

# Multimorbidity: An Issue of Growing Importance for Oncologists

By *Christine S. Ritchie, MD, MSPH, Elizabeth Kvale, MD, and Michael J. Fisch, MD, MPH*

Birmingham Veterans Administration Medical Center; Birmingham/Atlanta VA Geriatric Research Education and Clinical Center; University of Alabama at Birmingham, Birmingham, AL; The University of Texas MD Anderson Cancer Center, Houston, TX

## Abstract

As our population ages, more are afflicted with chronic conditions. Likewise, as more patients survive the diagnosis of cancer, they are likely to experience the sequelae of cancer treatment in the context of other coexisting medical conditions. Oncologists can expect that more than half of the patients they see who are older than 65 years will have at least one other meaningful chronic condition that may affect their treatment regimen. Multimorbidity can increase both treatment and illness burden and influence the benefit

and burden of cancer treatment. Recognition of the impact of multiple co-occurring conditions on a patient's cancer care plan and development of strategies to address the challenges associated with multimorbidity will enable oncologists to provide higher quality, patient-centered care. Increased efforts should be focused on educating clinical providers to practice the collaborative, team-based care required by these patients. Finally, research is desperately needed to guide oncologists and other providers in the unique management issues presented by patients with multimorbidity.

## Introduction

In the United States, the prevalence of multimorbidity, defined as the simultaneous existence of more than one pathophysiologic condition or clinical entity in an individual, is increasing rapidly. In a study of Medicare beneficiaries, 64% of participants had two or more conditions, and 24% had four or more conditions.<sup>1</sup> Between 2000 and 2020, the number of Americans with multimorbidity is expected to rise from 60 million to 81 million.<sup>2</sup> Oncologists can expect that more than half of the patients they see who are older than 65 years will have at least one other meaningful chronic condition that may affect their treatment regimen. Recognition of the impact of multiple co-occurring conditions on a patient's cancer care plan and development of strategies to address the challenges associated with multimorbidity will enable oncologists to provide higher quality, patient-centered care.

## Multimorbidity: Easy to Ignore and Challenging to Address

Mr J is a 70-year-old man with a history of tobacco abuse, hypertension, and type II diabetes mellitus, who returns to his oncologist for ongoing care of castrate-resistant, metastatic adenocarcinoma of the prostate. He presented 2 years earlier with a high prostate-specific antigen (PSA) and asymptomatic bone metastases. He underwent androgen-deprivation therapy using a luteinizing hormone-releasing hormone (LHRH) agonist and responded for approximately 1 year. He then developed a rising PSA levels and increased pain in his ribs as a result of disease progression. He is currently receiving palliative chemotherapy with docetaxel and prednisone. He continues to receive LHRH agonist injections and zoledronic acid injections as part of his cancer therapy. He is bothered by fatigue and mild pedal edema. He is evaluated in the oncologists' office in the "chemotherapy follow-up" template with a 15-minute visit slot.

There is nothing peculiar about Mr J's scenario; this is part of the landscape of outpatient oncology. The next patient scheduled after Mr J is a 59-year-old woman with congestive heart failure and diabetes who is receiving adjuvant chemotherapy for stage III colorectal cancer. She wants to discuss genetic testing because her mother and sister died of colorectal cancer, and she needs a refill of her medications for heart failure.

It is easy to see that alongside ongoing cancer care are complex issues related to the care of comorbid conditions that exist before, concurrently with, or sometimes as a result of cancer treatment. Oncologists and their patients are generally focused on the cancer and its treatment or surveillance, as that takes center stage. Adequately addressing the goals of care, the prognosis, and the supportive care details enmeshed with the specific malignancy is an additional challenge.

Oncologists are also asked to improve how they screen for depression; counsel patients on smoking cessation; and address sexuality, fertility, bone health, spirituality, financial concerns, and whatever other issues of major importance arise. The sheer number of tasks involved in caring for these patients can be overwhelming. The care processes for dealing with the comorbid problems are less clear. Depending on the nature of the medical problem; the comfort zone of the individual oncologist; and the accessibility of the primary care physician, palliative care providers, and other subspecialists, explicit decisions may or may not be made on questions like, Who will adjust the antihypertensive agent? Who will start the insulin and do the diabetes education? Who will check on the potassium level after the diuretic dose is increased? Who will refill the opioid analgesics and manage opioid adverse effects? And who will administer the pneumococcal vaccine after the splenectomy? This last issue related to vaccination was recently discussed as an example highlighting incomplete care and flaws in the system.<sup>3</sup> These authors emphasized that to achieve reliable

care, multiple approaches are required, and clinicians' workflow should be a key consideration. In the status quo of cancer care, the workflow seems to vary from patient to patient and by specific comorbid problem. As a consequence, there is a high risk for variability in the quality of care for cancer patients with multimorbidity.

