

SMICS

---

Southern Melbourne  
Integrated Cancer Service

**Dietitian involvement in the care of upper  
gastro-intestinal cancer patients:**

**A situation analysis conducted at  
Peninsula Health**

**2011**

**Prepared by:**

Melissa Loorham

**Prepared for:**

SMICS Upper Gastro-Intestinal Tumour Group

SMICS Governance Committee

## **ACKNOWLEDGEMENTS**

Louise Buckley, Senior Dietitian, Peninsula Health  
Wendy Wild, Cancer Service Improvement Coordinator, SMICS  
Amanda Eddy, Cancer Information Analyst, SMICS

## **ORGANISATIONAL DETAILS**

Southern Melbourne Integrated Cancer Service (SMICS)  
823-865 Centre Road  
East Bentleigh, Victoria, 3165  
Tel: 03 992 88541

### **Principal contact person:**

Sue Liersch  
Cancer Service Improvement Manager, SMICS  
Postal Address: PO Box 72, East Bentleigh, Victoria, 3165  
Telephone: 03 9928 8541  
Facsimile: 03 9928 8624

**May 2011**

# Table of Contents

Introduction .....	4
Context .....	4
Project aim .....	6
Current UGI/HPB service provision and nutrition screening .....	6
Project methodology .....	9
Findings .....	10
Nutrition screening and dietetic activity .....	10
Nutritional status .....	13
Discussion .....	15
Opportunities for improvement .....	18
Next steps .....	20
Appendix: Medical Record Audit Tool .....	21
Abbreviations .....	21
Abbreviations .....	22
References .....	23

## Introduction

The need to create better experiences for cancer patients and carers at all stages of their cancer journey has been identified by the Victorian Government as a priority for the cancer service reform<sup>1</sup>. Supportive care has been defined as care that helps those affected by cancer cope with the cancer and its treatment through the entire cancer pathway<sup>2</sup>.

Supportive care includes five inter-related domains of care:

- physical
- social
- psychological
- spiritual
- information.

The physical domain refers to care which addresses a wide range of physical symptoms<sup>3</sup>, including nutritional care.

Adequate nutrition is fundamental for wellbeing, functional status, healing, recovery from illness and injury, and quality of life<sup>4</sup>. Nutritional status has been identified as a critical factor influencing morbidity and mortality after a cancer diagnosis, and timely, adequate nutrition may result in improved patient outcomes<sup>5</sup>, improved response and tolerance to treatments<sup>4</sup>.

Patients with upper gastro intestinal (UGI) and hepato- biliary (HPB) malignancies are reported to have a high incidence of malnutrition which has been associated with reduced quality of life, performance status, increased risk of chemotherapy induced toxicity and decreased response to treatment<sup>6</sup>. For patients with oesophagogastric and pancreatic cancers it has been reported that as little as five percent weight loss at time of diagnosis has a significant adverse effect on long-term survival<sup>6</sup>.

The Patient Management Frameworks (PMFs)<sup>78</sup> for *Upper Gastro Intestinal tumour streams: Oesophagogastric and Pancreatic cancer* provide best practice guidelines for cancer care.

The PMFs identify the dietitian to be an integral member of the Multidisciplinary Team (MDT). The PMFs recommend that best practice would include referral to a dietitian in specific areas where patients experience:

- Weight loss, cachexia and malnutrition.  
A dietetic referral is generally recommended pre- and post-operatively for patients with oesophagogastric cancer<sup>8</sup>.
- Weight loss, cachexia and changes in appetite can be improved for some people through nutritional support.  
A dietetic referral is recommended for the majority of patients with a diagnosis of pancreatic cancer<sup>7</sup>.

## Context

The Southern Melbourne Integrated Cancer Service (SMICS) is a joint initiative of Alfred Health, Cabrini Health, Peninsula Health and Southern Health and was established in 2004 to facilitate and support improvements in the integration and coordination of cancer services across Southern Melbourne.

Quality improvement activities that are focused on stakeholder engagement and participation, monitoring the current service with the aim of evaluating and improving the cancer service in line with best practice has been one successful approach to influencing change. One such quality improvement project conducted at Southern Health in 2009, was a situational analysis to review and explore the involvement of dietetic services in the care of Upper Gastro-Intestinal (UGI) cancer patients within Southern Health.

The activity was instigated on the basis of discussions with clinicians involved in the UGI/HPB multidisciplinary team (MDT) meeting at Southern Health, who identified a range of concerns relating to inconsistencies in access to dietetic support for cancer patients. Team members highlighted the need for dietitian involvement that included participation in the MDT treatment planning discussions and preoperative assessment of patient's nutritional status in order to improve their cancer treatment experience and quality of life.

The Southern Health UGI team members identified that patients who had undergone the following interventions were considered at risk of malnutrition and in need of specialised dietetic support (at risk group):

- Ivor-lewis oesophagectomy
- trans-hiatal oesophagectomy
- L) thoraco-abdominal oesophagectomy
- total gastrectomy
- sub-total radical gastrectomy
- oesophageal stent
- Whipples procedure
- distal pancreatectomy
- liver resection
- any patient requiring a feeding tube
- any patient who has had the radiological procedure; fluoroscopic nasogastric insertion.

The findings of this analysis reported on the existing dietetics service provision for the group of patients and identified service gaps. These opportunities for improvement and future recommendations were presented to the SMICS UGI tumour group meeting. There was consensus to replicate this quality improvement activity across the other public member health service: Peninsula Health and Alfred Health.

As a result of the Southern Health situational analysis, the Southern Health Dietetic Service, in collaboration with Monash University is undertaking a Randomised Control Trial (RCT) in 2011. The purpose of the trial is to investigate the efficacy of an alternate model of care involving early nutritional intervention and telephone support. Funding for the conduct of this project has been allocated through the SMICS Supportive Care Research Grants 2011.

SMICS has collaborated with Peninsula Health dietetics service to map existing dietetic service provision for this group of patients in order to identify any service gaps or opportunities for improvement.

## ***Project aim***

The aim of the situation analysis within Peninsula Health was to identify:

- existing referral pathways to dietetic services
- at what step(s) of their treatment pathway UGI/HPB cancer patients are currently accessing dietetic services
- any existing service gaps
- opportunities to enhance dietetic involvement in the care of UGI/HPB cancer patients.

