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Facing Forward: Meeting the Rehabilitation Needs of Cancer Survivors

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Abstract: Decreased physical functioning, either transient or enduring, is encountered by many individuals at various points in the cancer trajectory. Oncology nurses are well positioned to promote functional recovery, as they have intensive contact with cancer patients in multiple settings and throughout all phases of the disease continuum. This article reviews effective screening tools that nurses can use to identify the rehabilitation needs of individual patients and initiate appropriate interventions or referrals for additional rehabilitation services. It also outlines realistic rehabilitation protocols that can help oncology nurses to reduce and prevent impairments that may occur during cancer and its treatment. As will be discussed, patients' functional performance can also be directly improved by enhanced incorporation of rehabilitation principles into oncology nursing practice.

The 5-year survival rate of cancer patients in the United States is about 66%, and today there are approximately 12 million cancer survivors in the US.[1] Almost all men and women diagnosed with cancer will experience decreased physical functioning or quality of life (QOL) during the course of their disease. These losses may be transient or enduring, and are generally the result of a complex interplay of physical, social, and emotional factors, many of which are disease-specific.

The specialty of cancer rehabilitation seeks to reduce and, when possible, eliminate functional losses associated with cancer and its treatment. In the United States, the first cancer-rehabilitation programs were established during the 1970s, when Dietz, Lehman, and other researchers demonstrated the efficacy of rehabilitation interventions for cancer patients and the need for specialized programs in this area.[2–4] Three decades later, rehabilitation services have become integrated into routine care for certain conditions resulting from treatment of cancer (eg, ranging from management of lymphedema following surgery for breast cancer to postsurgical care of laryngectomy patients), and the broader field of cancer-rehabilitation medicine has become a recognized subspecialty. For example, fellowship

training in cancer rehabilitation is now available at several major cancer centers for physicians who are board-eligible in related specialties, and the American College of Sports Medicine recently established a certification program for fitness experts working with cancer survivors.[5]

For the past 10 years the Oncology Nursing Society (ONS) and the Association of Rehabilitation Nurses (ARN) have issued a joint position paper recognizing the importance of cancer rehabilitation.[6] In their statement, ONS and ARN emphasize that “the oncology rehabilitation registered nurse’s role in the interdisciplinary team is pivotal in creating an environment conducive to quality patient care.” They note that further research and education in oncology rehabilitation, as well as continued interdisciplinary collaboration in this area, are critical to identifying ways to improve cancer patients’ and survivors’ quality—and quantity—of life.

Nonetheless, many people who have or have had cancer continue to struggle because their cancer-related disabilities are not recognized and are therefore undertreated. This problem has been observed in long-term “disease-free” survivors as well as among cancer patients experiencing disease progression. Cancer rehabilitation services are most effective when they are consistently available to patients from the time of presentation through treatment, recovery, and survivorship, as well as during periods of disease progression. [Figure 1](#) illustrates five critical opportunities for introducing tailored cancer rehabilitation interventions for cancer patients.

Oncology nurses and advanced-practice oncology nurses are well positioned to promote functional recovery, as they have intensive contact with cancer patients in multiple settings and throughout all phases of the disease continuum. Individual practitioners, however, may have more contact with select populations in specific settings, such as outpatient treatment for breast cancer, patients requiring perioperative care, or hospice-eligible patients.

Effective screening tools and realistic rehabilitation protocols help oncology nurses reduce and prevent impairments that occur during cancer and its treatment. Screening tools help nurses to identify the rehabilitation needs of their cancer patients and initiate appropriate interventions or referrals for additional rehabilitation services. Patients’ functional performance can also be directly improved by enhanced incorporation of rehabilitation principles into oncology nursing practice, such as posting activity logs at the bedside or instituting specific cancer rehabilitation care pathways.[7]

SCREENING AND FUNCTIONAL ASSESSMENT TOOLS

A variety of validated tools are available for the functional assessment of cancer patients.[8] A comprehensive discussion of these tools is beyond the scope of this article, but the most widely used functional-assessment tools are described. Program directors, researchers, and clinicians who wish to select from available tools will want to consider ease of administration as well as data validity. Some of the available tools may rely on patient self-assessment, whereas others require evaluation by a second party, often a healthcare provider.

PROVIDER-BASED ASSESSMENT TOOLS

First introduced in 1948, the Karnofsky scale (see [Figure 2](#))[11] remains widely used in oncology.[12] It was among the first scales developed to assess a patient’s performance on a regular basis, though it was designed primarily to determine which patients could tolerate and benefit from additional treatment rather than to assess daily function or QOL. In the United States, the Eastern Cooperative Oncology Group’s Performance Status Rating (ECOG-PSR) is a widely used single-item rating scale based on a patient’s ability to perform usual activities without needing to rest (see [Figure 3](#)).[12] The ECOG-PSR can be used by nurses and physicians, and it is considered in many institutions to be the equivalent of a vital sign as well as an uncomplicated way to chart and follow the course of cancer patients’ functional abilities.

