

Optimizing dietitian and nutrition services in the community oncology setting

A Canadian regional centre's experience

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ABSTRACT

Patient-centred cancer care requires attention to safety and quality, and requires the efforts of a full multi-disciplinary healthcare team.^{1,2} Malnutrition is a frequent but commonly overlooked problem in cancer care that has been associated with more treatment-related toxicity, inferior treatment response, impaired quality of life and worse overall prognosis.^{3,4,5} Registered dietitians (RD) have only recently been fully recognized and incorporated into comprehensive cancer care teams.^{6,7,8,9} Core service areas and competencies have also been defined for RDs and oncology nutrition services and, as a result, a variety of patient-centred roles have evolved.^{8,9,10} RDs now provide a variety of vital services to those affected by cancer, including patients, their families and the local medical community.^{7,8,9,11} Such services include helping patients

cope with cancer-related nutrition requirements throughout the disease continuum, facilitating group sessions, and aiding palliative-care patients and those transitioning to survivorship.^{6,7,8,9} While oncology dietitians and nutrition programs have been integrated into tertiary Canadian cancer centres, in the community cancer care setting they may be structured and function somewhat differently, when they exist at all.^{12,13} This paper describes how the RD and nutrition services at a busy community cancer program located at the Jack Ady Cancer Centre (JACC) in Lethbridge, Alberta, have been structured and currently function in order to meet patient needs.

Keywords: community cancer care, malnutrition, oncology nutrition services, registered dietitian oncology, interprofessional teams

There has been a significant shift in Canadian cancer care delivery over the past 20 years to approaches that emphasize patient-centred care and a delivery model that offers care closer to home.^{1,2} This new paradigm means that a significant number of treatments previously delivered in tertiary centres are now being administered in the community setting. In some provincial jurisdictions, more than 50% of all cancer therapies are now delivered in the community setting.^{1,2}

Patients receiving cancer treatments in the community setting should also have access locally to the full spectrum of ancillary services, including nutrition, physiotherapy and psychosocial care.² On-site comprehensive nutrition services are needed so that patients receiving their chemotherapy or radiation therapy close to home do not still have to travel elsewhere to manage their nutrition needs.^{12,13}

In this regard, a guiding principle of Alberta Health Services (AHS) has been “enabling the system to provide patients access to appropriate health services and information when they need it (i.e. provide the right service, in the right place, at the right time).”^{2,14} In an AHS assessment survey, patients identified clinical nutrition as the support service they used the most, and indicated that such cancer nutrition services should be covered under the provincial health plan.¹⁴

The JACC, which operates out of the Chinook Regional Hospital (CRH) in Lethbridge, Alberta, is one of 4 AHS regional cancer centres.^{1,2} The JACC provides oncology

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FIGURE 1. Oncology dietitian resources added in 2017

Cancer centre type	Tertiary cancer centres (2 sites)	Regional cancer centres (4 sites)
Increase to provincial dietitian FTEs in 2017	Edmonton zone: 1.6 FTE Calgary zone: 2.0 FTE	North zone: 0.6 FTE South zone: 1.4 FTE

FTE: full-time equivalent.

services to a population of over 100,000 in Lethbridge itself, along with another 50,000 to 60,000 Albertans in surrounding communities in terms of medical staffing, the clinic is currently funded for 2 full-time radiation oncologists, 2 full-time medical oncologists and 1.5 oncology nurse practitioners. The JACC cancer care delivery model is both comprehensive and team-based, including nutrition therapy, physiotherapy and psychosocial support, as well as the services of nurse navigators and advance clinical pharmacists.²

Oncology nutrition was only clearly defined as a field of science in the mid-1990s. It addresses the interaction of nutrients and other nutritional factors, including carcinogenesis, cancer prevention, adjunctive therapy and supportive nutritional interventions.^{3,10,12} Malnutrition is now recognized as an issue for 15% to 20% of all cancer patients, and for 80% to 90% of those with advanced disease.^{3,4,5} It has also been estimated that between 10% and 20% of cancer deaths may be attributed to malnutrition rather than the malignancy itself.^{3,4,11} Patients with gastrointestinal, head and neck, liver and lung cancers appear to be at significantly elevated risk for malnutrition, with elderly patients being more susceptible.^{3,4,5} During treatment, nutrition status is frequently compromised by treatment-related side effects. Malnutrition increases morbidity and mortality, as well as decreasing quality of life; it also impairs immune function, increases the risk of postoperative infections and may blunt response to a variety of therapies.^{3,4,5,9} Paradoxically, post-therapy weight gain may occur in some cancers, notably breast cancer, and require RD services.¹²

