Closing the Gap in Nutrition Care at Outpatient Cancer Centers: Ongoing Initiatives of the Oncology Nutrition Dietetic Practice Group

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LACK OF ACCESS TO NUTRITION care in outpatient cancer centers is a critical issue in the US health care system. It is well documented that malnutrition adversely affects key outcomes, including morbidity and mortality, as well as hospitalizations, readmissions, and other variables that may increase cost of oncology care.[1-4] Based upon this evidence, the Oncology Nutrition Dietetic Practice Group (ON DPG), a practice group of the Academy of Nutrition and Dietetics (Academy), formulated a strategic plan to address nutrition-related gaps in cancer care. The ultimate goal of the strategic plan is to improve patient access to oncology nutrition care from the time of diagnoses, through treatment and into cancer survivorship, for whatever period of time survivorship may encompass.

A key outcome of this project will be to identify how the clinical and research oncology nutrition communities can work together to create the supporting data and build the body of evidence to ensure the cost of comprehensive nutrition care is universally reimbursed by insurers and/or consistently included in bundled payment models for the total oncology care experience. Improved access to oncology nutrition care can be realized through improved payment models, and this process can serve as a framework and a model for securing consistent nutrition care for additional chronic disease states. All registered dietitian nutritionists (RDNs) must be committed to a future in which compensation for specialized nutrition care is the expectation rather than the exception.

This paper describes accomplishments to date in the process of identifying and addressing gaps in oncology nutrition care, and details future plans for moving toward universal access to nutrition care in outpatient oncology treatment facilities. In 2012, ON DPG engaged in conversations with the National Academies of Sciences, Engineering and Medicine (NASEM) with a resultant concept paper describing the rationale for investigating the consequences of inadequate access to nutrition care in outpatient cancer centers. This paper formed the basis for the 2016 NASEM-sponsored public workshop, which was convened in Washington, DC. Shortly thereafter, the proceedings of the workshop were published in the report, *Examining Access to Nutrition Care in Outpatient Cancer Centers*.[5] We present next steps in the strategic planning and implementation process and share a framework for moving toward universal access to oncology nutrition care.

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BACKGROUND AND SIGNIFICANCE

Access to Medical Nutritional Care

With the advent of more effective options for managing cancer symptoms and treatment side effects, approximately 90% of oncology patients now receive treatment in outpatient cancer centers and clinics.[6] This paradigm shift, from an inpatient to an outpatient treatment model, affects quality of care for oncology patients and has important implications impacting the delivery of nutrition services. Previous standards set by The Joint Commission directed hospitals to define criteria for nutritional screening, which is to occur within 24 hours of admittance into the hospital.[7] Nutritional screening on an inpatient basis generally is employed nationwide. Yet ambulatory standards of nutritional care, including screening, remain ambiguous and inconsistently applied across health care settings. Therefore, access to oncology nutrition care is left to the discretion of individual ambulatory entities or health care providers. As a result, the vast majority of cancer patients treated in outpatient cancer centers do not have access to oncology nutrition services.

The subsequent loss of access to ambulatory oncology nutrition services coincides with growing evidence supporting the role of nutrition in optimizing treatment outcomes and maximizing patient quality of life (QOL). Indeed, numerous mainstream professional organizations, including the American College of Surgeons Commission on Cancer,[8,9] the Association of Community Cancer Centers,[10] the American and European Societies of Parenteral and Enteral Nutrition,[2,11] the National Institute for Health and Care Excellence of Great Britain,[12] and the Victorian Department of Health in Australia[13,14] fully endorse and recognize nutrition services as an essential component of cancer care. These organizations advocate for formalized nutrition screening and assessment, nutrition care plans, and early medical nutrition therapy (MNT) when deficits are detected among patients with cancer. In the United States, there is a need for RDNs to have a more prominent role as key members of the oncology health care team.

Although benchmarking data on access to nutritional care remain limited,

it is estimated that RDNs provide 0.5 full-time equivalents in inpatient cancer centers and 0.2 full-time equivalents for ambulatory chemotherapy and radiation areas even though the vast majority of patients are treated in outpatient settings.[15] Sixty-four percent of oncology RDNs report working in inpatient settings, and 36% report working in outpatient settings.[16] These data, however, do not provide insight into the full-time equivalents in outpatient cancer centers or the patient-to-nutrition care provider ratio. Colleen Gill, who surveyed National Cancer Institute (NCI) Comprehensive Cancer Centers, found an average RDN-to-patient ratio of 1 RDN to 2,674 patients (personal communication, 2014). In another survey of NCI Comprehensive Cancer Centers, 30 centers (94%) reported offering RDN referrals or consult-based services. Yet these results provide no assurance that a patient needing or requesting clinical nutrition interventions will actually be referred or eventually seen by an RDN.[17] Important barriers, including lack of Medicare reimbursement for referral-based nutrition consultation and out-of-pocket patient expenses, continue to permeate throughout oncology ambulatory settings and negatively impact patient outcomes.[5]

