

THE ASSOCIATION OF COMMUNITY CANCER CENTERS

Cancer Nutrition Services

A Practical Guide
for Cancer Programs



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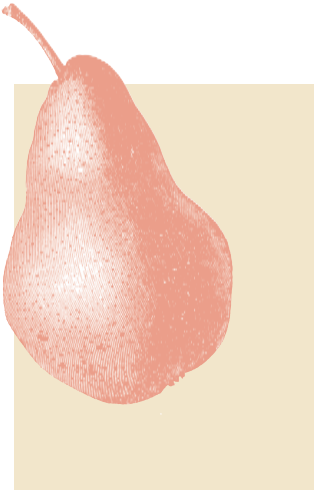
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Introduction

Shari Oakland Schulze, RD, CSO



Shari Oakland Schulze, RD, CSO, is a member of the Advisory Committee for ACCC's Establishing and Improving Cancer Nutrition Programs in the Community Cancer Setting education project. She is oncology dietitian with Exempla St. Joseph Comprehensive Cancer Center in Denver, Colo.

Association of Community Cancer Centers (ACCC) members have recently identified that one of the top resources that providers seek is help with developing and maintaining a nutrition services program. ACCC's education project, *Establishing and Improving Cancer Nutrition Programs in the Community Cancer Setting*, aims to help meet this need. Project goals include:

- Updating the nutrition services section within ACCC's *Cancer Program Guidelines*
- Improving understanding of how proper nutrition supports improved cancer patient care
- Providing practical examples, replicable tools, and resources for building or enhancing a nutrition program within a community cancer program.

This supplement pulls together practical strategies, models of nutrition programs underway at ACCC member programs, and tools for developing a successful nutrition program. To start, we've included the revised Nutrition Services section from ACCC's *Cancer Program Guidelines*. These revisions offer a general framework for what an oncology nutrition program should entail. The rationale and characteristics of each nutrition services guideline provide details covering such topics as recommended qualifications and education of the provider of nutrition services and how nutrition care is to be incorporated into a comprehensive cancer program.

To provide some historical perspective and context, we've included an overview article that describes, in brief, the evolution of cancer nutrition within the ever-changing cancer care landscape.

To understand how nutrition programs have been successfully developed in the community setting, this supplement features articles that describe a variety of models for providing nutrition services at ACCC-member programs. While these nutrition programs vary in scope and size, all contain the essentials of a sound process, including:

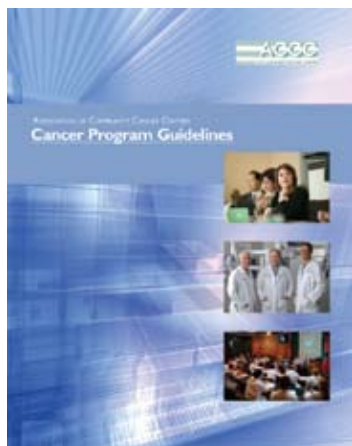
- Nutrition screening to identify patients at nutrition risk
- Patient-specific nutrition assessment
- Intervention and education throughout the cancer treatment process.

Many provide a structure to address prevention strategies, as well as survivorship plans. Included are nutrition-related tools, education materials, and other resources to help you get started.

ACCC's *Establishing and Improving Cancer Nutrition Programs in the Community Cancer Setting* education project includes podcasts on "Strategies for the Nutrition & Supportive Care Needs of Patients with Head and Neck Cancers" and "Nutrition Symptom Management," and webinars on "Oncology Nutrition: What's the Point?," "Developing a Culture of Nutrition at a Community Cancer Center," and "Optimizing Enteral Nutrition for Oncology Patients." These presentations, and more, will be available on the project's dedicated section on ACCC's website at www.accc-cancer.org/nutrition.

We believe that the information included in this supplement will be helpful whether your program seeks to establish nutrition services or to expand on existing offerings. Ultimately, our goal is for cancer centers to establish a proactive approach to addressing nutrition needs throughout the continuum of care from prevention to diagnosis, treatment, and survivorship. By incorporating a nutrition program, we can improve patient outcomes and improve the quality of life of all those who seek care in our cancer programs.

Association of Community Cancer Centers Cancer Program Guidelines



SECTION 8: Nutrition Services

Guideline I

A nutrition professional is available to work with patients and their families, especially patients identified at risk for having nutritional problems or special needs.

Rationale

Nutritional status can be adversely affected by the disease process, including the symptoms and side effects of cancer and its treatment (e.g., chemotherapy, surgery, immunotherapy, and radiation therapy). The nutrition professional works with patients, families and/or caregivers, physicians, and other members of the oncology multidisciplinary team to help maintain optimal nutritional status throughout the continuum of care (prevention, treatment, survivorship, palliative care, and hospice).

Characteristics

- A. The nutrition professional is a registered dietitian and maintains registration through the Commission on Dietetic Registration (CDR). Certification in oncology nutrition as a Certified Specialist in Oncology Nutrition (CSO) through the CDR is recommended.
- B. The nutrition professional has education and experience in the specialized nutritional needs of patients with cancer, side-effect management, and in minimizing the risk of cancer through nutritional counseling and education.
- C. Staffing of nutrition professionals is adequate to meet the needs of cancer patients and their families in a timely manner.
- D. The nutrition professional provides education and guidance to physicians and other members of the oncology team to assure appropriate screening, assessment, and referral of patients.
- E. The nutrition professional participates in oncology multidisciplinary team conferences and the institutional Cancer Committee.

- F. Oncology nutrition standards for all aspects of patient care and professional practice are guided by the Academy of Nutrition and Dietetics* Standards of Practice and Professional Performance for Registered Dietitians (Generalist, Specialty, and Advanced) in Oncology Nutrition Care.
- G. A plan is in place regarding ongoing professional development for the nutrition professional, including regularly scheduled in-service and continuing education programs through national and regional professional organizations (e.g., the Oncology Nutrition Dietetic Practice Group of the Academy of Nutrition and Dietetics) and community-sponsored programs specific to oncology nutrition.

**Effective January 2012, Academy of Nutrition and Dietetics (AND) became the new name for the American Dietetic Association.*

Guideline II

The nutrition professional with the patient, family, and the oncology team manages issues involving the patient's nutrition and hydration status through appropriate nutrition screening, assessment, and intervention across the care continuum.

Rationale

The nutritional needs of patients are unique to each individual.

Characteristics

As part of the nutrition care process, the nutrition professional:

- A. Develops and implements a screening program to identify and prioritize patients at risk for malnutrition.
- B. Formulates an individualized nutrition care plan based on assessment findings.
- C. Provides anticipatory guidance, identifying common nutritional problems the patient may encounter during the course of his/her disease and treatment.
- D. Addresses side-effect management, complementary and alternative medicine (CAM) issues (e.g., herbs, supplements, vitamins, and minerals)

in the context of evidence-based nutrition care and services across the care continuum (prevention, treatment, survivorship, palliative care, and hospice).

- E. Monitors the patient's progress and provides follow-up nutrition care, as needed.
- F. Assesses the patient's and/or family's ability to understand and comply with nutritional education and instruction and modifies interventions appropriately.
- G. Collaborates in the patient's care with his/her physician(s) and other members of the oncology team.
- H. Evaluates nutrition care outcome indicators.

Guideline III

The nutrition professional serves as a resource and provides nutrition and diet information about reducing cancer risk and cancer recurrence risk through educational program materials and services to the community.

Rationale

Lifestyle interventions that are associated with reduced cancer risk also address chronic disease as a whole, improving the health and knowledge base of the community that the cancer center serves.

Characteristics

- A. The nutrition professional provides dietary and lifestyle guidance associated with reduced cancer risk through the delivery of educational materials, programs, and services to the community.
- B. The nutrition professional works with health professionals and educators to provide evidence-based information about lowering cancer risk, both for primary prevention and to prevent recurrence and secondary cancers in survivors.

Guideline IV

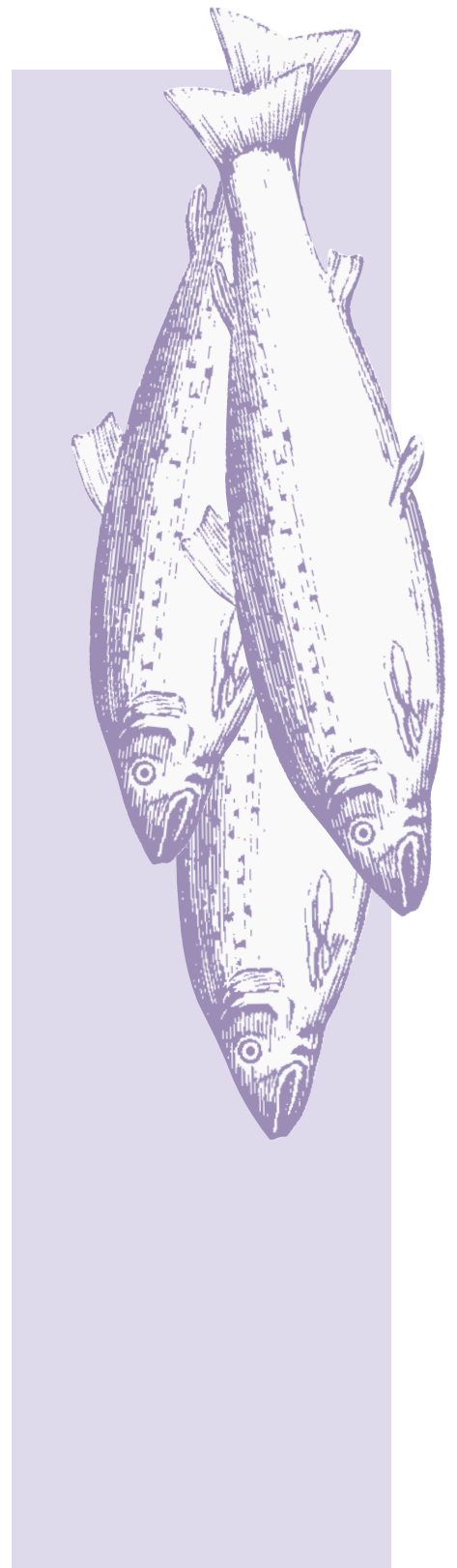
The nutrition professional manages nutrition and diet-related needs specific to each patient's individualized survivorship plan.

References

Please note: While every attempt has been made to ensure the accuracy of the publications, addresses, phone numbers, and websites, ACCC cannot ensure that this information has not changed. Web addresses, in particular, change frequently.

If you find that a web address has changed, try to locate the publication name through an online search engine.

1. National Comprehensive Cancer Network. NCCN Practice Guidelines in Oncology. www.nccn.org Phone: 888.909.6226 (patients); 215.690.0300 (cancer care professionals).
2. Robien K, et al. American Dietetic Association: revised standards of practice and standards of professional performance for registered dietitians (generalist, specialty, and advanced) in oncology nutrition care. *J Am Diet Assoc.* 2010; 110:310-317.
3. American Dietetic Association/Commission on Dietetic Registration. Code of ethics for the profession of dietetics and process for consideration of ethics issues. *J Am Diet Assoc.* 2009; 109:1461-1467.
4. American Dietetic Association. Evidence Analysis Library/Oncology Toolkit: Oncology Evidence-Based Nutrition Practice Guideline. Chicago, IL: American Dietetic Association, 2010.
5. American Dietetic Association. International Dietetics & Nutrition Terminology (IDNT) Reference Manual: Standardized Language for the Nutrition Care Process, 3rd edition. Chicago, IL: American Dietetic Association, 2011.



The Evolution of Cancer Nutrition & Its Role in Today's Community Cancer Programs

by Barbara L. Grant, MS, RD, CSO, LD

Today there is a wealth of evidence substantiating the importance of nutrition throughout the continuum of cancer care—from prevention to treatment, rehabilitation, survivorship, and even its relevance in discussions dealing with end-of-life care.

The presence of cancer and the impact of cancer treatment can have a profound effect on nutritional status. This article will:

- Provide a brief overview of the evolution of nutrition as an essential component of care for persons diagnosed with cancer.
- Discuss the role of registered dietitians (RDs) in today's community cancer centers.
- Describe how through proactive nutrition assessment and counseling, RDs are integral to the multidisciplinary team's efforts to help minimize the side effects of cancer treatment and improve the patient's well-being and quality of life.
- Present a brief look at some of the challenges and opportunities cancer centers face in providing nutritional services for their patients.

Feed a Person, Feed their Cancer?

Sadly, there was a time not too long ago when providing nutritional care to persons diagnosed with cancer was believed by some to promote and stimulate cancer growth.¹ Others assumed that nutrition and diet simply

didn't matter. A number of these beliefs were based, in part, on the results of early research with animals. Even in the 1990s, investigators observed in cell culture and animal studies that by withholding nutrition a tumor's growth and progression of cancer cells could be slowed. Conversely, other studies in this same decade showed that without adequate nutrition, malnutrition and weight loss in persons with cancer was a leading cause of cancer-related mortality.² A seminal study published by DeWys and colleagues illustrates this point.³ DeWys' study looked at the prevalence and the prognostic effect of weight loss prior to and after cancer treatment and was comprised of over 3,000 cancer patients enrolled in 12 different chemotherapy trials of the Eastern Cooperative Oncology Group (ECOG). The results revealed that study participants experiencing the greatest weight loss had lower median survival time when compared to those without weight loss. For many oncology clinicians (i.e., physicians, nurses, pharmacists, and registered dietitians), these findings marked a pivotal shift in thinking and helped to foster the inclusion of proactive nutrition screening and assessment, nutritional counseling, and nutrition support therapy (e.g., total parenteral nutrition and enteral nutri-

tion) into the care of persons with cancer.

To help guide nutritional care for patients with cancer, registered dietitians and researchers with the Academy of Nutrition and Dietetics (AND) (formerly the American Dietetic Association) Evidence Analysis Library published and continue to update the *Oncology Evidence-Based Nutrition Practice Guidelines*.⁴ This professional resource provides clinicians with current evidence-based recommendations for managing symptoms, minimizing weight changes, and maintaining optimal nutrition status during and after cancer treatment. Since 1986, clinicians at the American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) have been revising clinical guidelines for nutritional support therapy on an ongoing basis. In 2010, A.S.P.E.N. released its *Clinical Guidelines: Nutrition Support Therapy During Adult Anticancer Treatment and in Hematopoietic Cell Transplantation* to provide clinicians with evidence-based recommendations for providing nutritional support therapy in the cancer care setting.⁵

Proactive Nutrition Assessment, Screening, and Counseling

The specific nutrition needs of oncology patients are as varied as their type and stage of cancer, treatment regimens, and factors such as co-morbid diseases and overall health. Nutritional status is also affected by personal preferences, attitudes, and cultural practices pertaining to food. Other nutrition-related influences include family and patient dynamics, as well as psychosocial and socioeconomic concerns.

In the cancer care setting, the nutrition care process needs to begin with early intervention measures to screen and assess for malnutrition and for the presence of cancer- and treatment-related side effects impacting nutrition. The Joint Commission requires that nutrition screenings must occur within 24 hours in the inpatient setting; on admission or within 14 days of admission to a long-term care facility; and during the initial nursing visit in the home care and hospice setting.^{6,7}

Over the past two decades, the majority of oncology care has shifted

Since its inception in 1990, the Oncology Nutrition Dietetic Practice Group (ON DPG) of the Academy of Nutrition and Dietetics offers RDs working in oncology opportunities for professional growth, development, and networking. Membership information is available at: <http://www.oncologynutrition.org/>.



from the inpatient hospital setting to the outpatient setting. As cancer care has largely migrated to the outpatient setting, having an institution-specific nutrition screening and assessment procedure in place is essential for the early identification of nutritional risk. Today, in many community cancer centers, nutrition screening and assessment is a multidisciplinary process involving not only registered dietitians, but also nurses, clinic assistants, medical providers, and even the patients themselves with use of such tools as the Patient-Generated Subjective Global Assessment (the PG-SGA) (see page 31), the Mini Nutrition Assessment, or the Malnutrition Screening Tool.⁸

An example of an easy-to-use outpatient nutrition screening tool is the 7th Vital Sign, which incorporates two simple assessments (unintentional weight loss and decrease in appetite) to identify cancer patients at nutritional risk.⁹ The six other vital signs commonly obtained in patient care assessments include blood pressure, pulse, respirations, temperature, oxygenation, and pain—the seventh sign is malnutrition.

In 2008 the Commission on Dietetic Registration (CDR) began administering and granting the CSO credential for RDs specializing in oncology nutrition and working in the cancer care setting. CDR defines oncology nutrition practice as:

RDs working directly with individuals at risk for, or diagnosed with, any type of malignancy or pre-malignant condition, in a variety of settings (e.g. hospitals, clinics, cancer centers, hospices, public health) or indirectly through roles in management, education, industry, research practice linked specifically to oncology nutrition.

For more information on the CSO credential visit the CDR website at: <http://www.cdrnet.org/certifications/spec/oncology.cfm>.

This new screening tool was developed and validated by a team of registered dietitians at the Mountain States Tumor Institute in Boise, Idaho. (See page 11 for a description of how Mountain States Tumor Institute implemented and expanded its nutrition program.)