TABLE 1: Advantages of an embedded registered dietitian in the community oncology centre team

- Easier for patient to access RD and coordinate with the patient's other appointments at the centre
- Local RD has better knowledge of community resources, i.e. local community grocery or meal services, inpatient and home care services
- Single individual allows better continuity of care (can teach and follow patients regarding multiple nutrition concerns)
- Allows the multidisciplinary cancer care team timely access to appropriate nutrition information
- Allows RD to take part in on-site multidisciplinary patient rounds and team meetings
- Community RD can liaise with tertiary cancer centre counterparts when patient transfer is required

RD: registered dietitian.

EVOLUTION OF DIETITIAN AND NUTRITIONAL SERVICES

Prior to Fall 2014, there were no formal oncology dietitian services provided at the JACC. When an individual patient was identified with nutrition issues, the oncology nurses would recommend nutrition supplements, but this was, regrettably, often the extent of nutrition support. A family physician could refer a patient to a dietitian off-site who dealt with various nutrition issues. In late 2014, Nutrition Services at AHS assigned a 0.2 FTE (full time equivalent) dietitian (equal to 1 day a week) to the assessment of JACC cancer patients. For the first time, a medical exam room in the clinic was specifically set up for dietitian visits, and the comprehensive cancer team had access to a designated dietitian on site.

In 2016, the Cancer Control Alberta (CCA) Supportive Care Council released a Supportive Care Framework Report¹⁴ that identified the need for the “development of expertise in Supportive Care services” including in the comprehensive regional cancer centres such as JACC, and referenced dietitians and nutrition services. Specifically, the report highlighted that “the role of the dietitians within CCA is to provide evidence-informed nutritional support to oncology patients that included: to participate as an integral part of the multi-disciplinary team to provide nutritional expertise, screening, counselling and followup to cancer patients, to assess nutritional status, and to design interventions to optimize that status.”¹⁴ As a result of CCA support, funding was received to expand RD staffing levels in a number of community, regional and tertiary cancer centres in Alberta. The distribution of these resources is outlined in **Figure 1**. In the fall of 2017, the dietitian's role in JACC was further expanded to 0.7 FTE (3.5 days a week). Thus, JACC dietitian services became consistent with the dietitian role recommended in the 2016 Supportive Care Framework Report.

CURRENT OPERATING STRUCTURE OF NUTRITION AND REGISTERED DIETITIAN SERVICES AT THE JACC

Advantages of an embedded oncology dietitian and scope of practice

Table 1 describes the numerous advantages to having on-site registered dietitians.^{6,7,8,10} The oncology RD helps to debunk diet myths by separating evidence-based facts from myths and translating evidence-based nutrition science into useful information for patients and families.^{6,7}

Under the Health Professions Act, a registered dietitian in Alberta is regulated by the College of Dietitians of

Alberta and must adhere to the standards and practice set out by the College. Education for a dietitian includes at minimum a bachelor's degree in foods and nutrition, a one-year dietetic internship, and completion of a national registration exam. Registered dietitians (RD), dietitians, and registered nutritionists are protected titles denoting expertise in nutrition and food. **Table 2** describes the scope of practice of the RD at the JACC.

TRIAGE AND REFERRAL

In September 2017, the dietitian triage and booking process was changed to provide greater convenience and better coordination. Before booking with the dietitian, patients are screened based on information available in the patient's ARIA (cancer database) chart as well as the Netcare database. Appointments are prioritized according to a comprehensive analysis of medical history, current symptoms, weight trends, lab results and stage of treatment (see **Figure 2**). JACC nutrition visits are coordinated to occur on days patients are already booked for an outpatient or chemotherapy appointment. Currently, more than 70% of referrals originate from the oncology nurses or nurse navigators, with the remainder coming from other oncology healthcare team members; only 3% of patients are self-referred.