## ***Current UGI service provision and nutrition screening***

The Peninsula Health UGI surgical service consists of three Visiting Medical Officers (VMOs) undertaking a range of UGI surgery and procedures. Hepato- biliary surgical procedures do not occur at Peninsula Health, therefore patients requiring HPB surgery or procedures are routinely referred to The Alfred Hospital. The UGI service provides an outpatient clinic for patient assessment, pre-admission and follow up care. Pre and postoperative care for this group of patients is undertaken in the consultants' private rooms and outpatients' clinics. Inpatient care for this group of patients is undertaken on 4GN and 4GS, which are general surgical wards, each consisting of 30 beds. The most accessible radiotherapy service in the local area is located at Frankston Private Hospital and is not serviced by a dietitian.

Patients with a diagnosis of UGI cancer at Peninsula Health present from various entry points to the service. These mainly include: public outpatients clinic via General Practitioner (GP) referral, consultants private rooms, from Cabrini Hospital following surgery or chemotherapy treatment and from Frankston Private Hospital following radiotherapy.

Multidisciplinary planning for this group of UGI patients occurs via a joint colorectal and UGI MDT meeting that occurs on a fortnightly basis for discussion of cancer patients at Peninsula Health. This meeting is attended by medical clinicians, nursing and allied health professionals including dietetic representation. An Allied Health (AH) handover meeting occurs on the surgical inpatient wards on a daily basis, attended by the unit dietitian. This meeting serves as a direct handover and referral mechanism for patients requiring dietetic intervention.

At the time of this audit the dietetics service was funded to provide service to the following units at Peninsula Health:

- the inpatient wards are serviced by approximately 0.4 dietitian EFT
- Medical Oncology ward (5FN) and the Day Oncology unit are serviced by 0.5 dietitian EFT.

It is only since March 2010 that the dietetics service has been re-prioritised to attend pre-admission clinic, providing an opportunity to screen all UGI patients pre-operatively. Dietetic services were noted to be under resourced in 2009 due to vacancies in staffing; in 2010 an adequate staffing complement has provided a positive impact on the nutrition department's ability to provide services in a timely and comprehensive manner to the Peninsula Health service.

The dietetic service at Peninsula Health utilise a pre-emptive screening system, developed by the dietetic team that ensures patients with the specified UGI cancer or high risk procedures are identified and an initial assessment is performed. The system is initiated by the dietitian that services the surgical unit. The dietitian screens the pre-admission clinic lists and inpatient surgical wards for these specific patients, then seeks verbal clarification/referral of patient needs through consultation with the nursing staff at the AH meeting. This discussion generally results in an initial assessment being undertaken by the dietitian.

This system does not replace the need for referral by other sources, however does allow the dietitian's to proactively manage their time and workload. The initial assessment undertaken by the dietitian is based on a global assessment tool. Follow-up by dietetic services is discretionary and routinely occurs for as long as deemed necessary. The method of follow-up varies whereby the dietitian attends on the surgical and oncology wards in person and in the outpatient clinic as an informal service and via telephone contact.

Nutrition screening identifies individuals who are malnourished or at risk of becoming malnourished and those who may benefit from nutrition support<sup>4</sup>. According to ward protocols, a dietetic referral screen incorporated into a modified version of the Malnutrition Screening Tool (MST) should be undertaken by the nursing staff on all patients admitted for surgery as part of the Surgical Clinical Pathway and documented on the MR007 form. This process prompts nursing staff to make a referral to the dietetic service if the MST score is two or greater. An internal audit of the use of the screening tool conducted in 2009 by the Peninsula Dietetics department revealed that the screening tool is rarely completed accurately<sup>9</sup>.

Since 2008, nutritional screening using the MST was recommended to be undertaken for patients across all tumour streams who attend the Oncology Day Unit (ODU) and the Medical Oncology ward (MOW) in the nursing pathway, however does not routinely occur for all patients<sup>9</sup>. The instigation of the MST screening process combined with the establishment of a mandatory referral system for all patients with a diagnosis of UGI cancer was designed to capture patients at risk of malnutrition in the ODU and MOW. Referrals can be made to the dietitian by nursing, medical or allied health staff. Anecdotally, referrals to the dietetic service occur most often through verbal means from nursing and medical staff on the ward and at MDT team meetings.

The MST is a nutrition screening tool that has been validated in the use of inpatients and oncology outpatients.<sup>104</sup> MST has been validated as a predictor of nutritional status through consideration of unintentional weight loss, the amount of weight lost and the presence of decreased appetite<sup>4</sup>. The MST measures nutritional status based on appetite and recent unintentional weight loss between a score of zero and five. A MST score of zero indicates low risk of malnutrition and five indicates high risk of malnutrition. Those patients with a score greater than or equal to two are considered at risk of malnutrition and hence require referral to a dietitian for comprehensive assessment.

Discussions with UGI MDT members highlighted the following points regarding the service and offered general comments:

- the treatment of UGI cancer is highly specialised and dependant upon adequate VMO staffing numbers at Peninsula Health

***["the number of UGI patients fluctuates with the changing of HMOs and the type of surgery/speciality that they undertake", Clinical Director of Surgery, Peninsula Health.]***

- high level of satisfaction with the current dietetic service provision

***["the dietitians at Peninsula Health provide a really good focused service here across the board", Clinical Director of Surgery, Peninsula Health".]***

- the ageing population profile of the Mornington Peninsula region may result in an increased demand on cancer services at Peninsula Health
- the UGI surgical service noted that the issues identified in the original Southern Health situational analysis were not applicable to Peninsula Health.

Dietetic staff acknowledges the following limitations and challenges:

- with the given resources the service is stretched, which necessitates prioritising the workload to patients at risk of malnutrition in general at Peninsula Health
- lack of best practice guidelines in the UGI /dietetics area for the provision of dietetic support for UGI cancer patients
- lack of dietetics input to the MDT planning and medical team meetings
- lack of resources to manage a significant increase in patient demand
- anecdotal reports of late referrals to the service, by which time patients are significantly malnourished
- lack of referral / communication between Frankston Private and Peninsula Health for UGI cancer patients undergoing medical oncology / radiotherapy treatments
- a service gap for follow up in referral to community dietetics services due to limited community dietetics resources and varying degrees of expertise in managing surgical patients of community dietetic services.