The benefit of medical nutrition therapy and nutrition counseling provided by registered dietitians in the cancer care setting is highlighted in

the evidence-based findings of the Academy of Nutrition and Dietetics *Oncology Toolkit*. The *Toolkit* contains the *Oncology Evidence-Based Nutrition Practice Guidelines* from the Evidence Analysis Library, as well as resources such as medical nutrition therapy summary recommendations for various cancer types, progress note documentation, outcome monitoring forms, and patient and professional resources lists.¹⁰

The Oncology Nursing Society's *Putting Evidence into Practice: Evidence-Based Interventions to Prevent and Manage Anorexia* also recommends the use of individualized nutrition counseling as an effective intervention for persons with cancer- and cancer-treatment-related involuntary loss of appetite.¹¹ A prospective randomized controlled trial published in 2005 found that individualized nutritional counseling provided by RDs improved nutritional intake, body weight, and quality of life, and helped to reduce the incidence of anorexia in colorectal cancer patients undergoing radiation therapy.¹² A systematic review of literature undertaken in 2002 revealed that oral nutritional intake was improved in persons with cancer experiencing anorexia and cachexia as a result of individualized nutritional counseling, as well as with the use of commercial liquid meal replacements or supplements.¹³



Barbara L. Grant, MS, RD, CSO, LD, (on R) talks with a patient.

Nutrition Services Cancer Program Guidelines and Standards

ACCC Nutrition Services Guidelines

On pages 4-5 of this supplement you will find the newly updated Nutrition Services section of ACCC's *Cancer Program Guidelines*.¹⁴ These guidelines outline suggestions for the provision of optimal nutritional care as part of a comprehensive cancer program.

ACCC's updated nutrition guidelines

tutions. The new *Cancer Program Standards 2012: Ensuring Patient-Centered Care* outline the importance of nutrition across the continuum of cancer care stating¹⁵:

Nutrition services are essential components of comprehensive cancer care and patient rehabilitation. These services provide safe and effective nutrition care across the cancer continuum (prevention, treatment, and survivorship) and are essential to promoting quality of life. An adequate

time, along with challenges come opportunities for helping to improve quality of life and nutritional health for those touched by cancer.

Challenge: Shift in care and cost to the outpatient setting.

As mentioned above, the setting of care for oncology services has undergone a shift from most services being provided in the inpatient setting to most services being provided in the outpatient setting. While this shift has been taking place, the cost of cancer care has been escalating. Researchers at the Centers for Disease Control estimate the cost of cancer care has doubled in the past 20 years to more than \$48 billion annually.¹⁶ These findings indicate private insurance pays for 50 percent of the cost, Medicare coverage accounts for 34 percent, Medicaid payment equals about 3 percent, and other public programs pay for 5 percent. The study also reported that spending for medical care has shifted away from the inpatient cancer setting to outpatient treatment settings.

Other factors impacting the future of healthcare—and oncology care—include:

- Increasingly diverse population. The U.S. Census Bureau forecasts by 2050 minority populations will outnumber non-Hispanic whites due to a combination of population growth and immigration.
- Growing population of overweight and obese individuals. The Brookings Institution estimates that obesity costs the U.S. economy over \$215 billion a year due to premature death, medical costs, and lower and lost productivity.
- Increasingly costly and complex new and novel chemotherapeutic, biotherapy, and antiangiogenesis agents, and specialized radiation therapy planning and treatment.¹⁷

Challenge and opportunity: Increasing numbers of cancer survivors and a growing aging population.

In 2011 it was estimated that nearly 1.6 million people in the United States

Although some community cancer programs may not employ RDs or have access to the services they provide, the ACCC Nutrition Advisory Panel working to update the ACCC *Cancer Program Guidelines* believed that it was important to establish what comprises “best practice” nutritional care. Suggestions for finding RDs working in oncology nutrition include consulting the Academy of Nutrition and Dietetics website at: www.eatright.org. Use the “Find a Registered Dietitian” feature and put in “oncology nutrition” in the expertise/specialty tab. Or, contact AND by phone at 800.877.1600 x5000 to locate RDs in specific geographical areas. ACCC's *Establishing and Improving Cancer Nutrition Programs in the Community Cancer Setting* education project includes a webinar covering strategies for providing nutrition services in community-based cancer programs.

define the nutrition professional as a registered dietitian who maintains registration through the Commission on Dietetic Registration (CDR) and recommend that RDs working with oncology patients obtain certification in oncology nutrition as a Certified Specialist in Oncology Nutrition (CSO) through the Commission on Dietetic Registration. (See box on page 7 for more.)

New CoC Standards

The Oncology Nutrition Dietetic Practice Group of the Academy of Nutrition and Dietetics has been a member organization of the American College of Surgeons (ACoS) Commission on Cancer (CoC) since 1995. Last year, in collaboration with representatives of the CoC's Standards Committee, the ON DPG, and the Quality Assurance department of the Academy of Nutrition and Dietetics, the CoC established new cancer program standards for nutrition services in its accredited insti-

spectrum of services is available (screening and referral for nutrition-related problems, comprehensive nutrition assessment, nutrition counseling, and education) either on site or by referral, with a procedure in place to ensure patient awareness and access to services.

Beginning in 2012, a registered dietitian is now a required member of the Cancer Committee for Integrated Network Cancer Programs and is strongly recommended, but not required, for all other types of CoC-accredited cancer programs.¹⁵

Challenges in Providing Nutrition Services

Cancer centers across the United States face challenges on how to best provide patient-centered services, including nutrition services, in today's changing healthcare environment and with the looming impact of healthcare reform under the Patient Protection and Affordable Care Act. At the same

... RDs can play an indispensable role in providing nutritional care in the continuum of the patient-focused cancer care for cancer survivors.

would be diagnosed with cancer.¹⁸ The National Cancer Institute estimated in 2010 there were 11.7 million Americans living with a history of cancer of all sites (e.g., cancer free, living with evidence of disease, or undergoing cancer treatment).¹⁹ These numbers are in part due to improvements in early detection of cancer and the development of new—and often more aggressive—anticancer therapies.

The aging U.S. population also creates opportunities, as well as challenges, for the health system in general as well as for those caring for persons with cancer. Cancer has been shown to be a disease of aging and growing older, with 78 percent of cancers being diagnosed in persons 55 years or older.¹⁸ In the U.S., 60 percent of cancer survivors are 65 years or older.²⁰ The U.S. Census Bureau projects that the population of people aged 65 and older will grow by over 60 percent between 2000 and 2020, and an estimated 120 percent by 2050. According to recent reports, almost 75 percent of elderly have at least one chronic and/or co-morbid illness, such as cancer, cardiovascular disease, diabetes, or osteoporosis and nearly 50 percent of elderly have at least two chronic or co-morbid illnesses.¹⁷

In community cancer centers today, cancer recurrence is a very real concern for survivors continuing in follow-up care. The oncology multidisciplinary team comprised of nurses, medical providers, registered dietitians, and social workers are well positioned to help educate cancer survivors about strategies to decrease not only the risk of cancer recurrence, but for ways to improve overall health and risk reduction for other chronic and co-morbid conditions.²¹ An increasing number of community cancer centers are providing patients with individualized treatment and survivorship plans upon completion of their cancer treatment. Others are referring their patients to oncology rehabilitation programs. Still other patients with cancers that cannot be cured may be referred to palliative care or hospice care providers. Again, RDs can play

an indispensable role in providing nutritional care in the continuum of the patient-focused cancer care for cancer survivors.

Opportunity: Diet, nutrition, and cancer prevention

Just as there is a role for providing cancer survivors with guidance for reducing their risk of cancer recurrence, opportunities exist for community cancer centers to help influence community health through promoting healthy lifestyle and eating behaviors in effort to help prevent cancer.^{22,23} According to the American Cancer Society (ACS), almost half of all new cancer cases can be prevented or detected by earlier screening. Cancer accounts for nearly one in four deaths and is the second most common cause of death in the U.S. after heart disease. The ACS cites evidence that a third of the over 571,000 cancer deaths in 2011 were associated with nutrition and lifestyle factors such as poor diet, drinking alcoholic beverages, physical inactivity, and overweight and obesity.¹⁸ Another 171,000 deaths were attributed to tobacco use.

Dietitians can play a key role in helping to reduce the incidence of chronic disease by providing nutrition counseling and education as a part of a comprehensive health and wellness program.

Barbara L. Grant, MS, RD, CSO, LD, is outpatient clinical dietitian, Saint Alphonsus Cancer Care Center, in Boise, Idaho, and a member of the Advisory Committee for ACCC's Establishing and Improving Cancer Nutrition Programs in the Community Cancer Setting education project.

References

- 1 Warren S. The immediate cause of death in cancer. *Am J Med Sci.* 1932;184:610.
- 2 Copeland EM. Historical perspective on nutritional support of cancer patients. *CA Cancer J Clin.* 1998;48:67-68.
- 3 DeWys WD, Begg C, Lavin PT, Band PR, et al. Prognostic effect of weight loss prior to chemotherapy in cancer patients. *Am J Med.* 1980;69:491-497.

- 4 Academy of Nutrition and Dietetics/Evidence Analysis Library: Oncology Nutrition Evidence-Based Nutrition Practice Guideline. Available at: www.adaevidencelibrary.com. Last accessed Nov. 14, 2011.
- 5 August DA, Huhmann MG and the A.S.P.E.N. Board of Directors. A.S.P.E.N. clinical guidelines: nutrition support therapy during adult anticancer treatment and in hematopoietic transplantation. *J Parent Enter Nutr.* 2010;33(5):472-500.
- 6 Charney P, Malone AM. American Dietetic Association's Pocket Guide to Nutrition Assessment. 2nd ed. Chicago, IL: American Dietetic Association; 2009.
- 7 The Joint Commission. Standards for Nutritional, Functional, and Pain Assessments and Screens. Available at: www.jointcommission.org/standards_information/jcfaqdetails.aspx?StandardsFaql=208&ProgramId=1. Last accessed Nov. 15, 2011.
- 8 Eaton LH, Tipton JM. Putting Evidence into Practice: Improving Oncology Patient Outcomes. Pittsburgh, PA: Oncology Nursing Society, pages 25-36; 2009.
- 9 Levin R. The 7th vital sign: implementing malnutrition screening tool at a community cancer center. *Oncol Nutr Connect.* 2010; 18(3):10-14.
- 10 Academy of Nutrition and Dietetics. Evidence Analysis Library/Oncology Toolkit: Evidence-Based Nutrition Practice Guideline. Chicago, IL: American Dietetic Association; 2010. Available at: www.eatright.org/shop/product.aspx?id=6442452462. Last accessed on Nov. 16, 2011.
- 11 Adams LA, Shepard N, Caruso RA, Norling MJ, Belansky H, et al. Putting evidence into practice: evidence-based interventions to prevent and manage anorexia. *Clin J Oncol Nurs.* 2009;13(1):95-102.
- 12 Ravasco P, Monteiro-Grillo I, Vidal PM, Camilo PE. Dietary counseling improves patient outcomes: A prospective, randomized, controlled trial, in colorectal cancer patients undergoing radiotherapy. *J Clin Oncol.* 2005; 23(7):1431-1438.
- 13 Brown JK. A systematic review of the evidence on symptom management of cancer-related anorexia and cachexia. *Oncol Nurs Forum.* 2002;29(3):517-530.

- 14 Association of Community Cancer Centers. Nutrition Services: Cancer Program Guidelines. Available at: www.accc-cancer.org/publications/publications-cpguidelines.asp. Last accessed Nov. 16, 2011.
- 15 Commission on Cancer: Cancer Program Standards 2012: Ensuring Patient-Centered Care. Chicago, IL: American College of Surgeons. pages 38, Available at: www.facs.org/cancer/coc/programstandards2012.html. Last accessed Nov. 15, 2011.
- 16 National Cancer Institute. Cancer Bulletin: Cost of cancer care has doubled in the past 20 years. Available at: www.cancer.gov/ncicancerbulletin/051810/page10#b. Last accessed Nov. 15, 2011. (NCI, 2011a)
- 17 Rhea M, Bettles C. Future Changes Driving Dietetic Workforce Supply and Demand: Future Scan 2011-2021. Chicago, IL: Commission on Dietetic Registration, 2011. (in press)
- 18 American Cancer Society. Cancer facts & figures, 2011. Atlanta, GA: American Cancer Society. Available at: www.cancer.org/acs/groups/content/@epidemiologysurveillance/documents/document/acspc-029771.pdf. Last accessed Nov. 14, 2011.
- 19 National Cancer Institute. SEER stat fact sheets—cancer of all sites, 2011. Available at: www.cancer.org/acs/groups/content/@epidemiologysurveillance/documents/document/acspc-029771.pdf. Last accessed Nov. 14, 2011.
- 20 Horner MJ, Ries LAG, Krapcho M, Neyman N, Aminou R, et al. SEER Cancer Statistics Review, 1975-2006. National Cancer Institute, Bethesda, MD: Available at: http://seer.cancer.gov/csr/1975_2006/. Last accessed Nov. 14, 2011.
- 21 Edgington A, Morgan MA. Looking beyond recurrence: comorbidities in cancer survivors. *Clin J Oncol Nursing*. 2011;15(1):E1-E12.
- 22 Kushi LH, Byers T, Doyle C, Bandera EV, et al. American Cancer Society guidelines on nutrition and physical activity for cancer prevention: reducing the risk of cancer with healthy food choices and physical activity. *CA Cancer J Clin*. 2006;56:254-281.
- 23 Doyle C, Kushi LH, Byers T, Courneya KS, et al. Nutrition and physical activity during and after cancer treatment: An American Cancer Society guide for informed choices. *CA Cancer J Clin*. 2006;56:323-353.



Developing an Early Intervention Model and a “Culture of Nutrition”

St. Luke’s Health System Mountain States Tumor Institute

by Rhone M. Levin, MEd, RD, CSO, LD

In 2009, as St. Luke’s Health System grew and expanded services across the region, leadership at the Mountain States Tumor Institute (MSTI) recognized that nutrition consultation was not consistently available for oncology patients being treated at MSTI facilities. MSTI leadership acknowledged that early nutrition intervention can result in positive patient outcomes, is cost-effective, and can protect quality of life.¹ Further, MSTI participated in a survey of NCI Community Cancer Centers Program (NCCCP) sites that showed oncology nutrition services and nutrition education were the most widely desired services by MSTI patients.

Development of Nutrition Services

MSTI’s previous nutrition service model was reactive with referrals based on significant weight loss or progressive malnutrition. This late entry into nutrition care had the potential to negatively impact patient quality of life and increased the risks for complications, treatment delays, and hospital admissions. MSTI recognized that an early nutrition intervention model, when malnutrition is less severe, was more effective.² In addition, oncology support

services have been shown to influence patient perceptions of care. Services that protect quality of life can affect patient and family perceptions about the care provided at community cancer centers.³

In 2010 MSTI developed a best practice goal that all oncology patients would receive consistent and proactive nutrition services, and established the following services and practices to create excellence in the oncology nutrition program:

- Provide consistent oncology nutrition service and care for each patient regardless of MSTI site, thus meeting the St. Luke’s directive to reduce health-care disparities across rural Idaho.
- Implement consistent use of a malnutrition screening tool throughout all oncology treatment to identify early malnutrition and the most appropriate time to refer to the oncology dietitian.
- Provide access to registered dietitians (RDs) with specialized training in oncology nutrition.
- Use virtual technology to offer consistent nutrition services to all clinics, every day.
- Provide proactive care of high-risk head and neck cancer patients. Use standardized order sets and care plans to implement early nursing and nutrition interventions to address side effects and prevent treatment breaks.
- Initiate Supportive Care Clinics (SCCs) across the cancer sites to address complex patients in a multi-modality team approach, including oncology dietitian, nurse practitioner, primary nurse, pharmacist, social worker, integrative medicine, and chaplain.
- Educate and prepare patients about their treatments prior to starting radiation or chemotherapy in an educational style preferred by the patient.
- Implement survivorship programs that address long-term consequences of treatment, cancer prevention, and lifestyle choices.
- Develop a “culture of nutrition” where

all staff participate in surveillance of patient nutritional status and provide nutrition referrals on identification of a nutrition concern.

- Develop sustainable protocols, procedures, practices, and materials; and share them with other oncology dietitians and cancer centers, and NCCCP sites to improve quality oncology nutrition practice across the United States.

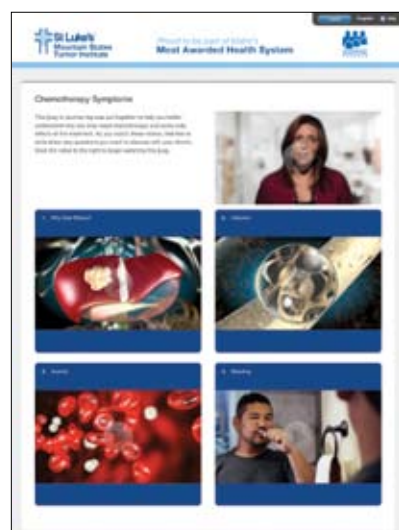
MSTI leadership acknowledged that early nutrition intervention can result in positive patient outcomes, is cost-effective, and can protect quality of life.¹

Nutrition Program Staffing

MSTI’s oncology dietitians are part of the Food and Nutrition Services staff, with some additional supervision provided by an NCCCP contract department. Oncology dietitian services are considered oncology support services and are not charged. Nutrition services are available to all cancer patients. Any staff member can refer a patient for nutrition consults and patients can self-refer. A physician or nurse practitioner order is required for the “NO STOPS” Head and Neck Program and the Supportive Care Clinic (see below).

Oncology nutrition services are provided by registered dietitians, two of whom hold CSO (Certified Specialist in Oncology Nutrition) certification from the Commission on Dietetic Registration. Oncology nutrition is an advanced practice specialty among dietitians. Acquiring the CSO credential indicates acquired experience and a unique skill set. MSTI dietitians are licensed in Idaho, and some RDs hold additional state licenses.

To offer adequate nutrition services,



MSTI’s J-logs allow patients to access educational information at their convenience.

St. Luke's Health System Mountain States Tumor Institute is a non-profit regional community cancer program. The seven-hospital system offers five full-service cancer treatment sites serving southern Idaho, eastern Oregon, and northern Nevada. The hospitals and cancer center sites are separated geographically across southern Idaho and eastern Oregon.