ANALYSIS OF CURRENT PROGRAM: FUNCTIONAL DATA

Between October 2017 and March 2018, the JACC RD saw 95 new referrals. The average time spent with each referral client was 60 minutes. **Figures 3 and 4** illustrate the principal reasons for dietitian referrals and characteristics

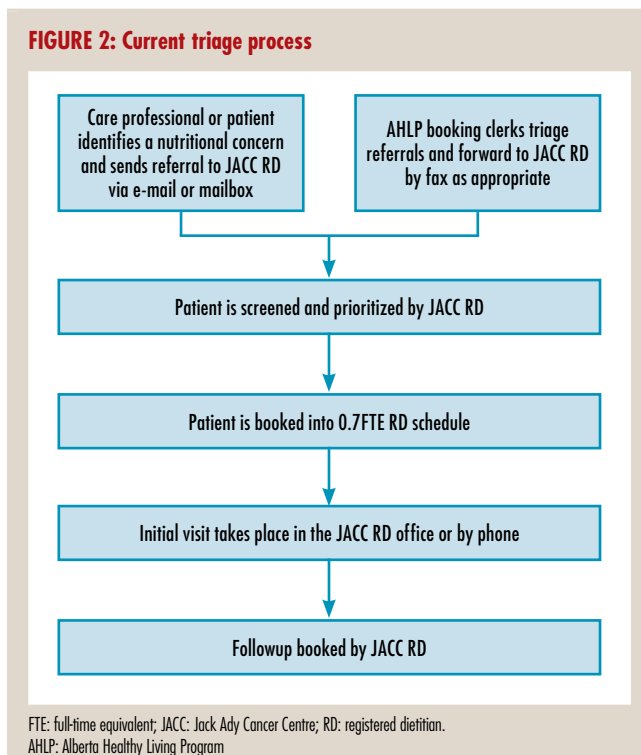


TABLE 2: Current scope of practice of the JACC oncology registered dietitian

- Completes comprehensive nutrition assessment to identify nutrition problems that need to be addressed
- Formulates individual nutritional care plans, with emphasis on patients at highest risk for malnutrition during treatment
- Provides anticipatory guidance on common nutritional problems a patient may encounter from the disease and treatment
- Addresses nutritional aspects of side-effect management
- Monitors patient progress, evaluates nutrition outcomes and provides followup
- Works with the patient and family to ensure nutrition information is understood and can be implemented
- Provides nutrition education and guidance to physicians and other members of the team
- Participates in multidisciplinary cancer care team conferences

of the patient population. Reasons for referral can be separated into 4 general categories: special diet counselling, general healthy eating, nutrition for disease and treatment-related side effects, and managing weight.

DISCUSSION

Cancer puts patients at particularly high risk for malnutrition, since both the disease and its treatments can threaten nutritional status.^{3,4,5,10} However, cancer-related malnutrition risk is frequently overlooked or undertreated by the cancer care team, and does not receive adequate consideration from patients and families.^{9,15,16} Several studies have documented that between 30% and 60% of at-risk patients actually receive nutritional support.^{9,15} In another study, 80% of patients receiving chemotherapy in an outpatient clinic considered that they required nutrition counselling, yet only 17% ended up receiving it.¹³ One explanation for these discrepancies is the underrepresentation of dietitians in cancer care practices. A survey of more than 700 American community cancer centres revealed that only 51% had a dedicated oncology dietitian.¹³

Both medical and nursing staff struggle to correctly identify patients at risk of malnutrition.^{8,9,15} Malnourished patients may have a body mass index (BMI) within the healthy or overweight range, due to preexisting obesity that masks the loss of lean body mass. In addition, BMI alone is not a sensitive measure of nutritional status, as it can be skewed by common occurrences such as ascites or edema.^{3,4,10} While most cancer patients will have a low albumin, these levels can vary with hydration, infection and renal function, making serum albumin problematic as well in predicting nutrition status.⁴

Such confounding factors complicate nutritional assessment: one study found that oncology nurses only identified 15% of study patients as malnourished, while assessment with an appropriate nutritional instrument revealed 57% of study patients as requiring nutritional support.^{9,15} The assessment skills of oncologists fared no better. One study