## Project methodology

All patients with an UGI/HPB cancer diagnosis admitted to Peninsula Health between 1 January and 30 June 2009 were identified utilising existing Victorian Admitted Episode Data (VAED). Within this time period a total of 18 patients who had undergone one of the specified UGI procedures identified by Southern Health MDT members were identified for audit as the 'specified' group. A further 18 UGI/HPB cancer patients who had not undergone one of these procedures were identified for audit as the low risk or 'control' group.

A medical record audit tool (Appendix 1) was developed in the original Southern Health situational analysis by SMICS with the advice of the Southern Health Monash Medical Centre (MMC) Dietetics Manager and reviewed by the Peninsula Health Dietetics Deputy Manager. The audit tool was designed to capture data regarding patients' risk of malnutrition and the utilisation of dietetic services during the steps of the treatment pathway described in the UGI PMFs<sup>78</sup>.

The medical record audit was undertaken utilising the above tool jointly by SMICS staff and the Peninsula Health Dietetics Deputy Manager to ensure comprehensive data extraction and inter-rater reliability.

## Findings

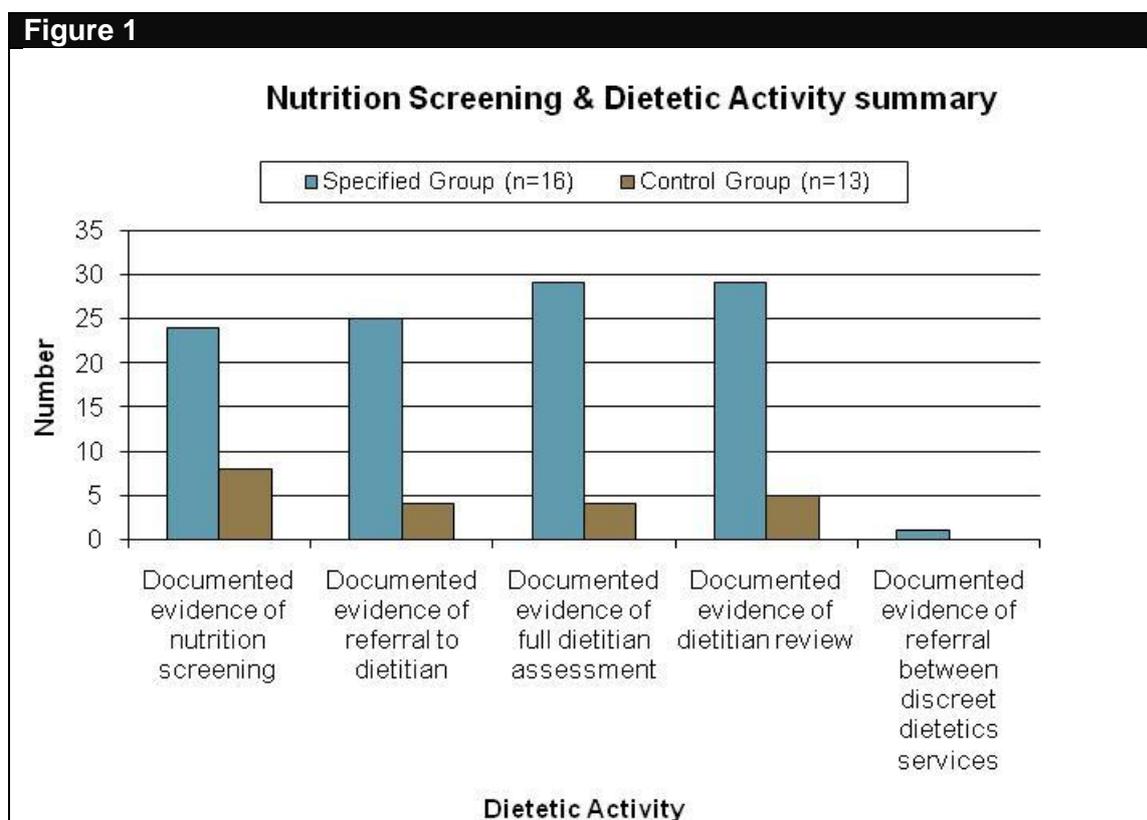
Of the 36 medical records requested, a total of 35 were available for audit. This comprised 18 records of patients who had been admitted for one of the specified procedures and 17 records from the control/low risk group of UGI cancer patients. All volumes of the medical record were sought to ensure completeness of audit across the cancer trajectory for each patient.

Two of the patients from the specified group and four patients from the control group were excluded from the study on the basis that the record did not match the criteria of recent diagnosis and treatment within the timeframe of first six months in 2009. The total patients reported on in this study are 16 in the specified group and 13 in the control group.

There was an absence of documented evidence of cancer care that occurred during radiotherapy treatment within the medical record due to this aspect of care being undertaken at Frankston Private Hospital.

### ***Nutrition screening and dietetic activity***

The audit collected data regarding a range of activities from screening of patients' nutrition status by nursing staff, through to full assessment by a dietitian and referral to external dietitian services at each stage of the treatment pathway. Figure 1, provides a summary of the aggregated episodes of nutrition screening by health professionals and dietetic activity for both groups of UGI cancer patients across all stages of the treatment pathway.



There was evidence of awareness of the potential for malnutrition in the specified group as the audit revealed high proportion of overall screening, dietitian assessment and intervention. The study revealed that in the specified group there was minimal use of a formal screening tool on the surgical wards or in the oncology day unit with only three records indicating evidence of screening, using the MST (n= 2) and the modified version of the MST (n= 1).

It is important to note however that 11 of the 16 patients were identified by the dietetics pre-emptive screening system and initial assessment. This pre-emptive screening system, whereby early dietetic intervention and assessment occurred was found in six records at time of initial diagnosis and determination of treatment. Another seven records provided further evidence of dietetic screening and assessment at post operative phase or there after. Pre-operation identification of patients with high risk UGI cancer or surgical procedure on the inpatient wards enables early dietetic referral and intervention to assist in malnutrition treatment and prevention.

In the specified group of the five patients that were treated in the oncology day unit, only two received a formal MST screening. The three patients that were not screened were rated with the MST estimate to be at risk with a score of three or greater. The medical team were found to have informally screened and verbally referred on three patient occasions in the specified group. In the specified group of patients, the most likely pathway to result in dietetic intervention was via the dietetic pre-emptive screening system occurring by screening admission lists and attending allied health meetings and MDT's at initial diagnosis or determination of treatment.