Nutrition Status and Treatment Outcomes

Malnutrition occurs in up to 80% of cancer patients at some point during cancer care, with the majority (>50%) of cancer patients exhibiting nutritional impairments at their initial oncology visit.[18-20] It is well documented that malnutrition negatively affects outcomes; involuntary weight loss of just 5% of body weight decreases survival in cancer patients.[21,22] The Academy's Evidence Analysis Library (EAL) on Oncology found conclusive evidence (grade I and II) that poor nutritional status is associated with increased morbidity and mortality.[23] Furthermore, weight loss, malnutrition, sarcopenia, cachexia, and fatigue, all nutrition-related outcomes associated with cancer, were associated with increased mortality.[23-26] Other analyses demonstrate that markers of malnutrition, such as weight loss, low muscle mass index, and muscle attenuation, independently predict shorter survival.[27-32]

In addition to increased mortality and reduced survival, malnutrition increases treatment interruptions, readmission rates, and the risk of cancer recurrence while reducing patient QOL.[1,33-36] Patients receiving multimodal treatments are especially vulnerable while often experiencing multiple side effects that result in inadequate nutrient intake and subsequent weight loss leading to treatment interruptions, unplanned hospital admissions, lengthier hospitalizations, greater and more severe treatment side effects, dose-limiting toxicities, and reduced functional performance.[37-44]

Evidence shows that MNT improves treatment tolerance, reduces treatment breaks, decreases unintentional weight and lean body mass losses, increases QOL, decreases unplanned hospitalizations by >50%, reduces length of hospital stay (LOS), and improves overall survival.[23,33,34,45-55] Yet despite data documenting a high prevalence of malnutrition in cancer patients during treatment, fewer than 60% of at-risk individuals received any nutrition interventions.[56]

Historically, nutrition-related clinical trials have not focused on early MNT or intensive nutrition interventions at varying stages of malnutrition or standardized times in ambulatory oncology settings.[57-60] Although systematic reviews and meta-analyses document benefits for increased macronutrient intake during treatment, gaps in research continue to exist.[60,61] Unfortunately, the few studies that have attempted to measure nutritional interventions during outpatient oncology care have been plagued by poor study design and methodological and implementation flaws. Examples include poor adherence,[57] inappropriate interventions for late-stage disease or malnutrition,[58] confounding comorbidities such as cachexia,[59] inadequate comparisons of intensive nutrition interventions against established interventions for QOL maintenance,[60] underpowered studies exhibiting significant heterogeneity, and disparate standardization for confounders being included in meta-analyses.[61] In many nutrition intervention studies, the nutrition interventionist is not clearly defined. It is critical to describe the professional qualifications of those that deliver nutrition education and interventions to vulnerable cancer patients needing specialized MNT. Lack of agreement also persists and must be resolved on which malnutrition measurement tool most accurately and precisely captures malnutrition risk, in which populations, and over which times.[62-65]

At the other end of the spectrum, excess energy intake leading to overweight and obesity has negative health consequences for cancer patients.[66] In certain cancer types, obesity at diagnosis and weight gain during and after treatment—common among cancer survivors—are associated with poorer outcomes, decreased disease-free and overall survival, and possibly accelerated cancer progression.[66-77] Advanced pancreatic cancer patients with sarcopenic obesity—those that are overweight or obese with high fat mass yet low skeletal muscle mass—have the shortest survivals.[78] In patients with solid tumors of the respiratory or gastrointestinal tract, sarcopenic obesity was associated with poorer functional status compared with obese patients who did not have sarcopenia; sarcopenia was an independent predictor of survival.[79] Despite the evidence of poorer health outcomes in cancer patients who are overweight and obese, an *obesity paradox*—cancer patients with elevated body mass indexes have improved survival compared with normal-weight patients—may be occurring in patients with certain types of cancer. The obesity paradox may be a reflection of methodological mechanisms including the crudeness of body mass index as an obesity measure, confounding, detection bias, reverse causality, and collider bias.[80] It is imperative that overweight and obesity in cancer patients not be labeled "protective" or "harmful." It is imperative that oncology RDNs screen for malnutrition to facilitate the early identification of patients who are malnourished or who are at risk for malnutrition, regardless of their body mass index.

Body fat management is key to controlling prevalent comorbid conditions,[81,82] and RDN-led weight management programs have proven to be much more effective at achieving appropriate body weight and improved