The MSTI system offers a full range of oncology services, tumor boards, and clinical trials over a 160-mile radius. Patients may travel more than two hours for treatment and may receive services at several MSTI clinics. Physicians are flown to remote clinics to see patients, and all disciplines routinely travel to far-off sites to improve patient convenience and comfort.

In 2010, MSTI was named a National Cancer Institute (NCI) Community Cancer Center Program (NCCCP) pilot site, one of 30 hospitals in 22 states charged with reducing health disparities and improving quality of care.

- Bed size: 825 licensed beds
- New analytic cases 2010: 2,508
- Medical staff: 11 medical oncologists, 5 radiation oncologists, 4 pediatric oncologists, 4 surgical oncologists
- Advance practice providers: 10 nurse practitioners, 2 physician assistants
- Accreditations: ACoS Commission on Cancer, American College of

Radiology, American Society for Therapeutic Radiation Oncology, The Joint Commission, [NSABP application pending]

- Affiliations: SWOG, RTOG
- Percentage of patients estimated to be at high nutritional risk: 35 percent

MSTI has increased oncology dietitian staffing. In 2007 the full-time equivalent (FTE) was 0.6, in 2008 the FTE was 1.3, FTE 2009 was 1.4, and in 2010 with the introduction of NCCCP-related services, the FTE was 2.0. (See Table 1, opposite page, for allocation of dietitian services across MSTI sites.)

The Food and Nutrition FTE oncology dietitian is funded out of the operations budget. The NCCCP grant provides funding for:

- Development of an onsite oncology dietitian position at Magic Valley
- Supportive Care Clinics
- Updating of the oncology nutrition EMR
- Educational class development
- Survivorship appointments and survivorship classes.

As adequate FTE time developed, the oncology dietitians have implemented team coverage to provide service to all

clinics for acute nutrition issues. RDs that are new to oncology specialty practice are mentored by the CSOs and trained using the Standards of Practice, Standards of Professional Performance for Oncology Dietitians published in the *Journal of the American Dietetic Association*.⁴ Continuing education is supported for oncology specialty practice, cancer prevention nutrition, and cancer survivorship nutrition.

Interventions & Nutrition Education for Patients

Oncology dietitians have experience, training, and the tools to maximize good nutrition outcomes in cancer treatment. Aggressive management of symptoms and side effects provide the best opportunity to interrupt decline in nutritional status. Dietitians can offer strategies to modify the most common symptoms: anorexia, early satiety, nausea and vomiting, bloating and fullness, reflux, gastroparesis, dysphagia,

xerostomia, painful chewing or swallowing, taste alteration, diarrhea, and constipation. Among the services MSTI oncology dietitians provide are:

- Coordination of treatment diet with complex medical histories
- Management of tube feeding and total parenteral nutrition
- Nutrition to promote wound healing
- Nutritional strategies for the altered or shortened gut
- Guidance on use of pancreatic enzymes and nutritional supplements
- Modified diets for patients with nutrient malabsorption
- Evaluation of complementary and alternative nutrition strategies
- Information on nutrition and cancer prevention and survivorship nutrition
- Management of the late effects from treatment
- Behavior modification to assist patients in changing unhealthy lifestyles.

MSTI oncology dietitians use Medical Nutrition Therapy, an evidence-based nutrition technique developed by the Academy of Nutrition and Dietetics. Practice points are based on the Evidence Analysis Library research found on the AND website at: www.eatright.org.

MSTI's nutrition education materials are approved by an interdisciplinary workgroup. These resources include: American Dietetic Association Management of Nutrition Impact Symptoms in Cancer and Educational Handouts,⁵ "Eating Hints" booklet⁶ from the National Cancer Institute, American Cancer Society handouts, and Spanish version, "Consejos de Alimentación".⁷ Materials from American Institute of Cancer Research, Pancreatic Cancer Action Network materials, Up-to-Date, Micromedex, as well as materials from the AND Nutrition Care,⁸ and handouts developed by St. Luke's are also used. Additional resources include guidelines and materials from the Oncology Nursing Society, the American Society for



MSTI's oncology dietitians (L-R) Kaye Heazle, RD, LD; Natalie Echanis, RD, LD; and Valerie Robenstein, RD, CSO, LD, help co-lead Treatment Learning Classes for patients and their families.

Parenteral and Enteral Nutrition, and the Natural Medicines Comprehensive Database.

Malnutrition Screening: The 7th Vital Sign

Incorporating a malnutrition screening tool into routine oncology care is a comprehensive method to identify patients early in nutritional decline. At MSTI, all oncology patients are screened for malnutrition, thus expanding nutrition surveillance to cancer patients that may not have high-risk diagnoses, but still may have difficulty maintaining adequate intake due to cancer burden or rigorous treatment. Patients in need of assistance can be identified at the moment when nutrition intervention is most effective and likely to have significant impact to protect quality of life. This process is a more effective use of dietitian time, allowing the oncology dietitian to focus more on providing nutrition interventions rather than tracking and monitoring certain diagnoses for anticipated nutritional decline.

Before every physician visit, each patient is screened using the "7th Vital Sign" malnutrition screening tool, a

simplified version of the Malnutrition Screening Tool.^{9,10} Radiation patients on treatment are screened once per week; medical oncology patients are screened at least once every three weeks.

In brief, the screening process is as follows. While the patient is being weighed, the nursing assistant asks, "Have you had a decrease in appetite?" The answer to this question is documented in the EMR as the 7th vital sign. If the patient answers "yes," and any weight loss has occurred, a Weight Loss Screen referral is sent in the MOSAIQ

program Quality Check List to the nutrition services for that MSTI site. The EMR program documents who sent the referral and when the referral is completed by the dietitian, information which is used in performance improvement data.

MSTI is phasing in implementation of tele-health to allow support services to be provided across distances with high-quality visual, verbal, and printed interaction. This technology will promote effective use of dietitian time and reduce travel expense, while offering patients in an acute situation access to convenient, timely service. The dietitian carries a laptop with a camera and Microsoft Lync program. The remote sites use a computer on wheels to bring the services to the patient. The patient views two screens: one of the dietitian and one of either the patient handouts (to be printed out at the clinic) or a short PowerPoint presentation with each main point highlighted as it is discussed.

Head and Neck Patients—Spray and Weigh

Standardized order sets for head and neck radiation treatment, called "NO STOPS,"¹¹ (Nutrition, Oral Care, Skin Care, Therapy Needs, Pain, and Social Issues) identify and initiate early intervention for side effects that interfere with nutritional intake. The goal is to reduce unplanned treatment breaks during radiation therapy that are considered negative prognostic indicators in head and neck cancer control. Each day that radiation treatment is

Table 1. 2011-2012 Allocation of Dietitian Services Across MSTI Sites

Site	FTE Food & Nutrition Department	FTE NCCCP Grant
Boise (39% of new pts.)	2.1	0.2
Western clinics (43% of new pts.)	1.0	1.3
Magic Valley (18% of new pts.)		0.5

interrupted may reduce the tumor control rate by 1 percent.¹² The order set includes:

- Daily cleansing and nursing evaluation of the oral cavity
- Assessment of mucosal and skin integrity
- Vital signs
- Secretion management
- Evaluation of daily weight, hydration and nutritional intake, bowel function, and use of medications
- Assessment of tube-feeding tolerance.

Patients call the process “spray and weigh.” Oncology nutrition evaluation is ordered weekly, although communication between nursing and dietitians is more frequent when intervention is required.

Supportive Care Clinics

MSTI’s Supportive Care Clinics were developed with assistance from an NCCCP contract. Launched in 2010, these clinics incorporate a multi-modality team approach for patients with complex treatment, palliative care needs, pain control, family issues, and other problems. An interdisciplinary group of clinicians collaborates to improve patient outcomes, develop tools, share lessons, and coordinate care. Quality of life issues, medication and side effect management, and patient and family stressors are addressed. Within the first year of SCC operation, the primary reasons for referral included weight loss and pain and fatigue. Eighty-five percent of patients seen in MSTI’s SCCs presented with issues that required intervention by the oncology dietitian.

Treatment Learning Class

This class offers patients and family members education on what to expect while receiving radiation therapy and/or chemotherapy. The class, which is team taught by a nurse, radiation therapist, wound care nurse, social worker, and oncology dietitian, is offered prior to the patient’s first treatment. The patients

Case Study

A 54-year-old professional presented with diagnosis of metastatic pancreatic cancer involving the lung and likely the liver. The patient’s stated goal was to continue working as much as possible in treatment. The patient’s past medical history includes diabetes mellitus. Pancreatic insufficiency was demonstrated by elastase stool test. The patient did not tolerate folfirinox chemotherapy due to intractable abdominal pain and diarrhea, and chemotherapy treatments were changed to gemzar. Subsequent diagnosis of gastroparesis required placement of jejunal feeding tube.

Initial nutrition consultation during the Supportive Care Clinic focused on dosing and effective use of pancreatic enzymes and education regarding nutrition in chemotherapy treatment and healing. The patient received an additional 11 medical nutrition therapy interventions with the oncology dietitian over a 9-week period for: weight loss, severe nausea, diarrhea, dehydration, fat malabsorption, modified use of pancreatic enzymes, gastroparesis diet, and implementation and progression of jejunal tube feedings.

The patient required elemental tube-feeding product with increased medium chain triglycerides due to inability to utilize pancreatic enzymes with J-tube feeding. Weight stabilization was achieved, and adequate nutrition and hydration was achieved via feedings. The patient carries a tube feeding pump, which runs 20 hours per day, in a backpack and attends work as much as possible. The oncology dietitian continues to provide close monitoring and medical nutrition therapy to assist the patient to tolerate treatments and protect quality of life.

and family call it “TLC.” The nutrition component discusses the benefits of maintaining good nutrition during treatment, meeting the increased nutritional demands of healing, dealing with treatment side effects, and the use of nutritional supplements during treatment. Journey logs (J-logs) and DVDs that were created at St. Luke’s are available for patients who would rather receive information via email or watch it at home (see page 11).

Breast Cancer Survivorship Class and Cancer Survivorship

This eight-week program, taught by an oncology dietitian, social worker, and registered nurse, addresses the breast cancer survivor experience, educates on behaviors that may modify risk of breast cancer recurrence, and prepares survivors to manage the late effects of treatment. The survivorship nutrition component is based on the Women’s Intervention Nutrition Study, Women’s

Healthy Eating and Living trial, and the American Institute for Cancer Research Continuous Update Project for breast cancer. The nutrition education focus is on weight control, physical activity, and a low-fat, plant-based diet. The nursing and psychosocial education discusses lymphedema prevention and management; sexuality; osteoporosis prevention; medications; and medical surveillance, dealing with fear of recurrence and how to implement effective lifestyle behaviors.

Survivorship appointments have been implemented for all breast cancer survivors, and are now rolling out for other diagnoses. At the end of active treatment, cancer patients meet with a social worker and nurse practitioner regarding their survivorship plan. Survivorship nutrition information is included in the materials provided. Patients are referred to the oncology dietitian for individual survivorship nutrition appointments on request or demonstrated need.

Creating a “Culture of Nutrition”

Oncology treatment occurs over a lengthy period of time and creates symptoms that can change day to day. Each staff member interacts with patients in his or her own professional role, and may garner information that impacts nutritional status. Patients benefit from nutrition surveillance that extends beyond the oncology nutrition staff. At MSTI, oncology dietitians foster a “culture of nutrition” that encourages all staff to monitor for malnutrition and refer to the dietitian. The oncology dietitians participate in work groups, clinical practice meetings, performance improvement, patient education committee, patient rounds, interdisciplinary clinics, Schwartz Rounds, journal clubs, and provide staff education and in-service training. The nutrition staff is active in professional volunteerism through participation in Academy of Nutrition and Dietetic work groups, dietetic practice groups, and the Evidence Analysis Library. The oncology dietitians also participate in research and offer articles for publication in peer-reviewed journals to share information and best practices.

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References

- 1 Houge K, Jonnalagadda S. Does nutrition intervention in cancer patients impact cost savings? *Oncol Nutri Connection*. 2006; 19(6):447-450.
- 2 Ottery F. Definition and standardized nutritional assessment and interventional pathways in oncology. *Nutrition*. 1996;12:S15-S19.
- 3 Wolcott D, Wolosin R., Macdonald J, Strouse T. Cancer patients use of supportive care services and cancer center services satisfaction. *J Clin Oncol*. 2008;26(May20 supplement; abstract 20641).
- 4 Robien K, Bechard L, Elliott L, Fox N, et al. American Dietetic Association: Revised Standards of Practice and Standards of Professional Performance for Registered Dietitians (Generalist, Specialty, and Advanced) in Oncology Nutrition Care. *J American Dietetic Assn*. 2010;110 (2):310-317.
- 5 Eldridge B, Hamilton K. Management of Nutrition Impact Symptoms in Cancer and Education Handouts. American Dietetic Association. 2004.
- 6 National Cancer Institute. Eating Hints: Before, during and after cancer treatment. NIH number: 11-2079. Available at: <https://cissecure.nci.nih.gov/ncipubs/detail.aspx?prodid=P18>. Last accessed Dec. 12, 2011.
- 7 National Cancer Institute. Consejos de alimentacion: Antes, durante y despues del tratamiento del cancer. NIH number: 11-2079S. Available at: <https://cissecure.nci.nih.gov/ncipubs/detail.aspx?prodid=P830>. Last accessed Dec. 2, 2011.
- 8 *Nutrition Care Manual*. Academy of Nutrition and Dietetics. 2012. Available at <http://nutritioncaremanual.org>. Last accessed Feb. 8, 2012.
- 9 Isenring E, Cross G, Daniels L, Kellett E, et al. Validity of the malnutrition screening tool as an effective predictor of nutritional risk in oncology outpatients receiving chemotherapy. *Supportive Care in Cancer*. 2006;14(11):1152-1156.
- 10 Kubrak C, Jensen L. Critical evaluation of nutrition screening tools recommended for oncology patients. *Cancer Nurs*. 2007;30(5): E1-E6.
- 11 Lambertz C, Gruell J, Robenstein V, Mueller-Funaiolo V, et al. NO STOPS: Reducing treatment breaks during chemoradiation for head and neck cancer. *Clin J Oncol Nurs*. 2010;14(5):585-593.
- 12 Russo G, Haddad R, Posner M, Machtay M. Radiation treatment breaks and ulcerative mucositis in head and neck cancer. *Oncologist*. 2008;13:886-898.



Leveraging the Power of Technology for Nutrition Screening

MultiCare Regional Cancer Center

by Kelay Trentham, MS, RD, CSO, CD

In the early stages of program development at MultiCare Regional Cancer Center, cancer center administrator David Nicewonger gathered input about much needed support services from physicians and clinic staff, as well as from patients who participated in a patient advisory committee.

Through this process, MultiCare identified a need for nutrition services in the outpatient setting. Patients, in particular, wanted to have access to someone with oncology nutrition expertise who could answer their questions about nutrition—both during and after cancer treatment. At that time, access to a registered dietitian (RD) for oncology nutrition consultation at MultiCare was limited to patients who experienced a hospital admission. Nicewonger responded to the request for this service by spearheading an effort to bring an oncology-specialized RD on staff. He included a full-time RD position in the cancer center's strategic plan, and garnered board-level support to include the new position in the operations budget.

In July 2007 a full-time RD was hired and development of a comprehensive nutrition program began. In January 2010, a second RD was hired as the number of clinic sites had increased, and the number of new patients had doubled across all sites in a five-year period.

Developing an Outpatient Nutrition Program

To assess the needs of the patient population, the RD requested input from providers, pharmacists, nursing staff, the social worker, and the nurse navigator. Review of the cancer center's diagnoses statistics was conducted with the assistance of the business manager. Additional understanding of patient needs came from ongoing Patient Advisory Committee meetings and from providing nutrition consultation to patients undergoing active treatment.

Evaluation of this information and collaboration with the cancer center's administrative team yielded the following initial nutrition program goals:

- Education of providers, nurses, and other allied healthcare staff regarding risk factors for malnutrition and when referral of patients for nutrition consultation is appropriate
- Provision of nutrition consultation to those cancer patients at highest risk for malnutrition during treatment
- Development of nutrition education material appropriate for the patient population

- Yearly nutrition-related community outreach via cancer nutrition classes, participation at MultiCare-sponsored health screenings, and other community-based events
- Development and implementation of a nutrition screening process based on our unique patient population and available resources
- Provision of nutrition services to all of MultiCare Regional Cancer Center's clinics.

Program Structure

MultiCare developed its nutrition program within the framework of the cancer center's patient navigation team. The MultiCare Regional Cancer Center interdisciplinary navigation team includes nurse navigators, patient service representatives, social workers, and dietitians. Together, this team is charged with supporting patients as they move through various points of the healthcare system and providing care coordination for those with highly complex medical, psychosocial, financial, nutritional, and/or logistical needs. As members of the navigation team, the RDs report



Oncology dietitians Ashlee Yancey, RD, (on L) and Kelay Trentham, MS, RD, CSO, (in C) talk with a patient.

to the cancer center's administration. Nutrition program activities also receive oversight from MultiCare's clinical nutrition manager.

Patients are frequently referred for nutrition consultation by other members of the navigation team. An RD attends the multidisciplinary Cancer Committee meeting, Patient Advisory Committee meetings, and tumor boards when appropriate. Support services for the nutrition program (appointment scheduling, reminder phone calls) are provided by cancer center staff. Office space for RDs is provided within the cancer center, allowing for direct collaboration with the navigation team, cancer center staff, and providers. Nutrition consultation takes place onsite: patients are seen in consultation rooms, exam rooms, or in the infusion suites. Nutrition services are provided as part of patients' overall care and are not separately billed.