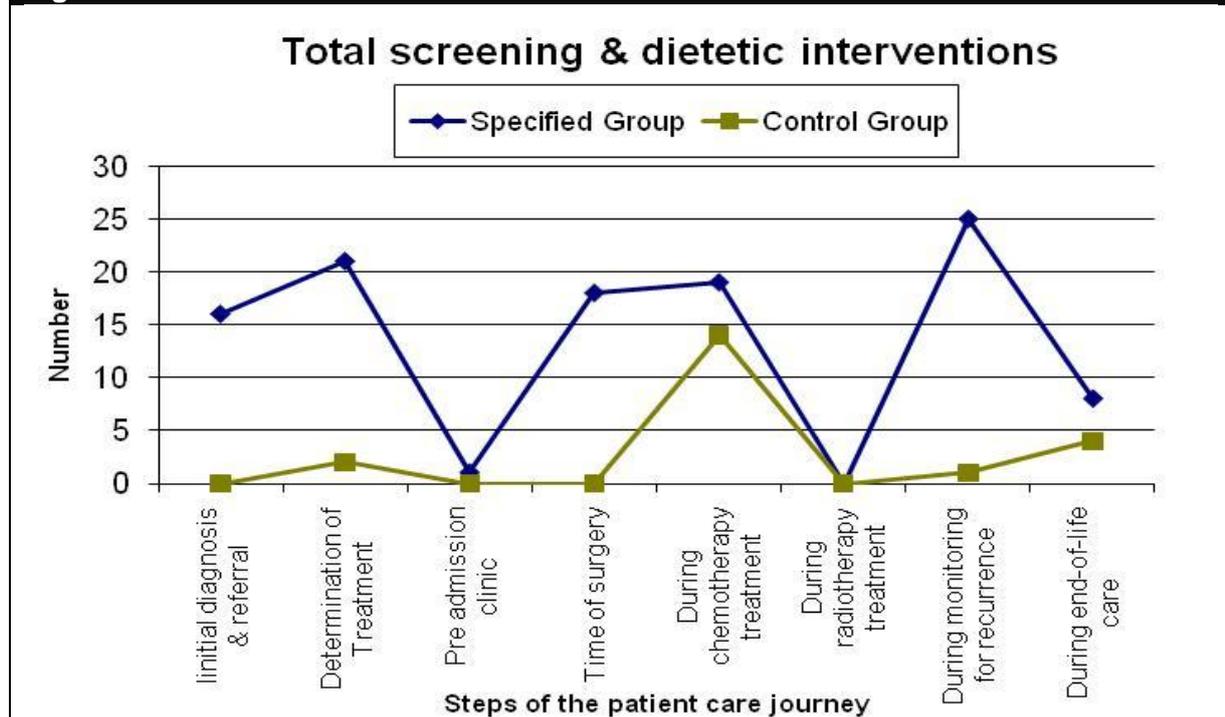
Interestingly, in the control group there was a greater evidence of formal screening having occurred, with six of the 13 records showing evidence of use of the MST (n= 4) and modified MST (n= 2). These incidences of screening occurred in oncology, performed by oncology nurses and at time of end of life care by the ward nurses respectively. There is no correlation or pattern to suggest why screening occurred more in the low risk group than the specified. Of note, the level of pre-emptive dietetic screening in this group was minimal as they were predominantly patients that had been treated in the ODU, where the MST screen is designed to identify patients with UGI that are at risk of malnutrition. Two patients were found using this process via the inpatient ward meeting. The use of formal screening with a tool is not a predictor of dietetic intervention in this group of patient's activity.

In the specified group, dietetic reviews were spread evenly across the care continuum and were found to have occurred for nine of the 16 patients on multiple occasions across the cancer journey. There was little evidence of referral between dietetic services in either group, with only one referral in the specified group that occurred between the acute dietetic service and the rehabilitation dietetic service within the Peninsula Health Network.

The audit revealed the dietetic service at Peninsula Health to be intuitive to the needs of the specified group for nutrition support and very thorough with all patients undergoing initial dietetic assessment and intervention. Early dietetic intervention occurred in over half of the patients at time of initial diagnosis and referral / determination of treatment phase.

The audit also collected data regarding the timing of all nutrition screening, assessment and interventions according to the stage in the care continuum as specified in the PMFs. Figure 2 provides a summary of aggregated activities according to these stages, for both the other and the specified groups of patients.

Figure 2



Evidence of nutritional screening, and consultation with a dietitian was identified across the continuum, with the exception of pre-admission clinic and during radiotherapy treatment. The control group of patients there were relatively low levels of evidence of nutritional screening and intervention, other than at chemotherapy phase of the treatment pathway.

These results are consistent with the current model of service delivery and supported anecdotally by the UGI surgical team members satisfaction with the current dietetic service in this group of patients. However the ability of the audit to capture all nutrition screening and dietetic activity at the various stages of treatment has been limited by the following issues:

- aspects of cancer care were not found in the medical record i.e. radiotherapy
- the potential for understating activity in those patients whom had not progressed through all stages of the care pathway at the time of the audit
- the potential for understating activity in those patients whom were referred to Peninsula Health for surgery but whose care at other stages of treatment was undertaken by private cancer care providers.

## Nutritional status

Of the 29 files audited, three of the 'specified' group and six of the 'control' group had been screened using the MST or the modified version of the MST. Where screening had not been undertaken, the nutritional status of the patient was estimated by the auditors, relying on any documented nutritional information available in the record using the MST.

Figures 3 and 4, provide summaries of the estimated risk of malnutrition for both the specified group and control group. For the purpose of analysis, patients with a documented MST or estimate MST score of less than two have been grouped as low risk. The "at risk" cases included those with an MST score greater than two, including those patients whom had been assessed by a dietitian as being malnourished. Where insufficient information was contained in the record at a particular stage of the treatment pathway, the nutritional status was recorded as unknown.

