

# **Multidisciplinary Cross Theme Panel Discussion – Cancer Cachexia**

## **Year 1 (2015) Deakin University Medical School**

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### **Aim**

To incorporate nutrition into a multidisciplinary cross theme panel discussion on cancer cachexia, which runs as an adjunct to a Problem Based Learning (PBL) scenario for year 1 Deakin University medical students.

### **Background**

Deakin University's Bachelor of Medicine and Bachelor of Surgery (MBBS) is a post-graduate medical course, with teaching based around four themes over a four year program. Weekly learning objectives (LOs) are covered through a variety of teaching strategies, with one weekly Problem Based Learning (PBL) case being the primary learning environment. The topic co-ordinator approached a senior Lecturer in nutrition, and a clinical dietitian, both employees of another department within the same university (School of Exercise and Nutrition Sciences) to discuss the merits of running a panel discussion based on one of the LOs. It was envisaged that as this panel would include a significant nutrition component we would seek ethical approval to evaluate this teaching activity.

### **Detail**

A 1.5 hour cross theme panel discussion, based on the PBL case highlighting patient centred care; grief and death from a patient and family's perspective; palliative care management and available services for cancer patients; nutrition management of cancer cachexia versus cardiovascular disease; quality of life issues; smoking health policy and smoking cessation strategies was planned. The cross theme panel discussion was based around the question: What could have been done to improve the quality of life for Bob and his family and why?

The format comprised of speakers seated at the front of a small lecture theatre, simulating a "panel" style session. There were 7 speakers including a palliative care nurse and physiotherapist from the University teaching hospital; a theme coordinator from the School of Medicine (SOM); a senior lecturer and dietitian from the School of Exercise and Nutrition; a lecturer in public health from the SOM; and a local member of the community who was previously a smoker.

The session was planned to run for 1.5 hours with a short break (10min) to sample nutrient dense oral liquid supplements.

**Table 1: Topics and speakers in panel discussion**

<u>Topic</u>	<u>Speaker Number and Title</u>	<u>Time allocated (mins)</u>
What is Palliative care?	1. Palliative Care Nurse, University Teaching Hospital 2. Palliative Care Physiotherapist University Teaching Hospital	45
Death and Dying	3. Theme Coordinator - Ethics, Law and Professional Development, School of Medicine	30
Cancer and Cachexia- Nutritional Issues	4. Senior lecturer, School of Exercise and Nutrition Sciences 5. Clinical Dietitian, School of Exercise and Nutrition	30
Smoking Cessation	6. Lecturer in Public Health, School of Medicine 7. Ex-smoker	15

The weekly LOs in the PBL focused on lung physiology and anatomy, occupational lung disease, nutrition and cardiovascular disease, smoking, and death and dying.

PBL details: A 62 year old man (Bob) diagnosed with lung cancer; past history of asbestos exposure and is a smoker. Focus is on disease pathology, clinical presentation, prognosis and modes of investigations. Keywords: Haemoptysis, lung carcinogenesis, mediastinal anatomy, the pleura, pulmonary collapse, palliative care, grief, occupational lung disease, cancer cachexia, smoking.

## **Evaluation:**

### Methods

Ethics approval was applied for and granted (Deakin University, Faculty of Health HEAG-H\_80). The panel discussion was audiotaped (not videotaped) for later analysis of evidence of any occasions of nutrition content. Only panel members had microphones.

Students were notified of the anonymous, non-identifiable data process that would take place via notification online, one week prior to the session. Agreement was deemed to be by attendance at the session. Panellists were notified one week prior to the session by email and had to confirm their agreement by return email.

### **Results:**

The session ran over time by 30 minutes extending it to 2 hours. Analysis of audio tape revealed the nutrition content of the two hour panel discussion was 34 minutes and 45 seconds (29%). Time spent by speakers 4 and 5 on the nutritional issues of cancer and cachexia was 30 minutes (25%), and time spent on nutrition topics covered by other speakers (1, 2 and 3) was 4 minutes 45 seconds (4%).

Speakers 1 and 2 (Palliative Care Nurse and Physiotherapist from the University Teaching Hospital) included 19 slides (**see table 2**) of which 5 contained references to nutrition (26%). Three student questions related to nutrition out of 18 (17%). Nutrition topics that were raised included nutritional impacts on quality of life, biochemistry of cancer cachexia and weight loss. Total time spent on nutrition in this presentation was 4 minutes (9%).