Nutrition Screening

Nutrition screening is of pivotal importance for ensuring that patients who need nutrition services are identified and appropriate interventions provided. Initial attempts at conducting nutrition screening included use of a paper screening form modeled after a portion of the scored Patient-Generated Subjective Global Assessment (PG-SGA) (page 31).¹ However, this process proved cumbersome for a variety of reasons:

- Not all patients agreed to complete the form
- It was difficult for staff to determine when patients should be given the screening form
- Forms were often incomplete when returned
- The dietitian had to review each form individually.

There was also no efficient mechanism for recording its results in the electronic chart. This process was soon discontinued and work began on developing a more efficient means of identifying patients at nutritional risk.

As the entire cancer center was to

begin using a new oncology module (BEACON) of its electronic medical record (Epic), Information Services was consulted to determine whether data already being collected could be configured into a nutrition screening. This process would take some time. In the interim, MultiCare used diagnosis as a means of prioritizing the provision of nutrition consultation for new patients. Diagnoses of head and neck, esophageal, gastric, pancreatic, colon, rectal, and lung cancer are associated with

perform calculation functions similar to a spreadsheet, it could be configured to calculate Body Mass Index (BMI) and weight changes, as well as generate a numerical score from the input data. In addition, an alert could be sent to the RDs via the EMR's internal messaging system ("inbasket") for scores greater than a determined cutoff.

With additional data points to be entered by nursing staff, weight change calculations, and the alert function added to the flowsheet, an electronically

MultiCare Regional Cancer Center is a hospital-based oncology practice now consisting of four medical oncology clinics, having recently consolidated two locations. The primary clinic location is in Tacoma, Wash., with three satellite clinics in Auburn, Gig Harbor, and Puyallup. Three clinics—Auburn, Tacoma, and Gig Harbor—provide radiation oncology services.

- Bed size: 79 infusion chairs
- New analytic cases 2010: 1,494
- Accreditations: American College of Surgeons, The Joint Commission

significant malnutrition risk based on disease process, treatment modality, or both. Patients with these diagnoses who elected to undergo treatment, as well as any patient receiving concurrent chemotherapy and radiation, received early nutrition consultation and continued follow-up. Patients with other diagnoses continued to be seen on referral from any member of the medical team (provider, pharmacist, nurse, social worker) or by self-referral.

Using diagnosis to prioritize patients allowed the RD to quickly triage the need for nutrition care of new patients; however, the question of how to efficiently capture changes in the nutritional status of all patients still remained. Nursing staff regularly assessed all patients coming in for provider appointments, chemotherapy, or radiation, and entered data into a spreadsheet-style document in the EMR called a "doc flowsheet." Several of these data points mirrored typical nutrition screening data including height, weight, and gastrointestinal symptoms or problems. Because this flowsheet could

based screening tool with automatic notification for high scores became a reality. The primary measurement of the screening is percent weight loss and BMI. The nutrition screening is performed by nursing staff at each office visit and when patients are seen in the infusion room. Frequency of screening varies depending on how often patients are seen in the clinic and occurs at least weekly for patients on active treatment.

Technology Improves Workflow

In addition to the nutrition screening function, the EMR was also configured to aid in referral and documentation aspects of patient care. Nutrition documentation templates were created that included the ADIME (assessment, diagnosis, intervention, monitoring, and evaluation) method of charting, and drop-down menus list several nutrition diagnoses common to the oncology population.² Charting template use ensures that charting style and information included in progress notes are consistent among RDs. Referral orders

Patients, in particular, wanted to have access to someone with oncology nutrition expertise who could answer their questions about nutrition—both during and after cancer treatment.

specific to either medical or radiation oncology were also created and set up to route via “inbasket” to the appropriate department’s scheduling pool.

Another function of the EMR, the Care Team list, allows other members of the medical team across all of the MultiCare Health System sites to quickly determine which oncology RD is primarily caring for the patient. Other key players in the patient’s care, such as the home infusion company, diabetes

on the patient’s condition. Patients are educated about a variety of topics pertinent to their treatment, including strategies for maintaining weight during treatment, interventions for managing nutrition-related side effects, and the rationale for and use of feeding tubes. The RDs consult with patients on supplement use, and have access to both the Natural Standard and Natural Medicines Comprehensive Databases. Patients who have completed treatment

tion materials for our patient population. Other resources used for education include the booklets, *Nutrition for the Person with Cancer During Treatment: A Guide for Patients and Families* by the American Cancer Society⁵ and *Eating Hints: Before, During and After Cancer Treatment* by the National Cancer Institute,⁶ as well as handouts from the Academy of Nutrition and Dietetics Nutrition Care Manual (<http://nutritioncaremanual.org>).

Our patient resource center is stocked with various pamphlets about nutrition and cancer from the American Institute for Cancer Research. Our patient resource manual also contains a section on nutrition with information on eating well during treatment, side-effect management, and basic food safety and hygiene for the prevention of food-borne illness.

Case Study

A 54-year-old man was diagnosed with head and neck cancer. His physician recommended feeding-tube placement and nutrition consult prior to treatment. The oncology dietitian reviewed nutrition-related treatment side effects, the importance of weight maintenance, and the role of tube feeding once odynophagia made oral intake too difficult. The patient met with the oncology dietitian, nurse navigator, and/or social worker weekly during treatment for monitoring and support.

When the patient’s intake and weight began to decline, he was encouraged to begin using his feeding tube. At that time, he was reluctant to do bolus tube feedings due to a previous negative experience while in the hospital. He did not have a caregiver who could assist him, and he also did not wish to use a pump. He was encouraged to try gravity feeding, but preferred not to because of the need to be idle during feedings.

After much discussion, the patient finally admitted that he had a “mental block” to giving himself tube feedings. Though the social worker attempted to teach him guided imagery techniques while the nurse navigator did a feeding, he remained unsuccessful at doing feedings himself. The dietitian eventually convinced him to use a feeding pump, which he could carry in a backpack all day, to deliver nutrition and hydration. Once the patient became accustomed to it, he stated that it was the best decision he could have made as it allowed him to live his life more fully during the remainder of his treatment.

educator, speech therapist, or dentist can also be added to the Care Team list. The “inbasket” function of the EMR allows for secure and seamless communication between all members of the healthcare team.

Nutrition Interventions

Patients identified as having nutritional problems or as being at risk for malnutrition are provided individual nutrition assessment, counseling, and education, as well as regular follow-up with an oncology RD. Frequency of follow-up is determined by the RD and based

are encouraged to request a consult to discuss diet and lifestyle changes appropriate for cancer survivors to help reduce their risk of recurrence. Following nutrition assessment, the RD may also initiate referrals to other members of the healthcare team, such as home infusion services, speech and physical therapists, social workers, and the oncology pharmacist as needed.

Based on *The Clinical Guide to Oncology Nutrition*³ and *Management of Nutrition Impact Symptoms in Cancer and Educational Handouts*,⁴ RD-supervised student interns created patient educa-

Program Benefits & Outcomes

Since 2008 MultiCare Regional Cancer Center’s oncology RDs have conducted 13 nutrition education community outreach activities—an average of three per year. These include MultiCare-sponsored cancer nutrition classes in each clinic’s community, and speaking about nutrition and cancer for support groups, cancer screening events, the Pierce County Survivors’ Conference, Gig Harbor YMCA’s *Exercise and Thrive* series for cancer survivors, and a luncheon for lymphedema patients. Feedback from participants has been overwhelmingly positive, with attendance at the community classes exceeding expectations. One attendee, who was also a local primary care provider, urged “keep doing this—it is information people need to know.” An oncology RD also gave MultiCare’s Tacoma Family Medicine residents an overview of the role of nutrition in cancer prevention, treatment, and survivorship.

Working daily with providers and staff at the cancer center has led to increased recognition of the role nutrition plays both during and after cancer treatment. Medical oncologist Daniel Moore, MD, finds that “nutritional consultation with the two RDs

at Multicare Regional Cancer Center is vitally important for the patients we share—especially for those patients undergoing concurrent chemotherapy and radiation, those with pancreatic insufficiency, and those with cachexia.” Nurse practitioner Tanisha Mojica concurs. “This is the first time in my 12-year career that I have had RDs available in the outpatient setting and it has been an invaluable resource to my practice and a great benefit to my patients.” The dietitians’ strengths include:

- Extensive knowledge of disease-specific nutrition therapy
- Understanding of complementary medicine (herbal supplements and vitamins)
- The ability to provide nutritional strategies for managing nutrition-related chemotherapy and radiation side effects
- The ability to assist with feeding tube use and care
- The ability to advise patients regarding appropriate use of pancreatic enzymes.

As previously mentioned, providing consultation to those at greatest risk for malnutrition has been a high priority. New patients considered to be at high risk for malnutrition (head and neck, esophageal, gastric, pancreatic, colon, rectal, and lung cancer) were tracked for one year, and MultiCare achieved the goal of having at least 95 percent of these patients receive an outpatient nutrition consultation. Implementation of an electronic screening process has allowed monitoring of weight changes for all patients beginning with their first appointment at the clinic and continuing through treatment and post-treatment surveillance. Finally, the addition of a second full-time RD has allowed for patients at all clinics to have access to one-on-one, onsite nutrition consultation.

Future Directions

As MultiCare works to identify and provide nutrition intervention for those patients with the greatest need, the cancer center also hopes to continu-



A nutrition screening function was added to MultiCare’s EMR.

ously improve its processes and care. Ideas include:

- Using the scored PG-SGA at regularly defined intervals and developing a way to incorporate it into the EMR
- Videotaping a nutrition class so that it can be shown chair-side using our Lincor multimedia devices
- Conducting surveys to assess patient satisfaction with outpatient nutrition care
- Developing a more structured process of nutrition screening and intervention for cancer survivors.

In addition, monitoring clinical outcomes will be critical to demonstrate efficacy and to help refine the focus of our care. Leveraging the power of our technology will be the key to succeeding at these endeavors.

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References

- 1 McCallum P. Nutrition Screening and Assessment in Oncology. In *The Clinical Guide to Oncology Nutrition*, 2nd ed. Elliott L, et al. eds. Chicago, IL: American Dietetic Association; 2006.
- 2 American Dietetic Association. *International Dietetics and Nutritional Terminology Reference Manual: Standardized Language for the Nutrition Care Process*. Chicago, IL: American Dietetic Association; 2010.
- 3 Elliot et al. *The Clinical Guide to Oncology Nutrition*. 2nd ed. Chicago, IL: American Dietetic Association; 2006.
- 4 Eldridge B, Hamilton KK. *Management of Nutrition Impact Symptoms in Cancer and Educational Handouts*. American Dietetic Association; 2004.
- 5 American Cancer Society. *Nutrition for the Person with Cancer During Treatment: A Guide for Patients and Families*. American Cancer Society; 2004.
- 6 The National Cancer Institute. *Eating Hints: Before, During and After Cancer Treatment*. National Cancer Institute; 2009.

Coordinating Cancer Nutrition Services Across Care Settings

Thomas Johns Cancer Hospital

by Virginia Vining, RD; Steven Castle, MBA, RT(T); and Janis R. Nail, RD

Generally, oncology nutrition services are limited to inpatient registered dietitians (RD), especially in the community hospital setting where programs may have fewer resources or lower volumes. These RDs tend to carry heavy workloads, are limited to inpatient areas, and are not sub-specialized into oncology. Referring physicians order the nutrition consult, but may often have little knowledge of who is actually going to see the patient. At many community cancer programs, a significant barrier to offering dedicated nutrition services is funding, as the services are generally not reimbursed. Today, with 90 percent of oncology care being provided in the outpatient setting,¹ the costs of providing this non-reimbursable service becomes a challenge. This, in turn, creates a gap between what the evidence shows we should be doing for our patients and their families and what we are actually doing.²

Today, being a comprehensive cancer program means offering more than surgical, medical, and radiation oncology services. As ACCC's *Cancer Program Guidelines* indicate, an optimal interdisciplinary comprehensive cancer program encompasses supportive care services, including nutrition services. Three years ago, the Thomas Johns Cancer Hospital sought to find a means of providing this evidence-based service.

Building Outpatient Nutrition Services

Thomas Johns Cancer Hospital started its dedicated outpatient nutrition program to support evidence-based guidelines that make nutritional intervention an important service in the delivery of comprehensive cancer care. Our physician-led Oncology Executive Committee and our oncology nurse specialist spearheaded the effort to develop the nutritional services department in outpatient oncology, with the full support of oncology administration. This team championed the need for outpatient access to a dedicated, trained dietitian. The physicians agreed to assist in training a recruited dietitian. The role envisioned for the new

outpatient dietitian was to focus on outpatient consultation and education pre- and post-treatment intervention. The dietitian would attend the cancer conferences to help identify cases and educate the clinical team on nutrition-related issues. In addition, the dietitian would be an integral member of the oncology team, participating in the multidisciplinary cancer committee and serving on several other committees related to accreditations.

Staffing Nutrition Services

Due to budget constraints, PRN staff positions were created to fill the new outpatient oncology dietitian role, as this staffing model was more likely to gain administration approval and provided flexibility in schedules to allow for adequate care and in meeting volume and demand. Having two PRN RDs would allow for greater service development and backup. In addition, recruitment of RDs tends to be challenging, especially in the local market. The PRN position was attractive to those wishing to balance personal and professional lives. As a result, we were able to recruit two experienced dietitians from our local community who were deeply committed to working with our team to gain specialized oncology knowledge.

Currently, our two outpatient registered dietitians work an average of four days a week to cover radiation oncology, infusion, and Gamma Knife patients, as well as outside referrals from the private medical oncology group housed within the Thomas Johns Cancer Hospital and

surgery. A designated inpatient dietitian covers the hospital's inpatient population and works closely with outpatient nutrition services to meet patients' needs once they are discharged. This relationship allows us to manage the "gap" that might otherwise exist between inpatient and outpatient care. Our inpatient RDs refer patients to outpatient dietitian services when appropriate for outpatient management.

Outpatient nutritional services are available free of charge to all patients who are screened for nutrition impact symptoms, as well as those patients who self-refer for nutrition information.

Program Goals

The three primary priorities of the outpatient nutrition program are:

1. To improve the patient's nutritional status and quality of life through timely, convenient, appropriate, individualized, and specialized nutritional care. Bridging the continuum of care from inpatient to outpatient is a key component of this effort.
2. To provide support to patients in active treatment in an effort to address nutrition-impact symptoms that could lead to hospital admission and/or treatment breaks. Thus, striving to mitigate the risk of dose and treatment schedule interruptions.
3. To participate in prevention-themed community outreach talks, as well as integrated programs within our survivorship services.

Thomas Johns Cancer Hospital (TJCH), part of the HCA Health System, is a new dedicated, community-based comprehensive cancer hospital located in Richmond, Va. The integrated facility brings inpatient and outpatient cancer services under one roof to streamline patient access to care. Thomas Johns Cancer Hospital has received accreditation from the ACoS Commission on Cancer (with an Outstanding Achievement Award), the NAPBC, and the ACR. In addition, The Joint Commission has granted Certificates of Distinction for Colo-Rectal and Brain Tumor care. In 2011, TJCH received the Virginia Health Care Innovators Award for development of its viable model and supportive technology for cancer survivorship services. In 2010, growing in volume, TJCH saw 2,125 new cases.

Getting Started

Initially, the outpatient dietitian services began with radiation oncology patients, starting with an outpatient RD sitting in on weekly chart rounds for these patients.

The next step: introduction of patient self-assessment forms (page 23). These forms were to be completed by all radiation oncology patients, as well as other departments. For example, per policy, all patients with head and neck, lung, esophageal, liver, brain, colon, or pancreatic cancer have automatic triggers for nutrition consult. Recently, an electronic order entry was added to the hospital electronic health record (EHR) as an easy means of introducing the nutrition consult service with a trigger at the time of the surgeon's initial consultation.

The designated oncology nutrition office is conveniently located on the first floor of the cancer hospital, opposite the registration area and strategically positioned between radiation and medical oncology. The private hematology and oncology practice is adjoined with the hospital and patients can walk a short distance straight across the hospital lobby to access nutrition services.

Outside the nutrition services office, a large poster identifies the program and RD business cards are available. The nutrition office is spacious enough to accommodate the patient and family members. Patients are scheduled for outpatient nutritional consultations at the same time as treatment and physician appointments in an effort to ease their schedules and assure that they can attend the nutrition consult.

Adjacent to the office is the Hawthorne Education Center, which contains a teaching kitchen available for our dietitian to use with patients and families for interactive lessons.

Nutritional Intervention

For patients in active treatment, the nutritional self-assessment screening tool (page 23) is used to help identify those at risk for malnutrition, as well as those experiencing nutrition-impact symptoms who need support and nutritional intervention. This self-assessment tool, based on the Patient-Generated Subjective Global Assessment (PG-SGA)



Thomas Johns Cancer Hospital, Richmond, Va.

(page 31) is distributed by nursing to all patients at the initial consultation for radiation treatment and on the day of treatment for patients scheduled for Gamma Knife services. As an example of a daily routine and process, a dietitian will review the assessment survey and also attend Radiation Oncology weekly chart rounds to identify patients who need nutritional intervention as part of our interdisciplinary approach. Patients undergoing daily radiation therapy treatments are weighed by a nurse weekly. If a patient is found to have a five percent or greater change in weight, a referral is made to the dietitian.

The hematology and oncology private practice will also refer patients who need nutrition intervention. The practice has implemented the screening tool in the infusion center. Those patients who have nutrition impact symptoms due to their treatment or who are losing weight due to disease process will be seen by the dietitian. Follow-up consultations are done on an as-needed basis.

Outreach Opportunities

The outpatient oncology dietitian is part of our interdisciplinary approach to patient care and programming. For example, our nurse navigators work collaboratively with an outpatient dietitian to identify patients at risk and refer for nutrition care. The navigators also include an outpatient dietitian in community outreach talks to promote services and educate the community.