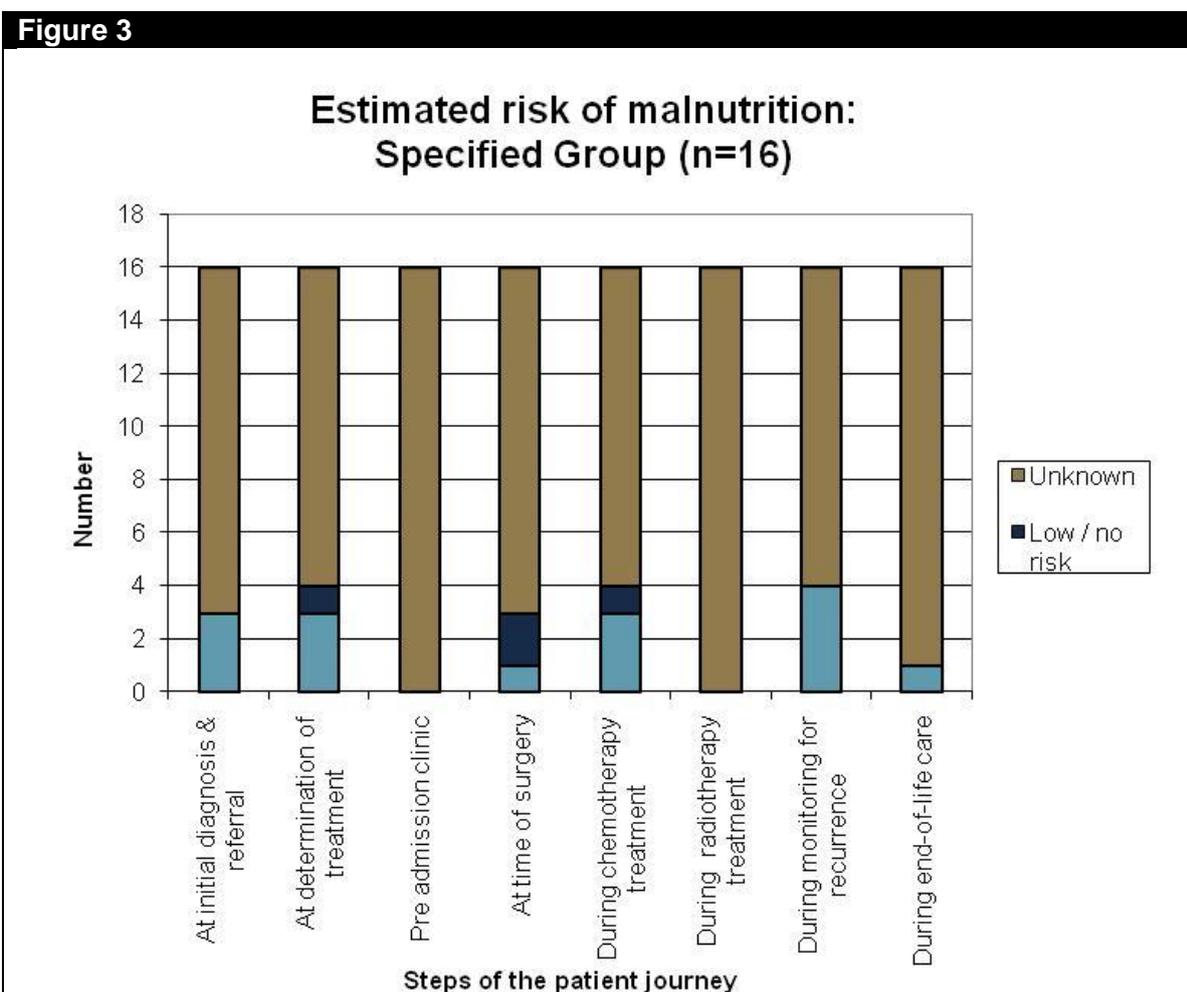


Figure 3, shows that the documented risk of malnutrition was spread across the care continuum. It is important to note that fourteen of the sixteen patients in the specified group were found to have an estimated risk of malnutrition at two or more. Five of these patients had an estimated risk of four or more.

Nine patients had been screened using predominantly the dietetic estimate or MST prior to time of surgery, and including the time of surgery. Six patients had not been screened using MST or the dietetic estimate until post operative or later stage in the cancer journey. Of these six patients, the auditors rated five as being at risk of malnutrition at the time they

came in contact with the dietitian. At the stages of pre-admission and radiotherapy, risk of malnutrition was unknown.

