed for all the wet sauces, soups, gravies and porridge. The system will enable the centre to economically mass produce all wet products and reduce yield losses due to skin forming on surface areas it will also enable the centre to more accurately portion products. From a food safety and HACCP perspective it will enable the centre to more efficiently chill and store product.

This is a bonus to the system being employed for roasting. It is anticipated this system will reduce labour and increase yields by 20% conservatively

## MEAT TRIAL - PRODUCT YIELDS

PRODUCT	GROSS WEIGHT	JUICE OUT	YIELD loss %	CCA raw material cost	Bone loss %	cost	Yield extn	Boning Labour cost	Eqp,Bag ,Brine,Rub	COST PER KG	COST PER KG INC. YIELD
Bryopin Roast Hog	1.84	1.24	-33%				\$9.95			\$9.95	\$ 13.23
Carew roast hogg	1.77	1.42	-20%	\$4.15	40%	\$1.66	\$6.64	\$1.80	\$ 1.50		\$9.94
Carew Roast hogg	1.69	1.33	-21%	\$4.15	40%	\$1.66	\$6.68	\$1.80	\$ 1.50		\$9.98
Resort Roast Bee	3.742	2.52	-33%				\$9.50			\$9.95	\$ 13.23
Carew eye round	1.69	1.31	-22%	\$6.00			\$7.32	\$1.80	\$ 1.50		\$10.62
Carew round flat	2	1.64	-18%	\$6.00			\$7.08	\$1.80	\$ 1.50		\$10.38
Bryopin roast pork	3.8	2.53	-33%				\$9.95			\$9.95	\$ 13.23
Carew pork collar	2.28	1.92	-16%	\$6.50			\$7.54		\$ 1.50		\$9.04
Resort Chicken	2	1.5	-25%				\$9.90			\$9.90ea	\$ 11.39
Carew Chicken	2	1.8	-10%	\$7.20			\$7.92				\$7.92
Bryopin pickled po	1.774	1.524	-14%				\$9.35			\$9.35	\$10.66
Carew pickled pork		1	15%	\$5.60			\$4.76		\$ 1.50		\$6.26

### In-House vs. Bought in

To achieve the tenderness required for the aged residents who only have a bite pressure of 3 kilograms per square inch compared to a young persons bite of 300 kilos, advanced cooking technology had been enlisted known as 'altered atmosphere' cooking or 'in bag' cooking, where the product is long slow cooked over twelve hours at low temperature. This cooking technology is coupled with another specialised process of needle injecting the product with a brine solution to assist the natural enzymes in the product to break down the fibres also to increase and retain moisture which is lost during the roasting process.

### Roast Beef

Beef Knuckle – group 2 sub-primal rectus femoris and vestus lateralis. The two muscles in the knuckle are seamed (split apart) yielding two equal sized roasting portions of approximately two kilos each.

Inject the sub-primal muscles with 15% brine solution and leave stand in a chilled environment of 3 degrees for a minimum of six hours, maximum thirty six hours.

Product is then to be rubbed with flavour rub.

Pre-roast the product to achieve caramelisation on the surface and to set the muscle into the correct shape.

Chill product for thirty minutes. This is done because when a product is vacuum-sealed the atmosphere is reduced dramatically inside the machine and if not chilled the product will boil in turn not allowing the product to seal correctly.

Vacuum-seal the product in a heat shrink Cryovac bag.

Long slow roast.

Chill the product to 2 degrees within five hours.

### **Bacterial Analysis**

An independent analysis of all the red meat products developed for use at the Marian Hospitality Centre was required to legitimise the processes employed.

This was undertaken by sending samples of the roast beef and roast lamb to AGAL (Australian Government Analytical Laboratories.) At AGAL the product is analysed to determine the amount of bacteria present in the product (known as a plate count.) The resulting analysis was outstanding. For example the industry standard for fresh meat is 400 to 200 thousand bacterium per cm<sup>2</sup>. Marian Centre sample of roast beef = 46 per cm<sup>2</sup> and roast lamb = 10 per cm<sup>2</sup>.

### **Sequence of events**

In conclusion the objective of the project has been to ascertain whether the Marian Hospitality Centre was able to develop a more economically viable alternative to purchasing out-sourced protein products for their residential clients, coupled with the need to increase the quality of these products in line with the high standards of the Centre and its commitment to continuous improvement.

As an outcome of these objectives, Centre management and staff have taken cooking technology theories and shown that these theories have a practical application in a production environment that will enhance the quality, reduce the ever-spiralling costs associated with out-sourced products and address many of the food safety issues associated with on site cooking by using a system that vacuum-seals the product in a heat shrink Cryovac pouch.

### **Outcomes:**

All previously outsourced roasts and diced red meat were now prepared in-house.

All red meat now had consistent size tenderness and flavour profile.



**Change would not have occurred and been maintained without the knowledge and ongoing involvement and support of an advisor with technical knowledge of the red meat industry with a commitment to the Aged Care industry.**

## **Appendix1 Red Meat Cuts Currently Used**

### **Cooked Products**

#### **Beef**

Eye round roast  
Silverside flat YG  
Silverside Flat Cold meat +PE  
Marinated silverside flat  
Tender veal chuck  
Cajun beef tender veal chuck  
Veal silverside flat  
Small beef approx 1kg  
Rib smoky BBQ

#### **Corned Pickled Meats**

Small silverside flat  
Silverside eye round YG  
Silverside flat YG  
Corned lamb leg boneless

#### **Lamb**

Roast lamb  
Leg tunnel boned  
Leg for salads  
Leg heart foundation trim  
Leg with mint  
Moroccan lamb leg  
Small Leg approx 1kg  
Forequarter chops  
Shanks in wine & rosemary glaze

#### **Cube Meat**

Beef strips  
Beef cubes  
Lamb cubes  
Veal cubes

#### **Skinless Blanched**

##### **Sausages**

Thick 70 gm  
Thin 50 gm  
Chipolata 35 gm  
Herb & Garlic  
1 cm Sliced Sausage

### **Raw Products**

#### **Beef**

Portion cut Steaks  
Chuck YG – Whole  
Chuck diced fresh  
Beef topside cap off  
Blade YG  
Shin beef (gravy beef)  
Beef strips fresh (stroganoff)  
Beef diced fresh  
Beef knuckle diced  
Cantonese diced beef  
Premium beef mince fine.  
Sausage mince  
Steak & Kidney – fresh  
Steak & kidney – fresh  
Minute steak  
Beef bones  
Fresh beef corned silverside flat  
Silverside flat YG  
Rissoles  
Fresh premium beef burgers  
Thin Sausages  
Thick Sausages

#### **Veal**

Veal Topside  
Veal Blade  
Veal Nuts  
Veal Schnitzel or steak  
Veal Schnitzel – crumbed  
Veal Chuck  
Veal Diced  
Veal Strips/Stroganoff

### **Raw Products**

#### **Lamb**

Portion cut Steaks 8/kg  
Lamb Leg fresh – bone in  
Lamb boned & rolled  
Easy carve leg  
Lamb Shoulder – Bone in  
Lamb Cutlets  
Lamb Cutlets – crumbed  
Lambs fry  
Lambs fry – sliced  
Lambs fry – diced  
Lamb Kidney  
Lamb kidney – diced  
Lamb F/Q chops – Griller  
Lamb chump chops  
Lamb diced  
Lamb strips/stroganoff  
Lamb Cantonese  
Lamb brains  
Lamb mince