Speaker 3 (Theme Coordinator - Ethics, Law and Professional Development, SOM) included 15 slides, none of which mentioned or referred to nutrition. One student question out of 7(14%) involved nutrition. This question related to quality of life concerns, and nutrition was used as an example in the response. In total (2%) of this speaker's presentation time related to nutrition.

Speakers 4 and 5 (Senior lecturer and Clinical Dietitian, School of Exercise and Nutrition Sciences) (see table 2) presented on cancer cachexia on the quality of life, weight loss, nutritional supplement requirements, biochemistry of cancer cachexia, alternative therapies, and nutrition assessment / requirements. Students asked 5 (100%) nutrition related questions in this section.

**Table 2:**

**Content of nutrition presentation: Cancer Cachexia- importance of nutrition and nutritional management strategies**

Slide number	Topic / content
1, 2	EPA supplementation: current evidence base and recommendations
3	Causes of weight loss: metabolic changes that occur
4	Nutritional management: role of dietitian; aspects of management: assessment, nutrition strategies; support; monitoring
5	Protein requirements: examples and pictorial representation of daily intake
6	Energy requirements: examples and pictorial representation of daily intake
7	Quality of life and role of nutrition: current evidence and psychological effects of loss of weight, appetite
8	Current commercial supplements: types, cost, availability; other strategies

Speakers 6 and 7 (A Public Health lecturer in SOM and an ex-smoker from the community) had no nutrition content in their 9 slides and there were no nutrition related student questions.

Overall 29% (speaker content and questions) of the 2hr session was spent on nutrition related issues. Of the 3 topics that included nutrition speakers 1 and 2 spent 9% of the time on nutrition; speaker 3 (2%) and speakers 4 and 5 spent 100%.

In the short break of 10 mins after Speaker 3, a variety of ready to drink liquid oral nutrition supplements were provided, energy content ranging from 1 Kcal per mL increasing to 2 Kcal per ml. A range of milk and juice based supplements were included to allow students to experience the varied thickness, consistency and tastes of available commercial products **(See Appendix 2)**.

**Discussion:**

Multidisciplinary cross themed panel discussions are a form of interactive teaching. Such a panel was used in this situation when medical teaching staff highlighted that within some of the weekly learning objectives for a particular PBL, more nutrition was needed in the curricula.

On review of the relevant weekly PBL learning objectives **(see Appendix 3)** three LOs could include discussion around cancer cachexia and nutritional considerations. Dietitians are seen as an integral part of an oncology and / or

palliative care team, who assess nutrition needs before, during, and after treatment. They provide nutritional advice to assist in managing side effects of treatment, improve or maintain energy levels and strength, and help with the enjoyment of food and quality of life.

Thirty minutes were made available to the two nutrition trained speakers to present relevant information and answer questions from students. This generated lively discussion and many questions (**see table 3**). Whether the presence of the nutrition experts on the panel increased or reduced nutrition coverage by the other speakers is difficult to assess, but in total other presenters did discuss nutrition and importantly re-enforced the importance of nutrition in patient management which is likely to re-enforce to student the importance of nutrition. The support of other health professionals in re-enforcing the fundamental role nutrition plays in treatment and prevention of disease is likely to be key to student acceptance of the integration of nutrition in patient care. Without highlighting and increasing awareness of the role of nutrition in this case we do a disservice to future patients being cared for by this generation of doctors who may otherwise have not considered the role of nutrition.

This multi-disciplinary teaching opportunity illustrates the ease with which nutrition content can be usefully integrated into student learning activities, mirroring the integration of nutrition into the medical management of patients.

### **Observations:**

The planned 1.5 hour session went for an additional 30 minutes, making it a two hour session. If expected time limits are exceeded, student concentration often wanes and hence setting a suitable amount of time to this panel style teaching is essential. Sharing presentations between panel members prior to the session to avoid unnecessary duplication is suggested.

The practical session of supplement tasting was very successful, as most students had not tasted these supplements, let alone knew of their existence and their important role. Student's engagement in this activity appeared high as illustrated by feedback such as: "the (supplements) smelt worse than they tasted"; "I enjoyed them"; "juice based (supplements) were better than the milk based."

Having a multidisciplinary panel is essential to illustrate the overlapping of some roles, but highlighting the individually important role of all professionals in a team.