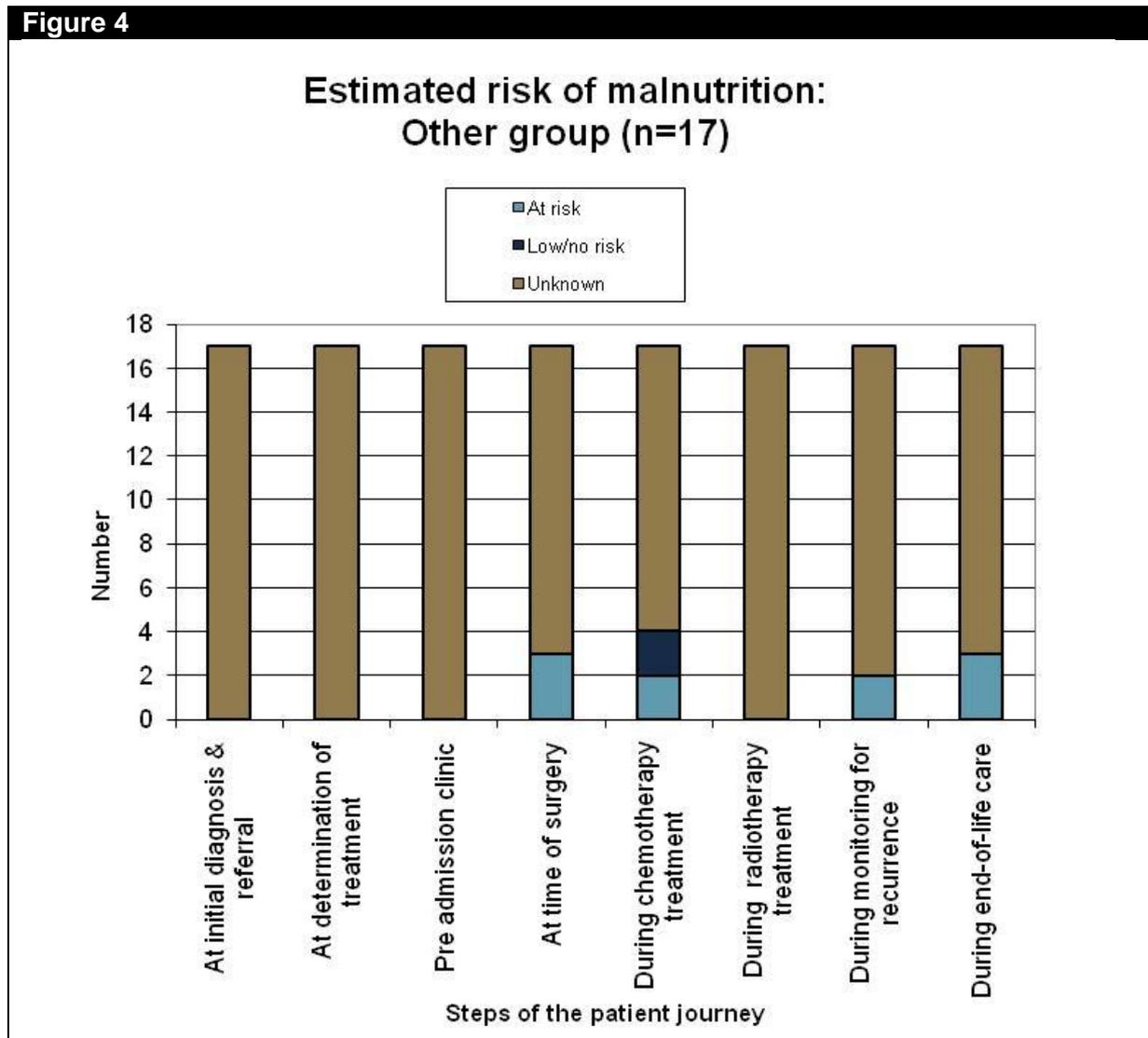


Figure 4 illustrates that again. In the control group of patients there was little information contained in the medical records regarding their nutritional status, with an increased number of files estimated as ‘unknown’ as compared with the specified group. There was an absence of information regarding nutritional status in the majority of records prior to the time of surgery.

During chemotherapy treatment, two records contained documentation of the nutritional status of patients who were at risk and five records contained documentation of no or low risk which indicates some awareness of the importance of screening as a tool for early detection of risk of malnutrition. Four records were screened using the MST tool in chemotherapy.

Four of the control group records contained a MST in at least one stage of the treatment pathway. Twelve of the 13 records contained sufficient information to allow estimation of nutritional status at one or more stages of treatment. Of these 12 records, half were rated as being “at risk” of malnutrition using the estimated MST.

## Discussion

The medical record audit only reviewed the risk of malnutrition and the utilisation of dietetic services during the steps of the treatment pathway described in the UGI PMFs<sup>78</sup>.

Data was not collected regarding the specific diagnosis of cancer, other disease or treatment-related problems which could potentially be alleviated through dietetic intervention. Such symptoms include taste changes, nausea, vomiting, swallowing difficulties, dysphagia and texture changes.

The reliability of the data collected via the audit was found to have minor limitations for completeness of nutrition screening and dietetic activity in a small number of patients that received aspects of care in other health services or where care was undertaken by private cancer care providers. Despite the limitations identified, this did not compromise the audit outcomes. The findings of the audit provided a clear picture of the processes for and the nutritional screening and dietetic activity that occurs for patients with UGI cancer at Peninsula Health across the steps of the patient journey.

In the specified group, the use of a formal screening tool was found to be minimal at Peninsula Health. Where MST or the modified MST formal screening tool had been undertaken, in the specified group (n= 3) all three patients had subsequently been assessed by the dietetic service. In the control group screening using a tool was performed on six patients; three of the six were rated at risk, the other three at no risk. In two of the three at risk patients, dietetic intervention occurred.

Despite low formal screening numbers identified in the study there was not a predictive factor of the overall dietetic intervention for the specified patient group. In fact the dietetic intervention at Peninsula Health in the specified group was comprehensive and was readdressed over intervals of the cancer care journey as recommended by the PMFs<sup>78</sup>. In the specified group of patients, the most likely pathway to result in dietetic intervention was via the dietetic pre-emptive screening system occurring at the time of the allied health meeting for new patients being admitted to the surgical ward, normally at the time of initial diagnosis or determination of treatment. All sixteen patients received at least one initial assessment and review by the dietitian and some multiple initial assessments and reviews over the continuum of care as they represented for different episodes over the course of their care.

The dietetic pre-emptive screening system that occurs on the inpatient ward and more recently in the pre-admission clinic whereby the UGI dietitian identifies patients with high risk UGI cancer has to date enabled early dietetic intervention and or verbal referral by nursing staff. This mechanism for referral may account for the low screening activity from nursing staff on the ward, not supported by a documented modified MST in the nursing admission process.

Whilst this screening system undertaken by the dietitian has been shown to effectively flag the UGI patients at high risk, enabling early intervention, it is worthwhile exploring the potential risks and benefits to the dietetics service to enable manageability and sustainability into the future, specifically. These may include:

- the current burden on the dietetic service to undertake this pre-emptive screening
- possible limitations in the current dietetic pre-emptive screening model, given that it is person dependant, based on verbal handover/ referral and not always supported by nursing documentation in the medical records

- underutilising nursing expertise to assess the supportive care needs in patients with cancer
- potential for patients with UGI cancer to be over serviced or overlooked in the current model due to ad hoc/verbal based referral processes in place.

In the specified group, of the five patients that were treated in the Oncology Day Unit (ODU) only two received a formal MST screening. The three patients that did not undergo screening were rated with the MST estimate to be at risk with a score of 3 or greater. Potential exists for greater awareness of malnutrition risk and more thorough screening to occur in the Oncology Day Unit.

In late 2010, the ODU participated in a supportive care screening pilot to screen patients with cancer for their supportive care needs; this pilot was initiated and supported by SMICS over a six month period. The supportive care screening tool encompasses nutrition needs and other supportive care aspects for the patient with cancer and is based on self identified needs. The pilot was found to be a valuable predictor of supportive care needs in this patient group and a reliable source for referral to supportive care providers. There is agreement between ODU and SMICS to roll out a modified version of the Peninsula Health supportive care screening tool for all patients that are treated in the ODU in the future. Discussions between SMICS and the Nurse Manager on the inpatient surgical wards have commenced to explore the introduction of the supportive care screening tool as part of the nursing admission process. SMICS will seek to explore opportunities for supportive care screening introduction through Radiation Oncology Victoria for patients with cancer that are receiving radiotherapy services in the local area. It is anticipated that the increased awareness of supportive care issues will:

- be valued by patients
- improve rate of referrals to dietitian services for those found to be at risk of malnutrition or malnourished and
- improve patients' experience of their chemotherapy treatment.