FIGURE 3. Primary reason for referral

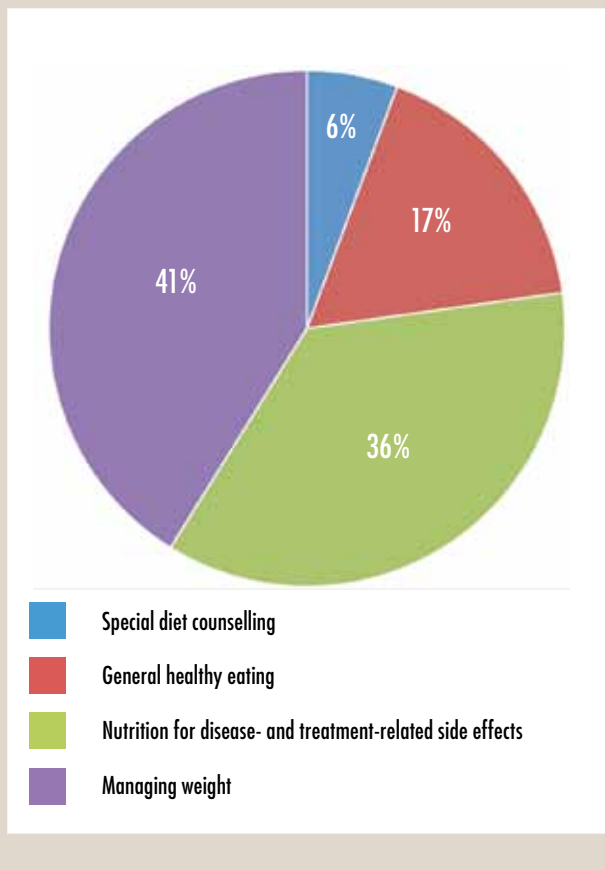
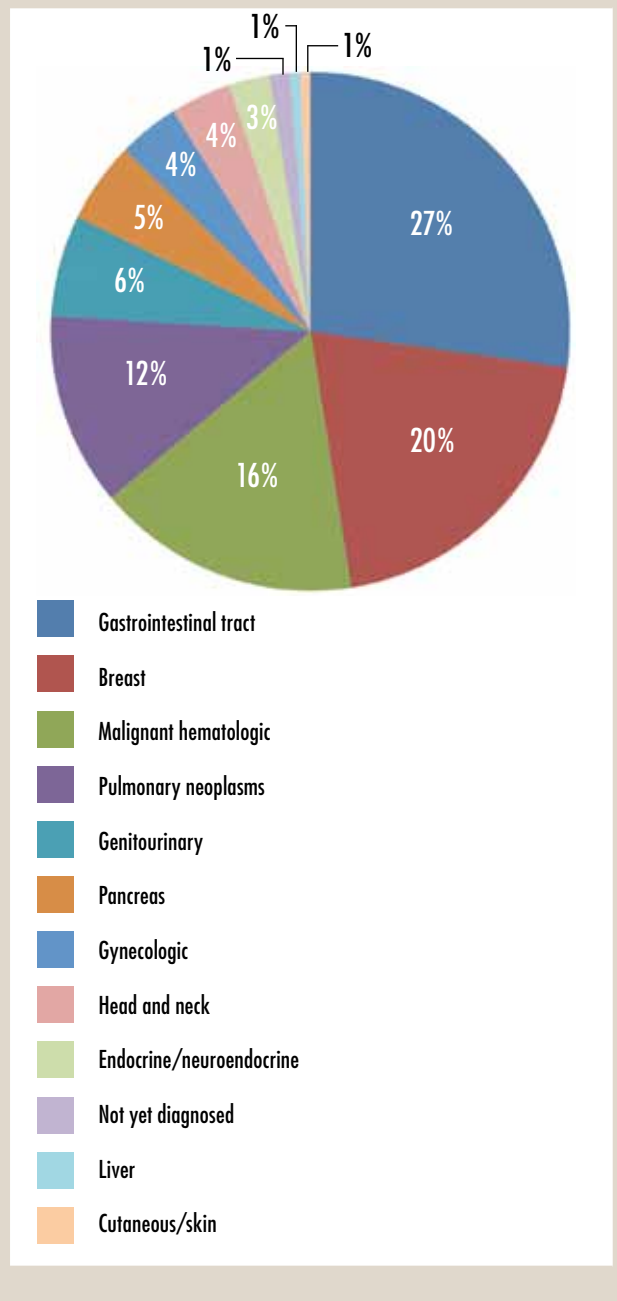