## Potential Impact of Multimorbidity on Patient Outcomes in Cancer Care

### Treatment Burden

In addition to the challenges multimorbidity presents to workflow and care coordination, cancer treatment may add to the array of health behaviors and medications the patient is expected to manage. In the case of Mr J, in addition to his LHRH agonist injections, he had to manage his blood pressure and diabetes, both likely exacerbated by the prednisone he was receiving as part of his cancer therapy. Depending on his treatment priorities, he might be inclined to ignore some part of his diabetes regimen if the prednisone made it seem too hard to control his blood sugar levels.

Patients with higher numbers of co-occurring conditions are also more likely to take more medications. Many cancer patients with multimorbidity continue to take medications for their comorbid conditions when benefit from them is questionable. In a cohort of 100 older adults with metastatic cancer, patients ingested a median number of seven non-cancer-related medications. More than half of these patients complained of adverse effects associated with these medications.<sup>4</sup> Aside from difficulty with adverse effects and adherence, increasing drug burden is associated with decreased physical function, attention, and concentration,<sup>5</sup> as well as increasing risk for untoward effects related to cancer treatment. In the case of an older woman with heart failure and diabetes, two common co-occurring conditions, she is already expected to check her blood sugar routinely, weigh herself daily, adhere to a low-sodium diet, ingest a predictable number of carbohydrates, and take three to five medications daily. Chemotherapy or radiation treatment will add treatment complexity by potentially interfering with her medication routine, altering appetite and intake, and interfering with her volume status.

### Illness and Symptom Burden

Illness burden refers to the cumulative impact of multimorbidity on a patient's quality of life. It includes physical, emotional, social, and existential elements. Symptom burden refers to the number and severity of symptoms patients experience with one illness or a combination of illnesses. Very little work has been done to understand illness and symptom burden for patients with cancer in the context of multimorbidity. Studies that have investigated these issues, however, suggest that illness burden increases with multimorbidity and puts patients at risk for undertreatment (leading to lower rates of response and cure). In a study of 957 older patients with colorectal cancer, those with two or more comorbid conditions were 35% to 40% less likely to receive chemotherapy than their healthier counterparts.<sup>6</sup> Whether aggressive management of illness and symptom burden would lead to better outcomes with cancer treatment is yet to be determined.

### Increased Risk of Harm

Patients with multimorbidity have the potential to derive less benefit from cancer treatment and may incur more harm. Comorbidity is associated with diminished survival for patients with most common cancer types.<sup>7-18</sup> Studies suggest a "dose-response" effect that relates to the number of comorbidities; evidence shows that certain comorbidities are associated with a particularly negative impact on outcomes after cancer treatment.<sup>12</sup> For example, diabetes mellitus is a specific comorbid condition that negatively affects cancer-specific survival across populations.<sup>19</sup> Similarly, cancer patients with rheumatoid arthritis have worse cause-specific and overall survival.<sup>20</sup> Thus, for patients with multimorbidity, discussion of anticipated benefit of cancer treatment should consider the number and severity of comorbid conditions, as well as specific comorbid conditions that may affect the benefit from treatment. Multimorbidity increases the likelihood of major toxicity in different disease types<sup>13,21-23</sup> and increases the risk of hospitalization for chemotherapy-related toxicity.<sup>24</sup>

### Clinical Decision Making and Competing Priorities/Tradeoffs

Clinical decision making regarding cancer treatment takes on additional complexity in the presence of multimorbidity. The common exclusion of patients with multimorbidity from cancer trials limits the evidence base for informed discussions of treatment options. Patients may weigh the trade-offs associated with cancer treatment differently than oncologists. Some evidence for this comes from adherence rates with hormonal therapy for breast cancer, where women older than 75 years and those with increased comorbidity are significantly less likely than other women to be adherent to their recommended course of treatment.<sup>25</sup> The oncologist who takes into account the patient's goals and values, the burden of treatment, the survival benefit that continued treatment offers, and the individual's overall health status has the potential to optimize adherence among those patients who are most likely to benefit. Likewise, patients whose multimorbidity makes continued hormonal therapy overly burdensome can be encouraged to clarify their health care priorities and develop care plans that are congruent with their goals and priorities.

### Overlap Between Oncology and Palliative Care in Multimorbidity Management

The complex issues surrounding multimorbidity are those routinely addressed in palliative medicine. The palliative care framework seeks to focus in on the multidimensional concerns (physical, emotional, social, existential) brought on by serious illnesses.<sup>26</sup> Its emphasis on communication, interdisciplinary care, and management of illness burden puts palliative care in a natural position to support oncologists caring for patients with multimorbidity; the palliative care practitioner can work with the oncologist to optimize medication management, minimize treatment burden, and ensure that treatment trade-offs are understood and informed by patients' values and preferences. The National Comprehensive Cancer Network and the Commission on Cancer both have called for more systematic integration of palliative care services into on-

colony care.<sup>27,28</sup> Certainly for patients with multimorbidity, the palliative care clinician's comanagement with oncology can play a beneficial role, both for the patient and the busy oncologist. Unfortunately, community-based palliative care for cancer patients is still not widely available. In a recent study of cancer centers, outpatient palliative care consultation was available in only 59% of National Cancer Institute (NCI)–designated cancer centers and 22% of non-NCI cancer centers.<sup>29</sup> As multimorbidity becomes the norm for patients experiencing cancer, palliative care will become an essential element of patient-centered, efficient oncology care.