Examination of the information contained in the medical records pertaining to the nutritional status of the patients indicate that there is a higher level of awareness of the risk of malnutrition in the specified cases than for those of UGI/HPB cancer patients as a whole. Commonly, no information regarding nutritional status was documented in the medical records of the control group of patients until there was some evidence of either malnutrition or risk of malnutrition.

Best practice cancer care for this group of UGI/HPB cancer patients in the specified group was compared to the PMF guidelines for the predominant UGI cancers of oesophagogastric and pancreatic cancers, that identifies the importance of dietetic referral for these cancer patients as specified in the introduction. The results indicated that seven of the 14 patients with a diagnosis of oesophagogastric cancer were referred pre-operatively, two patients in this group post-operatively and four of the 14 reviewed pre and post-operatively. This demonstrates an understanding within the treating teams of the high risks of this patient group and a current multidisciplinary approach to the care of these patients. Those patients with pancreatic cancer in the specified group of which only two were found to have received dietetic referral and assessment at time of initial diagnosis, aligning with the PMF recommendation for referral.

The findings of the situational analysis indicate that the dietetic intervention for patients with UGI cancer was focused to the patient group, the service was comprehensive and revisited at intervals across the patient care journey as recommended by the PMFs<sup>78</sup>. The UGI team members' initial anecdotal report when asked to provide comment on the dietetic service was consistent with the dietetic service provided and reflected in the findings of the situational analysis.

***["the dietitians at Peninsula Health provide a really good focused service here across the board", Clinical Director of Surgery, Peninsula Health.]***

The situational analysis highlighted low numbers of formal screening evidence in the medical records and observed limited evidence of the modified MST completed in the nursing admission process for patients entering the surgical inpatient wards. Documented evidence to support the need for dietetic intervention will become increasingly important to justify a business case for service improvements to the current dietetic services. Particularly in the light of a potential increase of demand on dietetic service provision based on projected increase in cancer incidence noted by the UGI team members and supported by evidence in SMICS' Service Plan undertaken in 2009. The Service Plan indicated the Mornington Peninsula region was forecasted to experience the highest percent (54%) increase in demand from 2006- 2016 for cancer-related admissions<sup>11</sup>.

## Conclusion and opportunities for improvement

There is potential to improve UGI/HPB cancer patients' experience of their cancer treatment and their quality of life through early dietetic intervention across all stages of the treatment pathway. Prevention of nutritional deterioration has also been shown to improve patients' tolerance to treatment.

A recent survey of current nutritional management of patients undergoing major UGI surgery in Australia reviewed the dietetic intervention of forty-two hospitals across Australia and concluded that *'in order to see a more effective dietetic service, there needs to be a shift in service provision from an acute hospital focus to include stronger outpatient support. This would require a greater emphasis on the multidisciplinary team, financial support from hospital management, and clear national or international nutrition guidelines on the management of UGI cancer patients'*<sup>12</sup>. This framework may provide a starting point to aim for a more patient focussed dietetic service in the care of UGI/HPB cancer patients.

Exploring options to improve the overall efficiency of the dietetic service, whilst making full potential of existing resources such as nursing staff to provide a responsive and sustainable service to meet the needs of the patients with UGI cancer and other patient groups is warranted based on the findings of the situational analysis.

Opportunities for improvement are outlined in the following table.

<b>Number</b>	<b>Opportunities for improvement</b>	<b>SMICS Strategy</b>
<b>1</b>	The provision of nutritional information to all UGI/HPB cancer patients, including information regarding when to seek specialist dietetic advice	Information
<b>2</b>	The provision of information to UGI MDT members regarding how to access specialist dietetic services for non-admitted patients identified as malnourished or at risk of malnutrition	Information
<b>3</b>	Up-skilling nursing staff and other MDT health professionals involved in the care patients with UGI cancer about the importance of nutritional screening and triggers necessitating specialist dietetic intervention, particularly to the oncology units and inpatient wards	Professional development
<b>4</b>	Implement documentation processes to support and provide a baseline level of evidence of the need for dietetic intervention. The data will ensure dietetic intervention is appropriate and timely to the needs of the patient, and validate dietetic service demand	Data system
<b>5</b>	Establish systems to ensure patients are flagged for high risk and referred for early dietetic intervention ideally pre-operatively	Data system
<b>6</b>	The identification and implementation of a nutrition screening tool/ supportive cancer care screening tool suitable for use by UGI cancer clinicians in their rooms and the promotion of screening at all consultations	Supportive care
<b>7</b>	Implementation of routine nutritional screening/supportive care screening tool for patients with UGI cancer on admission that can provide a consistent approach to identifying patient malnutrition risk	Supportive care
<b>8</b>	The incorporation of dietitian review as part of the routine pre-admission assessment of patients undergoing one of the specified procedures	System/ service
<b>9</b>	Promote and establish a multidisciplinary approach to prioritise nutritional screening and high risk patients for dietetic referral care based on a generic model of supportive cancer care, adapted from Fitch <sup>7</sup>	MDT
<b>10</b>	The development of models of care/referral pathway guidelines to support dietetic intervention based on best practice <sup>7</sup>	System/ service
<b>11</b>	Explore other existing models of dietetic service provision at a local, national and international level	System/ service
<b>12</b>	Funding to support dietetic intervention to radiotherapy patients	Funding
<b>13</b>	The establishment of a targeted triage system and dietetic outpatient service allowing for automatic referral of UGI patients with cancer that are identified as malnourished or at risk of malnutrition to facilitate timely access to dietetic services; this may include referral of selected patients to a community based dietitian for follow up.	System/ service

## Next steps

SMICS will circulate this paper to the key stakeholders involved in this quality improvement activity for review and to seek input as to how the group would like to proceed with the report findings and potential opportunities for improvement. The stakeholder group includes:

- Louise Buckley, Senior Dietitian, Peninsula Health
- Karen Edis, Dietetic Manager, Peninsula Health
- Bob Spychal, Clinical Director of Surgery, Peninsula Health and
- Romaine Holmes, Medical Director of Cancer Services, Peninsula Health.

SMICS will present the outcomes and recommendations of the situational analysis to the SMICS UGI tumour group and SMICS Governance Committee for review and discussion to consider the opportunities for improvement in line with the SMICS strategic plan. A meeting of the identified stakeholders will be convened based on the direction agreed on by the key stakeholders and input from the SMICS Tumour Group and SMICS Governance Committee.