Our oncology outpatient dietitians have offered classes and food demonstrations on healthy eating in cooperation with our survivorship nurse practitioner and the cancer rehabilita-

tion program. To further extend the program's reach, we create opportunities to provide nutrition education beyond the four walls of the cancer hospital. For example, we offered a nutrition open house to showcase our services and provide information on healthy eating. The oncology dietitians attended a colon cancer forum and provided information on nutrition-impact symptoms to patients attending the conference. Our outpatient dietitians provide frequent community nutrition talks throughout the area to emphasize prevention and partner with our nurses during community health fair events. In addition, the oncology dietitians schedule meetings designed to educate the nursing staff in physician offices in the community about the hospital services available to patients. We are developing classes to be offered in conjunction with the various survivorship support groups that will address nutrition topics of interest and concern.

Patient Education Materials

Among the educational materials used by the Thomas Johns Cancer Hospital nutrition program are resources from the:

- National Cancer Institute, including Spanish versions
- American Cancer Society
- American Institute of Cancer Research
- Academy of Nutrition and Dietetics
- The Pancreatic Cancer Action network, including Spanish versions
- Recipes from the above-mentioned programs.

Case Study

A 66-year-old male was diagnosed with malignant neoplasm of the head and neck, stage TXN2. He was referred to our outpatient dietitians by the medical oncology physicians practice group for nutritional intervention. He was prescribed concurrent chemotherapy and radiotherapy. Anticipating an approximate 24-pound weight loss due to treatment side effects, a percutaneous endoscopic gastrostomy (PEG) tube was placed by the surgeon prior to the initiation of treatment.

Upon discharge the inpatient dietitian was consulted and collaborated on patient care with the outpatient dietitian. After reviewing the patient's nutritional self-assessment that was included in his new patient education packet in accordance with facility policy and procedure and attending chart rounds, the outpatient oncology dietitian planned and coordinated the patient's individual nutrition intervention plan and met with the patient. The dietitian counseled the patient on management of nutrition impact symptoms, including mouth care, fatigue, bowel regimen, nausea, hydration, taste alterations, and appetite challenges. The dietitian reviewed how to use his PEG and discussed goals for maintaining hydration and nutritional status during the course of treatment. Throughout the patient's treatment course, the dietitian reviewed medications that addressed his side effects and reinforced compliance. Follow-up visits were planned weekly and PRN nutritional intervention was established for the patient with nursing staff.

As expected with this particular treatment plan, the patient lost approximately 25 pounds and struggled with multiple nutrition impact symptoms. On his first follow-up visit, he had gained two pounds and was eating soft foods with a goal to remove his PEG tube. The dietitian successfully integrated the nutrition care plan for him with the multidisciplinary care team to effectively support the patient and ultimately allow him to remain as an outpatient and on his treatment schedule.

Thomas Johns Cancer Hospital has also developed its own resources for its tube-fed patients. As part of our disease-specific approach, we have developed patient education handbooks, which contain disease-site-specific nutrition sections drafted by our oncology dietitians.

Data Collection

A database, housed on a shared drive, is used to track patient self-assessment forms received and to compare these with the number of patients treated as a way to document the comprehensive approach and scope of the nutrition program. We also include the dietitian services on our radiation oncology survey that is provided to all patients after treatment as a means to measure satisfaction with the program. The outpatient dietitians keep daily consult logs that track diagnosis, physician, date of services, and intervention, and these are used to track which physicians are using nutrition services.

Moving forward, Thomas Johns Cancer Hospital is developing a navigation software built on its ARIA-Equicare Cancer Survivorship tool. This technology will incorporate a nutrition component to support the proactive management of nutrition services.

Bottom Line

Our outpatient nutrition program is funded by the hospital's general operations budget to support patient care-proven, evidence-based guidelines. As mentioned previously, we are using a PRN staffing model to minimize some of the cost associated with providing this service. We do not direct bill for the consultations and consider these services simply the cost of doing business or, even more important, simply doing what is right for comprehensive care for our patients and families. During recent surveys, The Joint Commission and American College of Surgeons provided great praise for this service.

Clinical benefits notwithstanding, there is always the need to demonstrate the financial return on investment (ROI). One indirect measure of ROI for the outpatient oncology nutrition services, beyond supporting our accreditation, is that we have found our key referring physicians place great emphasis on offering this valued service. For example, an ENT provider who serves both Thomas Johns Cancer Hospital and a competing healthcare system directs

to us all his head and neck cases for radiation therapy in large part because we offer this important service differentiator. His patients see our dietitian before surgery to prepare them for the pending procedure and following the course of treatment. In addition, the surgeon places value in knowing our radiation oncology nurses closely track the patients' weight for signs of change and that the dietitian's proximity makes early intervention possible. Because of these services, the department's profitable IMRT case mix has increased from 12 percent to 19 percent.

As a second example, we are fortunate to have a fellowship-trained surgical oncologist who focuses on offering complex Whipple surgical procedures. These cases carry with them high acuity. He orders all his patients to have a pre-surgery nutrition consultation.

Oncology care is a service of growing volumes with increasing expectations for improved quality care. We believe it is the responsibility of all oncology leaders to champion the integration of specialized nutrition services into their programs. This integration may be accomplished through dedicated full-time dietitians, PRN staff, or even a referral process outside the organization. A programmatic commitment to addressing the patients' need for these supportive care services is the foundation.

Virginia Vining, RD, is outpatient clinical oncology dietitian; Steven Castle, MBA, RT(T), is former oncology service line administrator with Thomas Johns Cancer Hospital at Johnston Willis Hospital; and Janis Nail, RD, is chief clinical dietitian at CJW Medical Center, Johnston Willis Hospital, in Richmond, Va.

References

- 1 Pituskin E, Fairchild A, Dutka J, et al. Multidisciplinary team contributions within a dedicated outpatient palliative radiotherapy clinic: a prospective descriptive study. *Int J Radiat Oncol Biol Phys.* 2010 Oct 1;78(2):P527-32.
- 2 Isenring E, Capra S, Bauer J. Patient Satisfaction is rated higher by radiation oncology outpatients receiving nutrition intervention compared with usual care. *J Hum Nutr Diet.* 2004 Apr;17(2): 145-52.

Nutritional Self Assessment



Patient Name _____ DOB ____ / ____ / ____ Patient Phone # _____

WEIGHT:

 In summary of my current and recent weight

I currently weigh about _____ pounds. I am about _____ feet and _____ inches tall.

Six months ago I weighed about _____ pounds.

One month ago I weighed about _____ pounds.

During the past two weeks my weight has: Decreased Increased Not changed.

FOOD INTAKE:

 As compared to my normal, I would rate my food intake during the past month

Unchanged More than usual Less than usual

I am now taking: Solid food Only liquids Only nutritional supplements

Very little of anything Nutritional supplements in addition to meals

My main meal preparation is done by:

Self Spouse Other Outside the home

SYMPTOMS:

 During the past 2 weeks I have had the following problems that keep me from eating enough:

(Check all that apply)

- | | |
|---|---|
| <input type="checkbox"/> No problems eating | <input type="checkbox"/> No appetite, just did not feel like eating |
| <input type="checkbox"/> Nausea | <input type="checkbox"/> Pain: (where) _____ |
| <input type="checkbox"/> Diarrhea | <input type="checkbox"/> Things taste funny or have no taste |
| <input type="checkbox"/> Dry mouth | <input type="checkbox"/> Constipation |
| <input type="checkbox"/> Mouth sores | <input type="checkbox"/> Vomiting |
| <input type="checkbox"/> Smells bother me | <input type="checkbox"/> Other: _____ |

FUNCTIONAL CAPACITY:

 Over the past month, I would rate my activity as generally:

- Normal with no limitations
 Not my normal self, but able to be up and about with fairly normal activities
 Not feeling up to most things, but in bed less than half the day
 Able to do little activity and spend most of the day in a chair or bed
 Pretty much bedridden, rarely out of bed

ARE YOU CURRENTLY RECEIVING: Chemotherapy Radiation Therapy Both

Have you received either chemotherapy or radiation therapy in the past? Yes No

If so, what type of treatment? _____

When? _____

DO YOU TAKE ANY OF THE FOLLOWING:

 (If yes, please list names/products)

- | | |
|---|--|
| <input type="checkbox"/> Pain medication | <input type="checkbox"/> Antinausea |
| <input type="checkbox"/> Antacid | <input type="checkbox"/> Antidiarrheal |
| <input type="checkbox"/> Alternative meds/therapies | <input type="checkbox"/> Others: _____ |

Dietitian Signature _____ Date _____

Scheduled Consult Date and Time _____ Patient Diagnosis _____

Innovative Outpatient Nutrition Services

Presbyterian Cancer Center, Presbyterian Hospital

by Mary A. Holland, MPH, RD, LDN, CSO, and Michelle M. Ray, MS, RD, LDN, CSO

In 1987 Presbyterian Cancer Center was developed to become a Comprehensive Cancer Center and nutrition services were recognized as being significantly important for survivorship. Spearheading the effort was Lynn Erdmann, RN, then director of the Cancer Center.

The goal of our nutrition services program is to provide nutrition support through symptom and weight management to improve each survivor's quality of life throughout his or her cancer journey. (Note: By "survivor" we mean those in any stage of cancer treatment or recovery—from time of diagnosis throughout their journey.)

Today, outpatient oncology nutrition services are a part of the Prevention, Education, and Early Detection Department at Presbyterian Cancer Center. Our oncology nutrition services are currently available for any adult survivor. Outpatient nutrition services are staffed by two registered dietitians who are board-certified Specialists in Oncology Nutrition (CSOs). The majority of Presbyterian Cancer Center's outpatient dietitian services are funded by the hospital's operational budget.

Outpatient Nutrition Services in Two Locations

One dietitian provides outpatient nutrition services at the Presbyterian Hospital Cancer Center. The cancer center-based dietitian sees survivors in a variety of settings, including patients receiving outpatient radiation therapy, patients receiving outpatient chemotherapy, and patients seen in the Multidisciplinary Second Opinion Oncology Clinics.

A second outpatient oncology dietitian is located at Presbyterian Cancer Center's off-campus Cancer Rehabilitation & Wellness *Strides to Strength*™ program. Presbyterian Cancer Center has a comprehensive referral form (see page 26) that providers at the cancer center and affiliated physicians can use to refer survivors for outpatient nutrition services at Presbyterian Cancer Rehabilitation & Wellness. This process streamlines access to the oncology dietitian for both survivors and providers. Approximately 20 hours per week



Oncology dietitian Michelle M. Ray, MS, RD, LDN, CSO, sees patients at Presbyterian's *Strides for Strength* program.

of this dietitian's time are dedicated to outreach and nutrition education of underserved women in the community. This effort is funded by a grant from Avon for breast cancer prevention and education.

The outpatient oncology dietitian provides nutrition education in the greater Charlotte community at various locations, including churches, community centers, community health clinics, and affiliated hospitals.

The dietitians attend various cancer committee and advisory and tumor board meetings as part of the multidisciplinary approach to patient care and programming.

Streamlined Access to Nutrition Services—for Patients and Providers

Nutrition services at Presbyterian Cancer Center are structured so that wherever survivors are in their cancer journey, they will have convenient access to the oncology dietitians. All adult survivors participating in the Multidisciplinary Clinics, outpatient radiation, outpatient chemotherapy, and *Strides to Strength* or patients who come to us by physician referral are asked to complete a one-page nutrition questionnaire that is adapted from the PG-SGA (page 27).

The oncology dietitian then scores the questionnaire and assesses the survivor's nutrition risk. Survivors screened and identified at high risk are monitored closely throughout treatment.

At the start of treatment, survivors may not experience any side effects or weight issues, but as treatment progresses this situation may suddenly change as cancer-treatment-related fatigue sets in or the patient begins to experience weight loss. Being onsite at the cancer center allows the oncology dietitian opportunities to meet survivors face to face and facilitates prompt access to nutrition services. It is always easier to prevent malnutrition than to reverse it, and streamlined access to nutrition services promotes better care.

The oncology dietitian works closely with nursing staff in the cancer center to help identify survivors who've had a significant weight loss (5 percent loss from the start of treatment or 10 pound increments). For example, the dietitian provides nurses in the radiation oncology area with a nutrition note card—a reminder that patients experiencing a 10-pound weight loss need an automatic referral to the oncology dietitian. Nursing staff simply attach the cards to their computer for quick reference.

Survivors are screened for malnutrition when they begin treatment or once a consult is received, and again at any time they experience a significant weight loss or symptoms that prevent good nutrition. Some survivors receive a MedGem analysis [MedGem is a handheld device that measures resting metabolic rate (RMR) and oxygen consumption (VO_2)] and/or a three-day food diary analysis to enhance the assessment and recommendations. Survivors are educated on symptom management, enteral nutrition (if needed), weight management, healthy eating, and cancer prevention. The cancer center dietitian also has opportunities to talk to survivors about the *Strides to Strength* program at Cancer Rehabilitation and Wellness.

Proactively Managing Fatigue

Strides to Strength is a multidisciplinary cancer wellness and fatigue management program initiated by Presbyterian Cancer Center in 2000. The program, which is provided to adult cancer survivors by referral, integrates exercise, education, nutrition, and supportive care into a medically managed program. In 2007 the *Strides to Strength* program became part of Presbyterian Cancer Center's Cancer Rehabilitation and Wellness department. Today, the program is located in a stand-alone building one block from the Presbyterian Charlotte campus. The onsite oncology dietitian is available to *Strides to Strength* participants and also as an "on-call" dietitian for Presbyterian providers.

Participants in the *Strides to Strength* exercise classes (held on Tuesdays and Thursdays) weigh in each day. The oncology dietitian will talk to survivors before class, after class, and even while they are on an exercise bike or treadmill. Having regular face-to-face contact with survivors makes access to nutrition services more convenient.

The outpatient oncology dietitians provide one-on-one counseling, group education classes, and occasionally give presentations in the community. We use educational materials targeted to the survivor's needs to reinforce the

advice and education. These resources include, but are not limited to, brochures and handouts from the Academy of Nutrition and Dietetics, AICR, NIH, and ACS. We also have created a few handouts with information and research gathered from many sources including those mentioned above.

Nutrition supplement samples are provided for survivors that may benefit from additional calories and/or protein. We occasionally have survivors that are not able to eat or are not meeting their needs with eating food by mouth. Those survivors usually require tube feedings (enteral nutrition). For these survivors, we recommend, educate, and order the appropriate enteral nutrition to help them meet their nutrition goals.

Putting Survivors First

For patients in active treatment, scheduling additional visits to the cancer center can be a burden. The outpatient nutrition services at Presbyterian Cancer Center strives to reduce this barrier by offering patients phone consultations and follow-up by email. Face-to-face meetings are preferred, but the cancer center's outpatient nutrition services recognize that such meetings can sometimes be a burden for survivors for a variety of reasons, including transportation issues, work schedules, and other barriers. In these situations, the oncology dietitian can



Onsite oncology dietitians facilitate prompt access to nutrition services

provide an initial consult by phone and follow-up with the survivor by email. Currently, the outpatient dietitians are collecting data on measuring RMR via MedGem for head and neck cancer survivors going through radiation and survivors starting our *Strides to Strength* program. We track our data using Excel spreadsheets to gather percentages and ratios that we are documenting for our survivors.

We track data for quality improvement each year related to assessing survivors' satisfaction with nutrition services, such as, for example, the effectiveness of nutrition counseling over the phone.

Mary A. Holland, MPH, RD, LDN, CSO, is oncology dietitian with Presbyterian Cancer Center and Michelle M. Ray, MS, RD, LDN, CSO, is oncology dietitian at the Presbyterian Cancer Center's Cancer Rehabilitation and Wellness Center, in Charlotte, N.C.

Presbyterian Cancer Center is a hospital-based comprehensive community cancer program located in Charlotte, N.C. One of the largest cancer centers in the Carolinas, Presbyterian Cancer Center provides sophisticated diagnostic and treatment services while also caring for the emotional, spiritual, and physical challenges faced by survivors. Program components of Presbyterian Cancer Center include disease-site-specific second opinion multidisciplinary oncology clinics and conferences, navigation services, genetic counseling, nutrition counseling, psychosocial counseling, case management, supportive care services, and cancer rehabilitation and wellness services including the *Strides to Strength*[™] exercise and fatigue management program, yoga, and massage.

- Hospital bed size: 622
- New analytic cases in 2009: 2,624
- Accreditations: ACoS Comprehensive Community Cancer Program; NAPBC, The Joint Commission

Comprehensive Oncology Referral Fax completed Form and Records to: _____
 Phone: _____

INCLUDE IN YOUR FAX: MD OFFICE NOTES, COPY OF FRONT/BACK INSURANCE CARD(S), DEMOGRAPHICS SHEET, PATHOLOGY AND RADIOLOGY REPORTS
 These identified referrals need a Physician's signature to be recognized as an order.