## Improving Multimorbidity Care: Next Steps for Practice, Education, and Research

### Practice Adaptations to Multimorbidity

Physicians and health care executives are striving to determine how cancer care can be adapted to produce better access and outcomes at lower costs in the new world of health care. There are opportunities at the system level, the level of professional organizations, and at the bedside. Rather than having health systems that may or may not have strength in cancer care, cancer-centered health systems may emerge as the population ages and the relative impact of both cancer and multimorbidity increase. With vertical integration, there can be better harmonization of electronic health records and more appropriate alignment of incentives to provide comprehensive, interdisciplinary care across the entire spectrum of illness. Another level of opportunity is for professional organizations in oncology and palliative care to work closely and consistently with primary care and medical subspecialty organizations. Although it may not be feasible to promote cross-attendance at each other's meetings, interactions can be enhanced through sharing space on journal pages and through social media and blogs that are enriched by cross-disciplinary input. Subspecialists, primary care providers, and others need to have some way of adjusting to the ongoing changes in cancer care. Likewise, oncology professional organizations can help their members become better attuned to the increasing complexity associated with the care of patients with multimorbidity and work with palliative care providers, along with other specialties, to develop improved care delivery models for this population. At the bedside, the biggest opportunity is in the realm of mindful practice. Oncologists can stay alert to the patients' vital signs and notice (and document) hypertension, for example. Acknowledgment of key comorbidities and lifestyle issues can lead to discussion of general goals in the realm of multimorbidity, including the broad goal of careful coordination of care with other physicians. Such goal-oriented discussions can lead to acknowledgment of competing risks (beyond malignancy) and the use of tools and charts (when appropriate) to effectively communicate about such risks.<sup>30</sup>

### Educational Opportunities

Until the evidence base is developed that will allow a more informed approach to patients with multimorbidity, educational efforts can focus on developing skills in collaborative care. For oncologists, recogni-

tion of multimorbidity and explicit training in managing care transitions are a core skill set for these patients. In addition, interdisciplinary training focused on the care of patients with cancer could help primary care physicians become comfortable with their role in caring for patients with cancer and comorbid illness.

### Research Gaps in Multimorbidity

Significant challenges for any oncology practice include knowing the best way to recognize comorbid chronic conditions and systematically addressing them. Patients with multimorbidity should be routinely enrolled onto clinical trials. Health services research can help guide best practices for coordinated care delivery models. A few models that demonstrate promise include shared care, integration of comprehensive geriatric assessment approaches into oncology practice, and integration of palliative and supportive care.<sup>31</sup>

### Summary

Recognizing and managing the effects of multimorbidity in patients with cancer will become an increasing issue for oncologists and other health care providers caring for such patients. Oncologists and palliative care providers have the opportunity to work together to optimize quality of life in this population. Greater emphasis will be needed in oncology research to understand the implications of multimorbidity for cancer care and survivorship. The ground is fertile to develop and evaluate new models of care that support patients with cancer and multimorbidity and the many health care providers who care for them.

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### Author Contributions

**Conception and design:** Christine S. Ritchie, Elizabeth Kvale, Michael J. Fisch

**Administrative support:** Christine S. Ritchie

**Manuscript writing:** All authors

**Final approval of manuscript:** All authors

Corresponding author: Christine S. Ritchie, MD, MSPH, CH19, Suite 219, 933 19th St South, Birmingham, AL 35205; e-mail: Critchie@uab.edu.

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## Longitudinal Patient-Reported Performance Status Assessment in the Cancer Clinic Is Feasible and Prognostic

By Sang-Yeon Suh, MD, PhD, Thomas W. LeBlanc, MD, MA, Rebecca A. Shelby, PhD, Gregory P. Samsa, PhD, and Amy P. Abernethy, MD

Department of Medicine, Dongguk University, Seoul, Republic of Korea; Division of Medical Oncology; Duke Cancer Care Research Program, Duke University Medical Center, Durham, NC

### Abstract

**Purpose:** Performance status is prognostic in oncology and palliative care settings. Traditionally clinician rated, it is often inconsistently collected, recorded, and measured, thereby limiting its utility. Patient-reported strategies are increasingly used for routine symptom and quality of life assessment in the clinic, and may be useful for tracking performance status.

**Methods:** Tablet personal computers were used to collect patient-reported reviews of systems via the Patient Care Monitor (PCM) v2.0 for 86 patients with advanced lung cancer. Relevant

subscales included the PCM Impaired Performance and Impaired Ambulation scales. Trained nurse clinicians measured performance status using traditional Karnofsky and Eastern Cooperative Oncology Group (ECOG) instruments. Correlation coefficients were used to compare performance status scales, and survival analysis was performed by Cox proportional hazards modeling.

**Results:** All four performance status scales demonstrated excellent internal consistency and convergent validity. Initial KPS and ECOG scores were statistically correlated with survival, whereas PCM scores showed a nonsignificant trend in this