## Appendix: Medical Record Audit Tool

Criteria	Patient Measure	1	2	3	4	5	6	7	8	9	10
<b>Documented evidence the need for dietitian support has been identified</b>	<b>0=No, 1=Yes</b>										
At initial diagnosis & referral	0=No, 1=Yes										
At determination of treatment	0=No, 1=Yes										
Preoperatively	0=No, 1=Yes										
Immediate post op	0=No, 1=Yes										
During chemotherapy treatment	0=No, 1=Yes										
During radiotherapy treatment	0=No, 1=Yes										
During monitoring for recurrence	0=No, 1=Yes										
During end-of-life care	0=No, 1=Yes										
<b>Documented evidence of referral to dietitian</b>	<b>0=No, 1=Yes</b>										
<b>By who?</b>	<b>Text</b>										
At initial diagnosis & referral	0=No, 1=Yes										
At determination of treatment	0=No, 1=Yes										
Preoperatively	0=No, 1=Yes										
Immediate post op	0=No, 1=Yes										
During chemotherapy treatment	0=No, 1=Yes										
During radiotherapy treatment	0=No, 1=Yes										
During monitoring for recurrence	0=No, 1=Yes										
During end-of-life care	0=No, 1=Yes										
<b>Documented evidence of full dietitian assessment</b>	<b>0=No, 1=Yes</b>										
<b>Tool used?</b>											
At initial diagnosis & referral	0=No, 1=Yes										
At determination of treatment	0=No, 1=Yes										
Preoperatively	0=No, 1=Yes										
Immediate post op	0=No, 1=Yes										
During chemotherapy treatment	0=No, 1=Yes										
During radiotherapy treatment	0=No, 1=Yes										
During monitoring for recurrence	0=No, 1=Yes										
During end-of-life care	0=No, 1=Yes										
<b>Documented evidence of dietitian review</b>	<b>0=No, 1=Yes</b>										
At initial diagnosis & referral	0=No, 1=Yes										
At determination of treatment	0=No, 1=Yes										
Preoperatively	0=No, 1=Yes										
Immediate post op	0=No, 1=Yes										
During chemotherapy treatment	0=No, 1=Yes										
During radiotherapy treatment	0=No, 1=Yes										
During monitoring for recurrence	0=No, 1=Yes										
During end-of-life care	0=No, 1=Yes										
<b>Documented evidence of referral between discreet dietetics services</b>	<b>0=No, 1=Yes</b>										
At initial diagnosis & referral	0=No, 1=Yes										
At determination of treatment	0=No, 1=Yes										
Preoperatively	0=No, 1=Yes										
Immediate post op	0=No, 1=Yes										
During chemotherapy treatment	0=No, 1=Yes										
During radiotherapy treatment	0=No, 1=Yes										
During monitoring for recurrence	0=No, 1=Yes										
During end-of-life care	0=No, 1=Yes										
<b>Estimated Nutrition Screening Tool score *</b>											
At initial diagnosis & referral	0 - 5, or 9										
At determination of treatment	0 - 5, or 9										
Preoperatively	0 - 5, or 9										
Immediate post op	0 - 5, or 9										
During chemotherapy treatment	0 - 5, or 9										
During radiotherapy treatment	0 - 5, or 9										
During monitoring for recurrence	0 - 5, or 9										
During end-of-life care	0 - 5, or 9										

Estimated Nutrition Screening Tool Score	
Insufficient information in medical record to estimate	9
Has the pt lost weight without trying?	No = 0 Unsure = 2
If yes, how much weight?	1-5kg = 1 6-10kg = 2 11-15kg = 3 >15kg = 4
Decreased appetite?	No = 0 Yes = 1

## Abbreviations

DHS	Department of Human Services
GP	General Practitioner
MDT	Multidisciplinary Team
MMC	Monash Medical Centre
MOW	Medical Oncology Ward
MST	Malnutrition Screening Tool
PMF	Patient Management Framework
SMICS	Southern Melbourne Integrated Cancer Service
UGI/HPB	Upper gastro-intestinal / Hepato-pancreato-biliary
VAED	Victorian Admitted Episode Data

## References

- 
- <sup>1</sup> Department of Human Services (DHS), 2008, *Victoria's Cancer Action Plan 2008-2011*, Metropolitan Health and Aged Care Services, Victorian Government, Melbourne.
- <sup>2</sup> National Institute for Clinical Excellence (NICE), 2004, *Improving supportive care and palliative care for adults with cancer*, London, p 17.
- <sup>3</sup> Department of Human Services (DHS), 2009, *Providing optimal cancer care: Supportive care policy for Victoria*, Metropolitan Health and Aged Care Services, Victorian Government, Melbourne.
- <sup>4</sup> Ferguson ML, Bauer J, Gallagher B, Capra S, Christie DR, Mason BR. 1999, Validation of a malnutrition screening tool for patients receiving radiotherapy. *Australasian Radiology*, 43:325-7.
- <sup>5</sup> Isabel M, Correia TD, Waitberg DL, June 2009, The impact of malnutrition on morbidity mortality, length of hospital stay and costs evaluated through a multivariate model analysis, *Cancer Vol 22*, (3): 235-239.
- <sup>6</sup> Andreyev HJ, Norman AR, Oates J, Cunningham D, 1998. *Why do patients with weight loss have a worse outcome when undergoing chemotherapy for gastrointestinal malignancies?* European Journal of Cancer, Vol 34, No. 4, 503-509.
- <sup>7</sup> Department of Human Services, 2006, *Patient Management Framework, Upper gastrointestinal tumour stream: pancreatic cancer*, Victorian Government, Melbourne.
- <sup>8</sup> Department of Human Services, 2006, *Patient Management Framework, Upper gastrointestinal tumour stream: oesophagogastric cancer*, Victorian Government, Melbourne.
- <sup>9</sup> Peninsula Health, Dietetics department (2009). *An audit of the use of the MST screening tool*. (Unpublished report).
- <sup>10</sup> Ferguson M, Capra S, Bauer J, Banks M (1999) *Development of valid and reliable malnutrition screening tool for adult acute hospital patients*. Nutrition 15: 458-463.
- <sup>11</sup> Capital Foresight Pty and Cordyline Consulting Pty, 2009. *SMICS: A Service Plan*.
- <sup>12</sup> Carey S. 2010. *Nutritional Management of patients undergoing major upper gastrointestinal surgery: A survey of current practice in Australia*. Nutrition and Dietetics, 67: 219-223.