Name: _____ Dx: _____ Date: _____
 DOB: _____ Preferred Phone: (h) _____ (c) _____
 Referred by: _____ Phone: _____ Fax: _____

MEDICAL REFERRAL

Cancer Navigator Phone: _____ <input type="checkbox"/> Breast <input type="checkbox"/> GI/GU <input type="checkbox"/> Thoracic <input type="checkbox"/> Other Tumor site: _____	<input type="checkbox"/> New diagnosis <input type="checkbox"/> Pre-surgery Patient has questions about: <input type="checkbox"/> Chemo <input type="checkbox"/> Radiation <input type="checkbox"/> Post-surgery <input type="checkbox"/> Survivorship issues/Support <input type="checkbox"/> Recurrence/relapse <input type="checkbox"/> Other: _____
---	---

Multidisciplinary Oncology Clinic Phone: _____	► MDOC Referral-Call directly to _____ Fax records to _____ ► Conference Cases-Call directly to _____ Fax records to _____
--	---

Cancer Research Phone: _____	<input type="checkbox"/> Breast <input type="checkbox"/> Thoracic <input type="checkbox"/> GI <input type="checkbox"/> GU <input type="checkbox"/> Leukemia <input type="checkbox"/> Lymphoma <input type="checkbox"/> MDS <input type="checkbox"/> Multiple Myeloma <input type="checkbox"/> Brain <input type="checkbox"/> Melanoma <input type="checkbox"/> GYN <input type="checkbox"/> Young adults/peds <input type="checkbox"/> Other: _____
--	---

Supportive Oncology Phone: _____	Consultation for: _____
--	-------------------------

Hospice & Palliative Care Phone: _____	<input type="checkbox"/> Palliative Care and Symptom Management <input type="checkbox"/> Hospice <input type="checkbox"/> Advanced Directives
--	--

ANCILLARY REFERRAL

Psychosocial Oncology/ Buddy Kemp Cancer Support Center Phone: _____	<input type="checkbox"/> Individual and/or Family Counseling <input type="checkbox"/> Support Groups <input type="checkbox"/> Depression <input type="checkbox"/> Medication Assistance <input type="checkbox"/> Program & Resource Orientation <input type="checkbox"/> Patient Advocate (needs insurance, disability, other financial needs) <input type="checkbox"/> Transportation <input type="checkbox"/> Wigs/Prosthetics <input type="checkbox"/> Community Programs <input type="checkbox"/> Resource Library <input type="checkbox"/> Other: _____
--	--

Rehabilitation Wellness Phone: _____	* <input type="checkbox"/> Physical Therapy (evaluate and treat) * <input type="checkbox"/> Occupational Therapy (evaluate and treat) * <input type="checkbox"/> Speech Therapy (evaluate and treat) * <input type="checkbox"/> Lymphedema Clinic (evaluate and treat) <input type="checkbox"/> Lymphedema Risk Reduction Class <input type="checkbox"/> Nutrition Services * <input type="checkbox"/> Strides to Strength <input type="checkbox"/> Yoga <input type="checkbox"/> Therapeutic Massage <input type="checkbox"/> Symptom(s): _____
--	---

Fertility Preservation Phone: _____	* <input type="checkbox"/> Consultation with REACH
---	--


Ostomy Care Nurses Phone: _____	* <input type="checkbox"/> Outpatient Ostomy Care issues
---	--

Genetic Counseling Phone: _____	<input type="checkbox"/> Genetic Counseling and Testing ► Guidelines for genetic testing on back of form
---	---

Cancer Prevention Phone: _____	<input type="checkbox"/> Smoking Cessation <input type="checkbox"/> Contact referring physician for contraindications
--	--

Discussed with patient the above referred services: Yes No Interpreter Services needed: Yes No
 Concerns I may have: _____

Physician/Healthcare Providers Signature: _____ Date: _____ Time: _____
 Physician/Healthcare Provider Name (print): _____

 Comprehensive Oncology Referral <small>75754 11/24/2009 PC0020 © Presbyterian Cancer Center. All rights reserved.</small>	Name/MR#/Label
---	----------------

Nutrition Questionnaire

- Cancer Rehabilitation and Wellness Outpatient Chemotherapy Radiation Oncology
- Multidisciplinary Oncology Clinics Physician Referral *Strides to Strength*

Please answer each question for the check response that applies to you.

Date: _____ Name: _____

Date of Birth: _____ Age: _____ Diagnosis: _____

Race: _____ Gender: M / F Insurance Provider: _____

Address: _____

Phone: (H) _____ (W) _____

May we leave a message for you if you are not home? Yes No or at work? Yes No

Primary Care Physician: _____ Medical Oncologist: _____

Surgeon: _____ Radiation Oncologist: _____

1. WEIGHT: In summary of my current and recent weight

I am about _____ feet _____ inches tall.

Currently I weigh about _____ pounds.

Usually I weigh about _____ pounds.

Without trying to, I have had a **weight loss** of _____ pounds over the past _____ weeks **or** months _____ (*please circle*).

BMI = _____
RD to complete
SCORE – RD to complete

2. FOOD INTAKE: As compared to my normal food intake, I would rate my food intake during the past month as . . .

- Unchanged
- More than usual
- Less than usual (*if checked, please answer the following....*)

I am now taking:

- normal food but less than normal (1)
- little solid food (2)
- only liquids (3)
- only nutritional supplements (3)
- very little of anything (4)
- only tube feeding or only nutrition by vein (0)

SCORE – RD to complete

3. SYMPTOMS: I have had the following problems that have kept me from eating enough during the past two weeks

(*check all that apply*).

- | | |
|--|--|
| <ul style="list-style-type: none"> <input type="checkbox"/> no problems eating <input type="checkbox"/> no appetite, just do not feel like eating (3) <input type="checkbox"/> nausea (1) <input type="checkbox"/> constipation (1) <input type="checkbox"/> mouth sores (2) <input type="checkbox"/> things taste funny or have no taste (1) <input type="checkbox"/> problems swallowing (2) <input type="checkbox"/> other**(1) _____ | <ul style="list-style-type: none"> <input type="checkbox"/> vomiting (3) <input type="checkbox"/> diarrhea (3) <input type="checkbox"/> dry mouth (1) <input type="checkbox"/> smells bother me (1) <input type="checkbox"/> pain; where? _____ (3) |
|--|--|

SCORE – RD to complete

***Examples: depression, money, dental problems.*

TOTAL SCORE:

(To be calculated by RD)

In signing my name below, I agree to have the above information faxed and disclosed to the Oncology Nutrition Specialist at the Presbyterian Cancer Center for evaluation at _____.

Patient Signature: _____ **Date:** _____

Patient Signature not necessary due to form being completed by RD/RN with the patient.



Growing an Oncology Nutrition Program

Mission Hospital

by Karen Grogan, RN, MHA, MSOM, OCN, CENP, and Jeffrey Whitridge, RD, CSO, LDN

The oncology nutrition program at Mission Hospital started over a decade ago. Implementation and growth of Mission's oncology nutrition program has been a strong team effort with Jeffrey Whitridge, RD, CSO, LDN, as the program's primary champion.

The program began in response to a simple request from the dedicated nursing staff in radiation therapy to the inpatient clinical nutrition team to assist in the management of high nutrition-risk patients undergoing radiation therapy. Initially, the program's focus was site specific in terms of head and neck, lung, colorectal, and pelvic radiation therapy patients. The current oncology nutrition services program has broadened to include all treatment sites, treatment modalities, and curative or palliative outcomes to better meet the care planning needs of each patient. The program's development is a result of collaboration between departments inside and outside the oncology service line that include

The Breast Center, Cancer Research, Clinical Nutrition, Medical Oncology, Oncology Nursing, Patient Navigation, Radiation Therapy, and Rehabilitation Services.

Program Goals

The primary goal of the oncology nutrition program at Mission Hospital is to improve patient outcomes, quality of life indicators, and the well-being of the oncology patient population in Western North Carolina. A key component in achieving that goal is to highlight the nutrition aspects of prevention, treatment, survivorship, and palliative care in relation to the disease continuum of the individual oncology patient. The oncology nutritional program is primarily

supported through the operational budget of Mission Hospital's Food and Nutritional Services. In addition Mission Healthcare Foundation provides financial support for events such as the "Eating for Survivorship" cooking demonstration for the community, as well as at Camp Bluebird, a biannual adult cancer survivorship camp that focuses on improving self-care and lifestyle skill sets of the cancer survivor.

Needs Assessment Shapes Growth

A needs assessment conducted in 2006 identified that 63 percent (or nearly two-thirds) of the oncology patient population met or generated a nutrition-risk criteria prior to starting radiation therapy. This needs assessment has helped shape the direction and scope of the oncology nutrition program at Mission Hospital.

A preliminary weight study was conducted in January 2006 by oncology dietitian Jeffrey Whitridge to provide a review of the oncology nutrition program and identify areas of opportunity and process improvement. The study found that 45 percent of the male population and 48 percent of the female population would lose weight during their radiation therapy treatment course. Radiation oncology physicians identified involuntary weight loss in 24 percent of the patient population prior to starting treatment. In addition, dedicated oncology nurses in radiation therapy were able to identify that another 39 percent of the oncology patient population met or generated a nutrition risk-criteria prior to treatment start.

In response to this needs assessment, improvements in the oncology nutrition program have included initial and ongoing malnutrition screening for patients receiving radiation therapy—regardless of treatment site—using an evidence-based malnutrition screening tool. The tool was first developed and validated by Ferguson and colleagues in 1999 with a specific focus on patients receiving radiation therapy.¹ In 2010 Leuenberger and colleagues reviewed multiple nutrition screening tools specific to the oncology patient and



Mission SECU Cancer Center, Asheville, N.C.



determined the validity and accuracy of the malnutrition screening tool, as well as the Patient-Generated Subjective Global Assessment (PG-SGA) (page 31).²

When a patient is identified as at nutrition risk, a referral is made to a registered dietitian (RD) specializing in oncology nutrition. Even if nutrition-risk criteria are not met, patients may also self-refer to the oncology RD.

The RD performs an individualized, comprehensive nutrition assessment based on disease-site-specific information, plan of care, and course of treatment with the goal of limiting treatment side effects and aiding in symptom management.

While the patient population served by the oncology nutrition program continues to be primarily those undergoing radiation therapy for head and neck, lung, colorectal, and pelvic cancers, all patients receiving radiation therapies can access nutrition services regardless of their disease site, treatment course, or intent of treatment—curative or palliative. For example, the oncology nutrition program at Mission Hospital can offer the breast cancer survivor population education on lifestyle interventions that focus on behavior modification to improve eating and exercise skill sets for patients receiving radiation therapy and highlight survivorship goals around weight status and weight management.

Staffing

Currently, the oncology nutrition program is staffed by a FTE registered and licensed dietitian and nutritionist (RD, LDN) with a certified specialization in oncology nutrition (CSO). The oncology RD is also a member of the Academy of Nutrition and Dietetics (AND) Oncology Nutrition Dietetic Practice Group (ON DPG).

The oncology nutrition program at Mission Hospital is an integral part of the multidisciplinary care on the inpatient oncology unit, in addition to the outpatient cancer center services. The oncology RD is a required, integral member of the Cancer Committee and attends monthly multidisciplinary Cancer Committee and Steering Com-

mittee meetings as part of the multidisciplinary approach to patient care and programming.

Malnutrition Screening Process

All patients receiving radiation therapy complete an initial patient self-assessment that incorporates the malnutrition screening referenced previously, an easy-to-complete, evidence-based tool that quickly identifies a patient's malnutrition risk via nursing screening. Those patients that do not generate a nutrition-risk criteria at the time of their initial assessment receive ongoing weekly nutrition screening by a radiation oncology nurse via the malnutrition screening tool to identify nutrition-risk criteria during their treatment course and for dietitian consult and intervention.

Mission Hospital has implemented the malnutrition screening tool system-wide to identify patients that generate a malnutrition risk at any point of entry in terms of accessing healthcare. Therefore, the outpatient infusion center is another avenue of consultation for the registered dietitian to intervene for patients receiving chemotherapy. Patients that generate a malnutrition risk are scheduled for a dietitian consult.

Interventions & Education

Patient nutrition education is customized based on an individual nutrition assessment. The oncology nutrition program uses symptom management educational materials that have been developed by AND and ON DPG. When additional resources are needed, the education council at Mission Hospital lends its support in the development and implementation of new nutrition education materials, e.g., development of our home tube-feeding handout. The dietitian also has online access to AND's Nutrition Care Manual with education material available for use in PDF format. The oncology service line has developed a cancer survivor manual, entitled *Taking Charge*, which includes nutrition symptom management handouts. Also available are education materials from the National Cancer Institute and the American Cancer Society.

Case Study

A 71-year-old male was diagnosed with a Stage IVA (T1N2bMO) squamous cell carcinoma (SCC) of the right base of his tongue (R-BOT). A nutrition consult was automatically placed to the clinical dietitian/nutritionist by the radiation therapy nursing staff for the patient's head and neck cancer diagnosis. Along with his admitting diagnosis, the patient's past medical history includes coronary artery disease, hypertension, gastrointestinal esophageal reflux disease, benign prostate hypertrophy and prostate cancer, previously received radiation therapy without recurrence.

The patient's anthropometric data at the time of his nutrition assessment was 67"/170 cm and 198#/90.27 kg or 134% of his ideal body weight and a body mass index of 31.2 kg/m² placing him in a class 1 obesity category. His nutrition needs were estimated between 1,800 and 2,250 calories and 90 to 113 grams of protein per day or 20 to 25 calories and 1.0 to 1.3 grams protein per kilogram body weight.

It was determined that the patient's treatment course would include 35 fractions of radiation therapy over 7 weeks with weekly platinum-based chemotherapy. Anticipated side effects of his treatment course would include decreased oral intake, odynophagia, dysphagia, changes in taste and smell, thick secretions, and fatigue. Therefore, the patient agreed to have a prophylactic feeding tube placed at the start of his treatment course. Ongoing monitoring and evaluation took place throughout his treatment course at the time of feeding-tube placement and weekly intervals. The patient was able to demonstrate via a teach-back method of learning his need to maintain his weight status through adequate calories, protein, fluid or hydration status, oral care, and a home tube-feeding plan of care. In the end, the patient met his goals without any scheduled treatment breaks and minimal weight loss.

Mission Hospital, a not-for-profit community hospital, is the regional medical referral center for western N.C., serving an area of nearly 10,000 square miles in Southern Appalachia. Access to care in this mountainous region is often difficult, especially for the large numbers of rural residents who face economic challenges, as well as transportation and communication barriers. A new 118,000-square-foot outpatient comprehensive cancer center opened in November 2011 on the Mission Hospital campus. In 2010 Mission had 32,341 cancer-related outpatient visits. New analytic cancer cases in 2010 (adult and pediatric): 2,515. Accreditations include ACoS, ACR, The Joint Commission, and NAPBC.

Outreach Efforts

The oncology nutrition program dietitian participates in a variety of community outreach efforts, including monthly lectures within two local medical oncology offices to review a series called "Eating for Treatment and Eating for Survivorship" and has provided quarterly lectures, focused on survivorship lifestyle skill sets through nutrition, exercise, and weight management, to the breast cancer support group. Semi-annual cooking and healthy eating demonstrations are held at Camp Blue Bird, a dedicated program for cancer survivors. These cooking demonstrations focus on survivorship guidelines that promote and enhance lifestyle change through nutrition. Annual presentations have been made to the Western North Carolina Cancer Survivorship Summit focusing on lifestyle changes through nutrition and the cancer survivor.

Today and Tomorrow

A needs assessment at Mission Hospital identified that 63 percent (or nearly two-thirds) of the oncology patient population meets or generates a nutrition risk criteria prior to starting radiation therapy. Using the evidence-based malnutrition screening tool, each patient receiving radiation therapy and/or chemotherapy completes a self assessment. When a nutrition risk is identified, the oncology-certified RD conducts a full nutritional risk assessment. An individualized education and intervention plan is then developed with the patient and the multidisciplinary care team. Regular

follow-up and reassessment occurs to improve patient outcomes, quality of life indicators, and the well-being of the oncology patient. Highlighting the nutritional aspects of prevention, treatment, survivorship, and palliative care in relation to the disease continuum of the individual oncology patient allows the patient to reach the larger goal of completing his or her desired treatment plan on schedule with minimal complications.

The next steps that are in place or nearing implementation include authorization to use the PG-SGA for triage and nutrition interventions along with AND's evidence-based tool kit. This tool kit provides site-specific nutrition practice guidelines and protocols tied to interventions that monitor, evaluate, and measure outcomes.

Once these pieces have been finalized and completed, the evidence-

based medical nutrition therapy will be able to generate outcome-based data.

A final step, based on the needs assessment, would be the development of specialty or site-specific clinics to provide oncology nutrition services. Within the new Cancer Center all patients will have access to nutrition support services; however, our program will continue to focus on high-nutritional-risk populations.

Karen Grogan, RN, MHA, MSOM, OCN, CENP, is executive director, Cancer and Infusion Services at Mission Hospital, Asheville, N.C. Jeffery Whitridge, RD, CSO, LDN, is a registered dietitian with a Certified Specialization in Oncology Nutrition at Mission Hospital, Asheville, N.C.

References

- 1 Ferguson ML, Bauer L, Gallagher B, et al. *Validation of a malnutrition screening tool for patients receiving radiotherapy.* Australian Radiology. 1999;43:325-327.
- 2 Leuenberger M, Kurman S, Stanga Z. *Nutritional screening tools in daily clinical practice: the focus on cancer.* Support Care Cancer. 2010;18(Suppl 12):S17-S27.



Oncology dietitian Jeffrey Whitridge, RD, CSO, LDN, (on L) provides follow-up with cancer patient.

Scored Patient-Generated Subjective Global Assessment (PG-SGA)

History (Boxes 1-4 are designed to be completed by the patient.)