FIGURE 4. Primary cancer type



showed that, while 83% of oncologists recognized the importance of nutritional assessment and support, they were only implemented in <30% of cases.¹⁵ A second study in the UK identified that the major reasons oncologist failed to identify and followup on nutritional issues were time constraints, lack of knowledge, and the absence of clear guidelines or standardized protocols.¹⁵

As food and nutrition experts, dietitians are ideally suited to provide nutritional advice to cancer patients during the entire cancer experience, including primary prevention, treatment, secondary prevention, cancer recurrence and end-of-life care.^{17,18} Cancer diagnosis has been identified as a “teachable moment” when patients are susceptible to learn and adopt appropriate nutrition practices.⁸

Dietitians play a key role in countering cancer-related malnutrition, offering counselling before entering treatment, and encouraging patients to think of nutrition as an actual form of medication.^{6,7,8} The earlier an individual patient receives counselling, the more helpful it will be: a weight loss of even 5% at the time of diagnosis is associated with worse therapeutic response and reduced survival.^{3,4}

RDs also help patients distinguish between evidence-based facts and alternative therapy myths, and translate evidence-based nutrition science.^{6,7,8} There is currently a tremendous amount of misinformation in relation to alternative therapies

and nutritional supplements—from the alkali diet to the notion that sugar feeds cancer—that may scare patients into thinking that food is the enemy and spending considerable sums unnecessarily.^{6,16} Dietitians are ideally suited to counter such nutrition myths, often spending considerable time reassuring and educating patients in this regard. RDs are also strong patient advocates, since families often do not understand why a patient will not eat, and the family’s management of food becomes an area of contention.^{6,7,8,16} Our data show that the JACC RD spent a significant


amount of time discussing general healthy eating, nutritional supplements, low-cost foods and nutrition myths.

A variety of quality outcomes, including symptom control, quality of life, and overall performance, are improved through individual nutrition counselling from an RD.^{9,17,18,19} Such benefits have been shown for different cancer types and stages and for treatment modalities including chemotherapy, radiation therapy and surgery.^{18,19} There is also evidence of benefit from dietitian interventions in both the palliative and survivorship settings. In the post-therapy period, nutrition may decrease the risk of recurrence and possible comorbidities, such as cardiovascular disease or diabetes.^{10,12,18} Appropriate nutritional support has contributed to reducing costs by shortening hospital stays and overall costs of therapy.^{12,13,18}

WHERE DO WE GO FROM HERE?

Since 2012, patients at the JACC have been asked to fill out a survey, called “Putting Patients First,” in which they rate common symptoms and concerns, including nutritional concerns (lack of appetite, nausea, weight loss, etc.) Based on this input, symptoms are categorized and incorporated into an individualized patient-reported outcome (PRO) dashboard.²⁰ The dashboard displays a chronologic record of an individual patient’s symptoms. This allows oncology team members to quickly visualize the patient’s symptom trajectory and flag worsening symptom trends. To help optimize nutrition symptom management, a pilot project was undertaken at the Central Alberta Cancer Centre in 2017 to help community oncology dietitians detect nutritional concerns and risks earlier. This project worked to create a PRO Nutrition Symptom Cluster Report that would generate a list of patients who score or trend poorly on the nutrition parameters, thus automatically triaging nutrition referrals. Ultimately, universal implementation across AHS and specifically at JACC should lead to earlier and better-targeted RD involvement with patients.

CONCLUSIONS

Malnutrition remains a significant problem for patients in all phases of the individual cancer trajectory.^{3,4} There is evidence that oncology physicians and nurses experience considerable difficulty in accurately identifying cancer malnutrition and cachexia.^{9,15} Despite longstanding calls for on-site nutrition services, it is only relatively recently that such services have become an integral part of the multidisciplinary cancer care team.¹⁰ RDs are ideally suited to provide nutritional support from diagnosis to end-of-life care.^{6,7} They are skilled at translating the science of nutrition into practical solutions for healthy living.⁸ Research has also clearly documented a variety of tangible benefits from oncology dietitian interventions, including improved patient outcomes and quality of life, overall care satisfaction, and financial savings.^{17,18,19} Relatively little has been published to date on the functional working profile of RDs, and virtually no literature is available on RDs in the community oncology setting. This article documents how one busy community oncology practice has successfully integrated an on-site dietitian to optimally serve its patient population. 

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