**Table 3: Panel discussion on cancer cachexia: nutrition related subject matter; duration of panellists' presentations; student questions**

							Duration(minutes) and % time of nutrition discussion in panellists' presentation /student questions (no.=number) (m=minutes) (s=seconds)						
Topic	No. of slides	nutrition slides	student questions	nutrition questions	length of presentation	total nutrition (%)	quality of life	weight loss	supplements	bio-chemistry	nutrition requirement	nutrition assessment	alternative therapy
Palliative Care; Speaker 1 & 2	19	5(26%)	18	3(17%)	45m	4m(9%)	15s	10s		3m 35s			
Death & Dying Speaker 3	15	0(0%)	7	1(14%)	30m	40s(2%)	40s						
Nutrition Speaker 4 & 5	7	7(100%)	7	5 (71%)	30m	30m(100%)	2m45s	2m15s	6m	4m	8m 25s	3m 35s	3m
Smoking Speaker 6 & 7	9	0(0%)	4	0(0%)	15m	0(0%)							
<b>Total Minutes</b>					120m		34m 45s	2m 25s	6m	7m35s	8m 25s	3 m 35s	3m

## **Appendix 1: Nutrition related content of Panel Presentations**

### **1. What is Palliative care? Palliative Care Nurse and Physiotherapist**

#### **Key nutrition issues covered by Nurse:**

- The key elements and usual progress of cachexia include weight loss, reduced food intake, muscle wasting and fat loss.
- Explanation health care staff may give to patients: “Causes an inflammatory response which is unhelpful to the body; alters appetite, taste and smell, and how stomach empties; requires more energy to run the body with less intake; alters metabolism (how the body uses energy); alters regulation of proteins and muscles in the body; result in muscle break down (muscle wasting) and make muscles harder to build up; Increase fatigue and decrease energy levels”
- In the Cachexia clinic, dietitians review the patient's current nutritional intake and optimise this; change their perceptions around what is healthy eating; and try to minimise weight and muscle loss. Discussion of issues around body image, family pressure to eat, bowel function and nausea may occur

#### **Key nutrition issue covered by Physiotherapist:**

- Main focus on keeping up physical activity and provide optimal nutrition

#### **QUESTIONS FROM STUDENTS**

- To deal with increased MR and reduced appetite can we give clients any supplements to give them the nutrition they need?  
Answer – cover this later
- Getting patients to have earlier intervention in cachexia e.g. exercise and nutrition – how can this be changed? Answer- the cachexia clinic needs to be promoted and this is currently underway in this region. Evidence shows if people do lose weight, then treatment dose may need to be reduced.
- How are psychosocial issues dealt with e.g. depression and loss of appetite  
Answer – for example if appetite is poor, look at non and pharmacological approaches; antidepressant can be used to increase appetite.

### **2. Death and Dying**

#### **Key nutrition issues covered:**

- Dignity in death and remaining independent is important e.g. drinking a cup of tea from a china cup and not a thick plastic hospital mug

#### **QUESTIONS FROM STUDENTS**

- How do you manage palliative care and artificial feeding?  
Answer- currently voluntary palliative starvation research paper in process; clients who want to die by not eating / drinking. But do you provide community palliative care to these clients??? Withdrawal of PEG tubes – another issue: legally a patient can have a tube removed as food is provided her by medical intervention - not provided “normally’

### **3. Cancer and Cachexia Nutritional Issues: Dietitians**

#### **Feedback on supplement tasting at break time:**

- Supplement drinks smell worse than they taste
- A few really liked the taste
- Some preferred juice based fluids rather than milk based
- Some felt nauseous while drinking these

#### **Key nutrition issues covered:**

- The importance of nutrition in cancer cachexia; early intervention essential for nutritional advice
- Nutrition strategies that may help – need more protein and energy and so supplements are very useful; if patient can’t eat certain foods e.g. steaks; use supplements in between meals and better chilled
- Increased energy intake can maintain weight
- Protein needed to support muscle mass
- In cancer cachexia, there are inflammatory cytokines released so anti-inflammatory FAs may be useful; hence Omega 3s in a drink can be useful; Eicosapentaenoic acid (EPA) supplementation can assist with weight maintenance, preserving lean body mass and due to increased energy intake, allow individuals to increase physical activity (rather than store energy and increase weight)
- Increases in metabolism in cancer cachexia leading to total energy expenditure reduction and hence reduced physical activity
- Causes of weight loss: reduced food intake, changes in appetite, nausea, elevated resting energy expenditure, reduced physical activity, hyper metabolism
- Level of hyper metabolism varies from 60-150% in individuals with cancer cachexia
- Referral for nutrition intervention if anorexia or weight loss greater than 5% in 6 months
- Nutrition screening tools such as the Patient Generated Subjective Global Assessment (PG-SGA) undertaken by dietitians, or the Malnutrition