1. Weight (See Worksheet 1)

In summary of my current and recent weight:

I currently weigh about _____ pounds

I am about _____ feet _____ tall

One month ago I weighed about _____ pounds

Six months ago I weighed about _____ pounds

During the past two weeks my weight has:

decreased ⁽¹⁾ not changed ⁽⁰⁾ increased ⁽⁰⁾

Box 1

Patient ID Information

2. Food Intake: As compared to my normal intake, I would rate my food intake during the past month as:

- unchanged ⁽⁰⁾
- more than usual ⁽⁰⁾
- less than usual ⁽¹⁾

I am now taking:

- normal food* but less than normal amount ⁽¹⁾
- little solid food ⁽²⁾
- only liquids ⁽³⁾
- only nutritional supplements ⁽³⁾
- very little of anything ⁽⁴⁾
- only tube feedings or only nutrition by vein ⁽⁰⁾

Box 2

3. Symptoms: I have had the following problems that have kept me from eating enough during the past two weeks (check all that apply):

- no problems eating ⁽⁰⁾
- no appetite, just did not feel like eating ⁽³⁾
- nausea ⁽¹⁾
- constipation ⁽¹⁾
- mouth sores ⁽²⁾
- things taste funny or have no taste ⁽¹⁾
- problems swallowing ⁽²⁾
- pain; where? ⁽³⁾ _____
- other** ⁽¹⁾ _____

** Examples: depression, money, or dental problems

Box 3

4. Activities and Function: Over the past month, I would generally rate my activity as:

- normal with no limitations ⁽⁰⁾
- not my normal self, but able to be up and about with fairly normal activities ⁽¹⁾
- not feeling up to most things, but in bed or chair less than half the day ⁽²⁾
- able to do little activity and spend most of the day in bed or chair ⁽³⁾
- pretty much bedridden, rarely out of bed ⁽³⁾

Box 4

Additive Score of the Boxes 1-4 A

<p>Worksheet 1 - Scoring Weight (Wt) Loss To determine score, use 1 month weight data if available. Use 6 month data only if there is no 1 month weight data. Use points below to score weight change and add one extra point if patient has lost weight during the past 2</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Wt loss in 1 month</th> <th>Points</th> <th>Wt loss in 6 months</th> </tr> </thead> <tbody> <tr> <td>10% or greater</td> <td>4</td> <td>20% or greater</td> </tr> <tr> <td>5-9.9%</td> <td>3</td> <td>10 -19.9%</td> </tr> <tr> <td>3-4.9%</td> <td>2</td> <td>6 -9.9%</td> </tr> <tr> <td>2-2.9%</td> <td>1</td> <td>2 -5.9%</td> </tr> <tr> <td>0-1.9%</td> <td>0</td> <td>0 -1.9%</td> </tr> </tbody> </table> <p>Numerical score from Worksheet 1 <input style="width: 50px;" type="text"/></p>	Wt loss in 1 month	Points	Wt loss in 6 months	10% or greater	4	20% or greater	5-9.9%	3	10 -19.9%	3-4.9%	2	6 -9.9%	2-2.9%	1	2 -5.9%	0-1.9%	0	0 -1.9%	<p style="text-align: right;">Additive Score of the Boxes 1-4 (See Side 1) <input style="width: 50px;" type="text"/> A</p> <p>5. Worksheet 2 - Disease and its relation to nutritional requirements</p> <p>All relevant diagnoses (specify) _____ One point each: <input type="checkbox"/> Cancer <input type="checkbox"/> AIDS <input type="checkbox"/> Pulmonary or cardiac cachexia <input type="checkbox"/> Presence of decubitus, open wound, or fistula <input type="checkbox"/> Presence of trauma <input type="checkbox"/> Age greater than 65 years <input type="checkbox"/> Chronic renal insufficiency</p> <p>Numerical score from Worksheet 2 <input style="width: 50px;" type="text"/> B</p>
Wt loss in 1 month	Points	Wt loss in 6 months																	
10% or greater	4	20% or greater																	
5-9.9%	3	10 -19.9%																	
3-4.9%	2	6 -9.9%																	
2-2.9%	1	2 -5.9%																	
0-1.9%	0	0 -1.9%																	

6. Worksheet 3 - Metabolic Demand
 Score for metabolic stress is determined by a number of variables known to increase protein & calorie needs. The score is additive so that a patient who has a fever of > 102 degrees (3 points) and is on 10 mg of prednisone chronically (2 points) would have an additive score for this section of 5 points.

Stress	none (0)	low (1)	moderate (2)	high (3)
Fever	no fever	>99 and <101	≥101 and <102	≥102
Fever duration	no fever	<72 hrs	72 hrs	> 72 hrs
Corticosteroids	no corticosteroids	low dose (<10mg prednisone equivalents/day)	moderate dose (≥10mg and <30mg prednisone equivalents/day)	high dose steroid (≥30mg prednisone equivalents/day)

Numerical score from Worksheet 3 **C**

7. Worksheet 4 - Physical Exam
 Physical exam includes a subjective evaluation of 3 aspects of body composition: fat, muscle, & fluid status. Since this is subjective, each aspect of the exam is rated for degree of deficit. Muscle deficit impacts point score more than fat deficit. Definition of categories: 0 = no deficit, 1+ = mild deficit, 2+ = moderate 3+ = severe

Muscle Status:	0	1+	2+	3+
temples (temporalis muscle)	0	1+	2+	3+
clavicles (pectoralis & deltoids)	0	1+	2+	3+
shoulders (deltoids)	0	1+	2+	3+
interosseous muscles	0	1+	2+	3+
Scapula (latissimus dorsi, trapezius, deltoids)	0	1+	2+	3+
thigh (quadriceps)	0	1+	2+	3+
calf (gastrocnemius)	0	1+	2+	3+

Fluid Status:	0	1+	2+	3+
ankle edema	0	1+	2+	3+
sacral edema	0	1+	2+	3+
ascites	0	1+	2+	3+

Global fluid status rating **0** **1+** **2+** **3+**

Global muscle status rating **0** **1+** **2+** **3+**

Fat Stores:
 orbital fat pads **0** **1+** **2+** **3+**
 triceps skin fold **0** **1+** **2+** **3+**
 fat overlying lower ribs **0** **1+** **2+** **3+**

Global fat deficit rating **0** **1+** **2+** **3+**

Clinician Signature _____ RD RN PA MD DO Other _____ Date _____

Numerical score from Worksheet 4 **D**

Total PG-SGA score
 (Total numerical score of A+B+C+D above)
 (See triage recommendations below)

Global PG-SGA rating (A,B, or C) =

Worksheet 5 - PG-SGA Global Assessment Categories

Category	Stage A	Stage B	Stage C
Weight	Well nourished No wt loss OR Recent wt gain	Moderately malnourished <5% wt loss in 1 month (or 10% in 6 mos) OR Progressive wt loss	Severely malnourished > 5% wt loss in 1 month (or >10% in 6 mos) OR Progressive wt loss
Nutrient intake	No deficit OR Significant recent improvement	Definite decrease in intake	Severe deficit in intake
Nutrition Impact Symptoms	None OR Significant recent improvement allowing adequate intake	Present of nutrition impact symptoms (PG-SGA Box 3)	Present of nutrition impact symptoms (PG-SGA Box 3)
Functioning	No deficit OR Recent improvement	Moderate functional deficit OR Recent deterioration	Severe functional deficit OR recent significant deterioration
Physical Exam	No deficit Chronic deficit but recent improvement	loss of muscle mass / SQ fat / muscle tone on palpation	Obvious signs of malnutrition (eg. severe loss muscle, SQ tissue, possible edema)

Nutritional Triage Recommendations: Additive score is used to define specific nutritional interventions including patient & family education, symptom management including pharmacologic intervention, and appropriate nutrient intervention (food, nutritional supplements, enteral, or parenteral triage).
First line nutrition intervention includes optimal symptom management.

Triage based on PG-SGA point score

0-1 No intervention required at this time. Re-assessment on routine and regular basis during treatment.
2-3 Patient & family educated by dietitian, nurse, or other clinician with pharmacologic intervention as indicated by symptom survey (Box 3) and lab values as appropriate.
4-8 Requires intervention by dietitian, in conjunction with nurse or physician as indicated by symptoms (Box 3).
≥ 9 Indicates a critical need for improved symptom management and/or nutrient intervention options.

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Commitment to Nutrition Services

North Puget Cancer Center at United General Hospital

North Puget Cancer Center, a 25-bed critical access facility, in Sedro Woolley, Wash., is committed to ensuring patients access to the services of a dedicated outpatient oncology registered dietitian.

The outpatient oncology dietitian position at North Puget Cancer Center started in June 2009. Currently, the outpatient oncology dietitian is on site in the cancer center on Mondays and Wednesdays. The hospital's inpatient dietitian is also available to see patients—typically high-risk or new patients—in the cancer center as her schedule permits.

On Monday mornings, the outpatient oncology dietitian attends the cancer center's weekly interdisciplinary team meetings (including cancer center physicians, the department director, medical oncology nursing staff, radiation oncology nursing staff, the social worker, the pharmacist, representatives from the financial office, and admissions staff) at which new patients are presented. If patients have an initial consult scheduled on Monday or

Wednesday, the oncology dietitian will try to see the new patient that same day. Otherwise, she follows up with patients on their return visit.

Close communication between nursing staff and the oncology dietitian are key in this program. Radiation oncology works closely with the dietitian, alerting her whenever there is a new consult. The dietitian has been able to see every new radiation oncology patient and continues to see these patients once a week while they are in active treatment. The program is proactive in terms of nutrition screening for head and neck patients.

Nursing staff will alert the dietitian to new patients coming to the center on the days she is not on site. If a patient has a nutrition problem such as swallowing issues, taste changes, GI symptoms, or weight loss that needs to

be addressed, nursing staff will ask the oncology dietitian to follow up with a phone call to the patient's home.

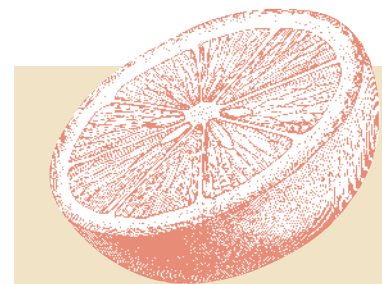
The outpatient dietitian works closely with the inpatient dietitian at United General Hospital to coordinate patient care across the different settings of care. If the patient should move to a long-term care facility, such as a skilled nursing facility, the outpatient dietitian will follow up with the new facility's dietitian. She also coordinates with home care company staff when patients are on tube feeding and TPN.

The cancer center uses Meditech EMR on the medical oncology side and MOSAIQ on the radiation oncology side. Both EMRs allow the oncology dietitian to chart nutrition notes electronically.

North Puget Cancer Center believes that offering oncology nutrition services is an important part of its program. The oncology dietitian works closely with the cancer center's social worker. "I try to work with patients to get their baseline nutrition information and find out what they have for family support and then continue to work with them. Some patients are cooking for themselves. Some don't have a lot of support. We've had people that we've referred for Meals on Wheels. We work as a team. I thoroughly enjoy working with oncology patients. This is where my heart is," said Margaret Griswold, RD, CD.

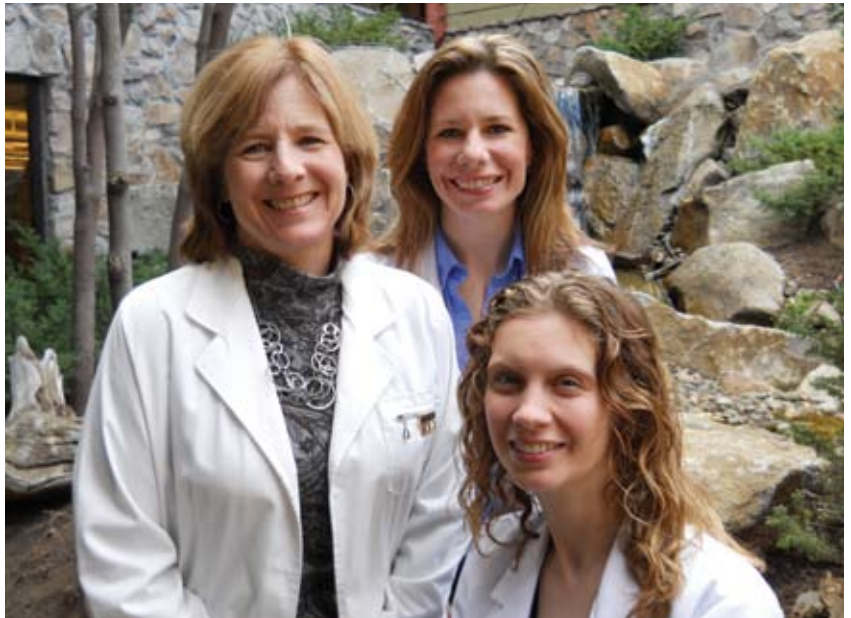


North Puget Cancer Center, Sedro Woolley, Wash.



Outpatient Nutrition Services at North Star Lodge Cancer Center

North Star Lodge, an outpatient oncology clinic of Yakima Valley Memorial Hospital Cancer Care Services, opened in 2000, in Yakima, Wash., and currently sees about 800 patients a year.



North Star Lodge's outpatient oncology dietitians (clockwise from L) Kim McCorquodale, RD, CSO, CD; Lena Gill, RD, CSO, CD; and Carli Hill, RD, CSO, CD



Services provided include medical oncology, radiation oncology, hematology, supportive care services, such as psycho-social services, nutrition services (including a complimentary oral supplement program supported by grant funding), and a variety of complementary and support program offerings.

Outpatient nutrition services have been a component of North Star Lodge since the clinic's inception. Outpatient oncology nutrition services are provided by a 1.8 FTE oncology dietitian position. Three registered dietitians with CSO certification work as a team to cover this service. One dietitian is scheduled for 32 hours per week, and two additional dietitians work 20 hours per week. Typically, the program will have two dietitians at the cancer center for three days of the week, and one dietitian on site for the remaining two days.

The nutrition services department completes all nutrition screening and reassessment following established protocols. The outpatient oncology dietitians write notes that are included in the EMR for every patient with whom

they have contact—whether it's for an initial screening, reassessment, referral, providing counseling on the phone or in person, or mailing information. North Star Lodge is currently investigating a software program that would provide fields devoted to nutrition information and make charting much less time consuming.

The oncology dietitians at North Star Lodge contribute to a regular nutrition blog on the cancer center's website. Recent blog topics include: "New Year! Healthier You!," "Health Benefits of Curcumin," and "You are What you Eat."

Another way in which the North Star Lodge oncology dietitians contribute to quality multidisciplinary care is through participation in such efforts as the development and implementation of a new Androgen Deprivation Therapy protocol at the cancer center. The hope is that through a multidisciplinary approach including nutrition, risk factors for side effects of Androgen Deprivation Therapy, such as weight gain, loss of muscle mass, increased insulin resistance, increased cardiovascular risk, and osteoporosis, can be reduced.

What's Cooking? Nutrition Services @ Cancer Wellness

Piedmont Cancer Center's holistic approach

Launched in 2007, Cancer Wellness at Piedmont offers comprehensive complementary services and programs for anyone affected by cancer at any phase in his or her cancer journey.

Located in the freestanding Piedmont Outpatient Cancer Center, a short distance from Piedmont Hospital in Atlanta, Ga., the Cancer Wellness space is designed to create a warm, inviting, non-clinical atmosphere in which patients with cancer can access a wide range of supportive care services, including:

- Educational programs
- Classes on relaxation and stress reduction, movement and exercise, expressive arts, and meditation
- Support groups
- Individual nutritional and psychological counseling
- Cooking demonstrations
- Social events.

At the heart of the Center is the Wellness Café, a fully equipped professional teaching kitchen with state-of-the-art appliances, specifically designed for cooking demos, tastings, and social functions.

Oncology dietitian Shayna Komar, RD, LD, provides consultation services by appointment not only to patients at Piedmont Hospital but to any oncology patient in the community. The outpatient oncology dietitian sees individual clients for 45-minute nutrition sessions. She assists their dietary needs using medical nutrition therapy protocols that have been developed by the Academy of Nutrition and Dietetics Oncology Nutrition Dietetic Practice Group. Clients are seen before, during, and after treatment for cancer. These services are provided free of charge, thanks to generous philanthropic support.

In addition to individual nutrition counseling, Cancer Wellness presents

live cooking demonstrations by the Center's dietitian, chef Nancy Waldeck, and other local chefs. The nutrition services, and in particular the cooking classes, are seen as an important part of the healing process because they focus on giving patients "hands on" lessons to put the nutrition knowledge they are receiving into practice in their own home kitchens. The Wellness Café not only provides a welcoming presence, it helps empower patients who may be feeling out-of-control in terms of taking charge of their health. Cooking is a familiar skill that they can use to live well and eat better. Participants leave their Wellness Café classes with practical information they can put to use every day, including recipes and techniques for eating well. Wellness Café classes emphasize realistic everyday eating that is delicious, healthy, and attainable for all with a special focus on cancer-specific nutrition needs.

Classes are developed by the oncology dietitian and, occasionally, by guest chefs and other facilitators. Participants sign up for cooking classes by phone. Classes vary in size from 15 to 50 participants. Wellness Café classes may center on new research, questions from the community, or classes that combine food and a complementary care offering at the Center. For example, in the past year the Wellness Café has offered:

- *Chinese Herbs and Cooking* with a chef and the Cancer Wellness program's acupuncturist
- *Taking Care of Yourself for the Holidays* with a chef and the Mindfulness Meditation facilitator
- *The Annual Community Drum Circle of Thankfulness* with a chef and a facilitator.



Chef Nancy Waldeck teaching in the Wellness Café.

Each of these programs is enriched by good food and the community coming together at the table.

The Wellness Café is at the center of the Cancer Wellness program, bringing people affected by cancer together to share a healthy meal and fellowship with other survivors and caregivers. Cancer Wellness at Piedmont offers hope, care, companionship, and practical education to make the lives of survivors better, said Carolyn Helmer, LCSW, manager, Cancer Wellness.

Outpatient Nutrition Services at Tunnell Cancer Center

The Tunnell Cancer Center at Beebe Medical Center in Lewes, Del., has employed an outpatient oncology dietitian since 1999. Currently, a registered dietitian with CSO certification is scheduled in the cancer center four days a week, and in the main hospital, one day per week. When at the hospital, the dietitian is responsible for a floor and does not work solely with oncology patients. She also participates in weekend clinical rotation.