Screening tool by other health care practitioners; looks at weight loss in last few weeks / months; who undertakes cooking at home

- Nutrition Intervention: support and counsel patient / family / carers; high protein (<1.4g / kg/ day), energy ( >120 Kj /Kg / day) and EPA (1.4-2.0g/ day); use commercial supplements; ongoing monitoring
- Obstacles: difficult to attain energy and protein requirements and volume of food due to nausea, loss of appetite, taste changes; eating for health goals difficult to modify i.e. increased fat and sugar
- Carers want to feed and look after people – they find it hard to understand reductions in appetite; similar symptoms to some pregnant women i.e. nausea, lack of appetite
- Fluids need to have energy in them and hence supplements useful; some have no taste and so can add to cups of tea
- Clients need to be able to sample supplements before they buy
- Disguise fat in foods to provide extra energy using oils and margarines; not the time to be using low fat products
- Quality of Life: determined by weight loss, nutritional status; individual response to changes in physical appearance due to weight loss
- Nutritional counselling does prevent further decline in nutritional status and can improve outcomes

#### **QUESTIONS FROM STUDENTS:**

- Are juice diets useful?  
Answer – no as low protein and energy
- Could high fat diets to increase weight be bad for patients- current research?  
Answer- key issue is weight loss in cancer patients – juices don't provide sufficient energy and protein; weight has to be rising. Juices fine when had treatment and on the road to recovery
- Is it different treating overweight clients with cancer?  
Answer - check protein intake as loss of muscle is the major issue that impacts on their movement and QOL. Can't assume overweight people eat large amounts of food. Not the time for weight loss when they are having cancer treatment – aim for weight maintenance. Older clients already have low muscle and this can be exacerbated by obesity
- How do you manage patients with diabetes?  
Answer - blood glucose control is important but not the major priority
- What if someone is on a fluid restriction?  
Answer -use more powders added to foods rather than liquids

## 4. Smoking Cessation

### Appendix 2:

#### Methods

A variety of supplements were provided to students (during the half time break of the panel) to allow students to experience the varied thickness, consistency and tastes of a range commercial products. Supplements used including milk based commercial liquid drink products: Ensure, Ensure Plus, TwoCal HN (Abbott Nutrition), and fruit based liquid drinks Fortisip (Nutricia) and Resource (Nestle).

### APPENDIX 3: Learning objectives

1. Review the anatomy of the mediastinum.
2. Describe the differential diagnosis of haemoptysis.
3. Describe the anatomy and histology of the pleura; understand the physiological significance of maintaining pleural pressure and what happens in pneumothorax; understand how the skeletal muscles of respiration affect intrapleural and alveolar pressure to facilitate air movement during breathing.
4. Explain the pathophysiology of pleural effusions and the differentiating features of transudates and exudates.
5. Describe the association between pleural effusion and potential for pulmonary collapse (atelectasis). With regards to pulmonary collapse (atelectasis), review the CR7 LO regarding ventilation and perfusion mismatch.
6. List the clinical features and presentation of lung carcinoma. Be able to describe the mode of spread and prognosis of lung carcinoma.
7. Describe the gross and histological features of small cell, squamous cell, large cell carcinoma and adenocarcinoma.
8. Recognise the risk factors which contribute to the development of occupational lung diseases; understand how dust particles or aerosols affect the lung (e.g. metal working fluids, asbestos, silica, coal and organic dust). Briefly describe the deposition, accumulation and the pathological response to these particles or aerosols. Outline the mechanisms of airway defence.

9. Consolidate your understanding of the pathophysiology of the airways and disease progression of patients with occupational asthma, silicosis, pneumoconiosis (e.g. coal miner's lung), asbestosis and alveolitis.
10. Discuss the influence of individual and societal factors on considerations of death and dying.
11. Understand the reasons for smoking and why it is difficult to quit.
12. Discuss the effectiveness of various smoking cessation strategies and the role of health care services in supporting smoking cessation.