At the Tunnell Cancer Center, nutritional screening is done by the nurse and the patient during the patient's first visit to the cancer center. The oncology dietitian reviews the completed forms once daily and completes the patient's screening, determining whether the patient is at high or low risk for malnutri-



Tunnell Cancer Center's outpatient oncology dietitian Kim Westcott, RD, CSO.

Two primary goals of the cancer center's outpatient oncology nutrition services are for patients not to lose an excessive amount of weight and for their protein stores to remain intact.

tion. As a part of the review process, the dietitian looks at the patient's albumin and prealbumin level, % IBW, BMI, the chemotherapy agent(s) the patient will receive, if any, and/or what area of the body will receive radiation therapy, if that is the course of treatment. Two primary goals of the cancer center's outpatient oncology nutrition services are for patients not to lose an excessive amount of weight and for their protein stores to remain intact.

With screenings complete, the oncology dietitian then tries to see all high-risk patients at their next visit to the cancer center to complete a

nutritional assessment and provide education and nutritional counseling. All head and neck patients are automatically categorized as high risk.

The oncology dietitian also tries to make contact with all new patients in both the infusion area and the radiation oncology area. Patients who are receiving both chemotherapy and radiation therapy are seen weekly.

Tunnell Cancer Center's outpatient oncology dietitian works closely with nursing staff. At each visit to the cancer center, patients are weighed and asked a series of questions related to their nutrition status, so the nurse is often the first to know if a patient is having significant nutrition-related problems. Because the oncology dietitian is on site, if a consult is requested, she can see the patient that same day.

The outpatient oncology dietitian also helps facilitate coordination of nutrition services across care settings. She reviews the inpatient list daily and if a patient she is following has been admitted, she will call the clinical RD covering the floor. This follow-up is especially helpful when the patient is receiving tube-feeding. The clinical registered dietitians will also alert the

outpatient oncology dietitian when they know that a patient they've been working with will be coming to the cancer center.

Many patients are not only undergoing cancer treatment but also have diabetes and/or heart disease. The oncology dietitian often discusses principles of diabetic meal planning and refers patients to the hospital's diabetes educator when appropriate.

Future plans at Tunnell Cancer Center include development of a cancer survivorship plan. Going forward, the oncology dietitian's role will likely expand to working with survivors to help them be well—with healthy eating playing an important part in maintaining good health.

Resources



Professional Resources

Cancer Prevention—Diet, Nutrition, and Physical Activity

- World Cancer Research Fund and the American Institute for Cancer Research. *Food, Nutrition, Physical Activity, and the Prevention of Cancer: A Global Perspective*. Washington, DC: American Institute for Cancer Research; 2007. Available online at: www.dietandcancerreport.org/expert_report/.
- Kushi LH, Byers T, Doyle C, Bandera EV, et al. and the American Cancer Society. Nutrition and physical activity for cancer prevention: reducing the risk of cancer with healthy food choices and physical activity. *CA Cancer J Clin*. 2006;56:254-281. Available online at: <http://CAonline.AmCancerSoc.org>.

Cancer Survivors—Nutrition and Physical Activity

- Doyle C, Kushi LH, Byers T, Courneya KS, et al. Rock CL, Thompson C, Gansler T, Andrews KS and the 2006 Nutrition, Physical Activity and Cancer Survivorship Advisory Committee. Nutrition and physical activity during and after cancer treatment: an American Cancer Society guide for informed choices. *CA Cancer J Clin*. 2006; 56:323-353. Available online at: <http://caonline.amcancersoc.org/cgi/rapidprint/56/6/323>.
- Grant BL, Bloch AS, Hamilton KK, Thomson CA. *American Cancer Society's Complete Guide to Nutrition for Cancer Survivors*. 2nd ed. Atlanta, GA: American Cancer Society; 2011. ISBN: 978-0944235782.

Evidence-Based Oncology Practice

- Eaton LH, Tipton JM. *Putting Evidence into Practice: Improving Oncology Patient Outcomes*. Pittsburgh, PA: Oncology Nursing Society; 2009. ISBN: 978-890504847.
- Elliott L, Kiyomoto-Kuey DE. *Oncology Toolkit: Oncology Nutrition Evidence-Based Nutrition Practice Guidelines*. Chicago, IL: American Dietetic Association; 2010. Available online at: <https://www.adaevidencelibrary.com/store.cfm?category=1&auth=1>.

tion; 2010. Available online at: <https://www.adaevidencelibrary.com/store.cfm?category=1&auth=1>.

Oncology Nutrition Reference Books and Textbook Chapters

- Elliott L, Molseed LL, McCallum PD, Grant B. *The Clinical Guide to Oncology Nutrition*. 2nd ed. Chicago, IL: American Dietetic Association; 2006. ISBN: 978-0880913393.
- Grant B, Hamilton KK. Medical nutrition for cancer prevention, treatment, and recovery. In: Mahan LK, Escott Stump S, Raymond JL, eds. *Krause's Food and the Nutrition Care Process*. 13th ed. St. Louis, MO: Elsevier and Saunders; 2011. ISBN: 141603334013.
- Kogut V, Luthringer S. *Nutrition Issues in Cancer Care*. Pittsburgh, PA: Oncology Nursing Society; 2005.
- Marian M, Roberts S. *Clinical Nutrition for Oncology Patients*. Sudbury, MA: Jones and Bartlett Publishers; 2010. ISBN: 978-0763755126.

Cancer Symptom Management

- Brown CG. *A Guide to Oncology Symptom Management*. Pittsburgh, PA: Oncology Nursing Society; 2011.
- Grant BL, Hamilton KK. *Management of Nutrition Impact Symptoms in Cancer and Educational Handouts*. 2nd ed. Chicago, IL: American Dietetic Association; 2004. ISBN: 088091324X.
- Yarbro CH, Frogge MH, Goodman M. *Cancer Symptom Management*. 3rd ed. Sudbury, MA: Jones and Bartlett Publishers; 2005. ISBN: 0763721425.

Chemotherapy, Biotherapy, and Side Effect Management

- Polovich M, Whitford JM, Olson M. *Chemotherapy and Biotherapy: Guidelines and Recommendations for Practice*. 3rd ed. Pittsburgh, PA: Oncology Nursing Society; 2009. ISBN: 1890504816.

- Wilkes G, Barton Burke M. *Oncology Nursing Drug Handbook: 2010*. Sudbury, MA: Jones and Bartlett Publishers; 2010. ISBN: 0763765856.

Radiation Therapy and Side Effect Management

- Watkins Bruner D, Haas ML, Gosselin-Acomb TK. *Manual for Radiation Oncology Nursing Practice and Education*. 3rd ed. Pittsburgh, PA: Oncology Nursing Society; 2005. ISBN: 1890505513.

Complementary and Alternative Medicine Therapies

- American Cancer Society. *Complete Guide to Complementary and Alternative Cancer Therapies*. Atlanta, GA: American Cancer Society; 2009. ISBN: 978-0944235713.
- Natural Medicine Comprehensive Database. Professional website available at: <http://naturaldatabase.therapeuticresearch.com/home.aspx?cs=&s=ND>.
- The U.S. National Library of Medicine's dietary supplement website available at: <http://dietarysupplements.nlm.nih.gov/dietary>.

Enteral and Parenteral Nutrition

- Charney P, Malone A. *American Dietetic Association Pocket Guide to Enteral Nutrition*. Chicago, IL: American Dietetic Association; 2006. ISBN: 978-0880913553.
- Charney P, Malone A. *American Dietetic Association Pocket Guide to Parenteral Nutrition*. Chicago, IL: American Dietetic Association; 2007. ISBN: 978-0880913690.
- The Oley Foundation. The organization is dedicated to helping enrich the lives of those requiring home intravenous and tube feeding through education, outreach, and networking. Available at: www.oley.org/index.html.

Medical Nutrition Therapy

- American Dietetic Association. *International Dietetics and Nutrition Terminol-*

ogy (IDNT) Reference Manual: Language for the Nutrition Care Process. 3rd ed. Chicago, IL: American Dietetic Association; 2011. ISBN: 978-0880914451.

Nutrition Assessment

- Charney P, Malone A. *American Dietetic Association Pocket Guide to Nutrition Assessment*. 2nd ed. Chicago, IL: American Dietetic Association; 2009. ISBN: 978-0880911610.

Patient Education Resources

Books on Cancer and Nutrition

- Dyer D. *A Dietitian's Cancer Story: Information and Inspiration for Recovery and Healing from a 3-Time Cancer Survivor*. 8th ed. Swan Press; 2002. ISBN: 096672383X.
- Grant BL, Bloch AS, Hamilton KK, Thomson CA. *American Cancer Society's Complete Guide to Nutrition for Cancer Survivors*, 2nd ed. Atlanta, GA: American Cancer Society; 2011. ISBN: 978-0944235782.

Cancer Cookbooks

- Achilles E. *The Dysphagia Cookbook: Great Tasting Recipes for People with Swallowing Difficulties*. Cumberland House Publishing; 2003. ISBN: 978-1581823486.
- Besser J, Ratley K, Knecht S, Szafranski M. *American Cancer Society's What To Eat During Cancer Treatment: 100 Great-Tasting, Family-Friendly Recipes To Help You Cope*. Atlanta, GA: American Cancer Society; 2009. ISBN: 978-1604430059.
- Clegg H, Miletello G. *Eating Well Through Cancer: Easy Recipes and Recommendations During and After Treatment*. Nashville, TN: Favorite Recipes Press; 2006. ISBN: 978-961088880.
- Gosh K, Carson L, Cohen E. Betty Crocker's *Living with Cancer Cookbook*. New York, NY: Hungry Minds; 2002. ISBN: 0764565494.
- Katz R, Edelson M. *The Cancer Fighting Kitchen: Nourishing, Big-Flavor Recipes for Cancer Treatment and Recovery*. Berkley, CA: Celestial Arts; 2009. ISBN: 978-587613449.
- Katz, R, Edelson M. *One Bite At A Time: Nourishing Recipes for Cancer Survivors and Their Friends*. Berkley, CA: Celestial Arts; 2008. ISBN: 978-587613272.
- Kogut V, Luthringer S. *Nutrition and Cancer: Practical Tips and Tasty Recipes for Survivors*. Pittsburgh, PA: Oncology Nursing Society; 2011.
- Wilson JR, Piper MA. *I Can't Chew Cookbook: Delicious Soft Diet Recipes*

for People with Chewing and Swallowing and Dry Mouth Disorders. 2nd ed. Hunter House; 2003. ISBN: 978-0897934008.

American Cancer Society Resources

Brochures can be downloaded from the ACS website (www.cancer.org) or are available for free at 1.800.ACS.2345.

- Caring for the Person with Cancer, 2009. Brochure No. 465600.
- Choices for Good Health: Guidelines for Nutrition and Physical Activity for Cancer Prevention, 2002. Brochure No. 208900.
- Living Smart: The American Cancer Society's Guide to Eating Healthy and Being Active, 2006. Brochure No. 204200.
- Nutrition for the Person with Cancer During Treatment: A Guide for Patients and Families, 2006. PDF also available at: www.cancer.org/acs/groups/cid/documents/webcontent/002903-pdf.pdf.

American Institute for Cancer Research (AICR)

Brochures can be downloaded from the AICR website (www.aicr.org) or are available for purchase at: 1 (800) 843-8114. AICR Brochure Series includes:

Simple Steps for Physical Activity

- Start Where You Are
- Keep It Up
- Mix It Up

The New American Plate Series

- The New American Plate
- The New American Plate: One-Pot Meals
- The New American Plate: Veggies
- The New American Plate: Comfort Foods
- The New American Plate: Breakfast
- The New American Plate: Beans and Whole Grains
- The New American Plate: Fruits and Desserts



The Facts About...Series

- A Closer Look at Nutrigenomics
- Everything Doesn't Cause Cancer
- The Facts About Alcohol
- The Facts About Fats
- The Facts About Fiber
- The Facts About Supplements
- The Facts on Preventing Cancer: Inflammation
- The Cancer Fighters In Your Food
- The Facts About Red Meat and Processed Meats

Watch Your Waist Series

- Don't Let It Happen
- More Food, Fewer Calories

Healthy Living for Cancer Prevention

- Eating Smart For Cancer Prevention
- Guarding Against Cancer
- Guidelines for Cancer Prevention
- Moving More for Cancer Prevention
- Nutrition After Fifty
- Recommendations for Cancer Prevention
- Staying Lean for Cancer Prevention
- What You Should Know About Breastfeeding

Homemade for Health

- Homemade for Health: Cooking for Lower Cancer Risk
- Homemade for Health: Cooking Solo
- Homemade for Health: Recipe Makeovers
- Homemade for Health: Snacks
- Homemade for Health: More Flavor, Less Time

Stopping Cancer Series

- Food, Physical Activity, Weight and Colon Cancer
- Questions and Answers about Breast Health and Breast Cancer

- Protect Yourself Against Testicular Cancer
- Reducing Your Risk of Breast Cancer
- Reducing Your Risk of Prostate Cancer
- Reducing Your Risk of Colorectal Cancer
- Reducing Your Risk of Skin Cancer
- Reducing Your Risk of Oral and Esophageal Cancers

Cancer Survivor Series

- Cancer Information: Where to Find Help
- Nutrition of the Cancer Patient
- Nutrition and the Cancer Survivor
- Surviving Cancer with Physical Activity

Spanish Language Series

DVD

Food for the Fight: Guidelines for Healthy Nutrition During and After Cancer Treatment. Washington, DC: AICR: 2008.

National Cancer Institute (NCI)

Brochures can be downloaded from NCI website, www.cancer.gov, or they are available to order for free at 1 (800) 4 CANCER or at <https://cissecure.nci.nih.gov/ncipubs/home.aspx?js=1>. Brochures are available in English and Spanish.

- Eating Hints: For Cancer Patients Before, During and After Treatment, 2011. NIH Publication No. 11-2079.
- Chemotherapy and You: Support for People with Cancer, 2011. NIH Publication No. 11-7156.
- Radiation Therapy and You: Support for People with Cancer, 2010. NIH Publication No. 10-7157.
- National Cancer Institute's Managing Chemotherapy Side Effect Patient Education Sheets

One Page Tear-Off Sheets (in pads of 50) Sheets can be downloaded from the NCI's website or they are available to order for free in pads of 50 tear-off sheets. Most are available in English

and in Spanish. Available at: 1.800.4CANCER or <https://cissecure.nci.nih.gov/ncipubs/home.aspx?js=1>.

- Anemia, 2009. NIH Publication No. 09-6467.
- Appetite Changes, 2009. NIH Publication No. 09-6466.
- Bleeding Problems, 2010. NIH Publication No. 10-6465.
- Constipation, 2009. NIH Publication No. 09-6461.
- Diarrhea, 2009. NIH Publication No. 09-6462.
- Fatigue, 2009. NIH Publication No. 09-6463.
- Infection, 2009. NIH Publication No. 09-6507.
- Mouth and Throat Changes, 2009. NIH Publication No. 09-6512.
- Nausea and Vomiting, 2009. NIH Publication No. 09-6511.
- Pain, 2009. NIH Publication No. 09-6453.
- Swelling (Fluid Retention), 2010. NIH Publication No. 10-6454.
- Urination Changes, 2008. NIH Publication No. 08-6455.
- National Cancer Institute's Managing Radiation Therapy Side Effect Patient Education Sheets.

One Page Tear-off Sheets (in pads of 50). Sheets can be downloaded from the NCI's website or they are available to order for free in pads of 50 tear-off sheets. Most are available in English and in Spanish.

Available at: 1.800.4 CANCER or <https://cissecure.nci.nih.gov/ncipubs/home.aspx?js=1>.
- What to Do When You Have Loose Stools (Diarrhea), 2007. NIH Publication No. 07-6102.
- What to Do When Your Mouth or Throat Hurts, 2007. NIH Publication No. 07-6109.
- What To Do About Feeling Sick to Your Stomach and Throwing Up (Nausea

and Vomiting), 2007. NIH Publication No. 07-6105.

- What to Do About Changes When You Urinate, 2007. NIH Publication No. 07-6110.
- What To Do When You Feel Weak or Tired (Fatigue), 2010. NIH Publication No. 10-6108.

Complementary and Alternative Medicine Therapies

- American Cancer Society. *Complete Guide to Complementary and Alternative Cancer Therapies*. Atlanta, GA: American Cancer Society; 2009. ISBN: 978-0944235713.
- Natural Medicine Comprehensive Database's consumer website available online at: <http://naturaldatabaseconsumer.therapeuticresearch.com/home.aspx?cs=&s=NDC&AspxAutoDetectCookieSupport=1>.

Nutrition and Pancreatic Cancer

Copies of this free brochure are available at: 1.877.272.6226 or online at: www.pancan.org.

- Pancreatic Cancer Action Network. *Diet and Nutrition: Nutritional Concerns with Pancreatic Cancer*, 2010.

Cancer Symptom Management

The following resources contain reproducible patient education handouts for managing a variety of cancer symptoms and treatment-related side effects.

- Grant BL, Hamilton KK. *Management of Nutrition Impact Symptoms in Cancer and Educational Handouts*. 2nd ed. Chicago, IL: American Dietetic Association; 2004. ISBN: 088091324X
- Yarbro CH, Frogge MH, Goodman M. *Cancer Symptom Management*. 3rd ed. Sudbury, MA: Jones and Bartlett Publishers; 2005. ISBN: 0763721425

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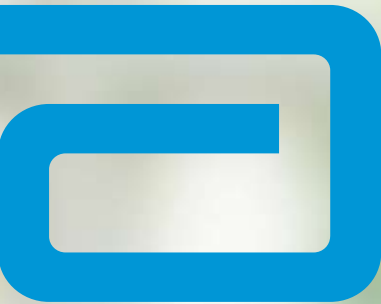
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