Eastern Cooperative Oncology Group's Performance Status Rating (ECOG-PSR)

0	Fully functional status.
1	Restricted in terms of physically strenuous activity but ambulatory and able to perform light work.
2	Ambulatory and capable of all self-care but unable to carry out any work. Out of bed more than 50% of waking hours.
3	Capable of only limited self-care, confined to a bed or chair for more than 50% of waking hours.
4	Completely disabled.
5	Dead

It is generally recognized that the Karnofsky, ECOG, and FIM instruments exhibit a “ceiling effect,” as they are not sufficiently sensitive to the subtler gradations in function that occur when patients are able to remain active and fundamentally independent.

Because more elaborate exercise or fitness testing is not always practical, even for assessing the functional abilities of ambulatory oncology patients in the community, simple physiological substitutes such as the 6-minute walk test (6MWT) or the Timed Up and Go (TUG) test can be used.

The 6MWT measures the distance (in meters) that a person can walk on a hard flat surface (such as a tiled hallway) over a period of 6 minutes. It has been used to assess the pulmonary effects of radiation therapy and to evaluate the impact of various exercise programs on symptoms such as dyspnea in patients with lung cancer and other cancer types. The American Thoracic Society (ATS), in published guidelines for use of the 6MWT,[13] noted that, “because

Figure 3. The Eastern Cooperative Oncology Group's Performance Status Rating (ECOG-PSR) is a widely used single-item rating scale based on a patient's ability to perform usual activities without needing to rest. It is considered in many institutions to be equivalent to a vital sign.

most activities of daily living are performed at submaximal levels of exertion, the 6MWD may better reflect the functional exercise level for daily physical activities,” compared with other functional walk tests. The ATS guidelines state that absolute contraindications for the 6MWT include unstable angina or myocardial infarction during the previous month, and relative contraindications include a resting heart rate of more than 120 bpm, a systolic blood pressure of more than 180 mm Hg, and a diastolic blood pressure of more than 100 mm Hg.

The TUG is a timed assessment of a person's ability to rise from a chair, walk 3 meters, turn around, walk back to the starting position, and sit back down, and it has been validated repeatedly, particularly as a tool to assess the risk of falls.[14] Initially used as endurance measures, the 6MWT and TUG are now accepted as a means of assessing mobility and function.[15]

These simpler clinical tests, however, only indirectly address important domains such as continence and cognition.

SELF-ASSESSMENT-BASED TOOLS

An even broader range of domains can be assessed using the Functional Assessment of Cancer Therapy (FACT), a compilation of 250 items designed to measure health-related QOL in patients with cancer.[17] (See www.facit.org for recent updates.)

The general version, FACT-G, is a 27-item scale that encompasses physical, emotional, social, and functional domains. Unlike the Karnofsky, ECOG, or FIM scales, which must be completed by healthcare providers or trained assessors, the FACT-G is self-administered by the patient. Disease-specific or symptom-specific assessment can be pursued in greater depth using one of the 24 available FACT subscales, such as lung, breast, hematopoietic transplantation, fatigue, or anorexia.

IMPLEMENTATION

Patients in acute-care hospitals and other inpatient facilities can benefit from several types of rehabilitation services. Inclusion of standardized remobilization programs in the nursing treatment plan is key to preventing the bed-rest physiology and deconditioning that often accompany inpatient cancer treatment. Increasing intervals out of bed, progressing to at least twice-a-day ambulation, should be recorded for all patients without specific rehabilitation diagnoses. Patients with secondary impairments may need more tailored remobilization programs requiring input from rehabilitation physicians and therapists. Nurses caring for cancer patients at any type of inpatient facility should be familiar with their patient's rehabilitation program and its goals, so that newly reacquired techniques and abilities can be integrated into daily care. For instance, patients who have achieved a single-person-assist stand-pivot transfer or a sliding-board transfer in therapy should be encouraged to use the same techniques in their rooms. Daily or weekly therapy notes should be available for nursing review at most facilities.

Cancer patients with more extensive impairments (eg, related to brain tumors, metastases, limb amputation, etc.) may need to complete an inpatient rehabilitation program prior to returning home. These settings are designed for medically stable patients to regain the skills, strength, and endurance needed for some degree of independent living and self-care. Patients in these programs receive at least 3 hours of therapy daily with medical supervision and intensive rehabilitation nursing care that addresses bowel and bladder management, pain management, wound care, nutritional support, and related concerns. Current Medicare regulations limit access to acute-level inpatient rehabilitation units to patients who are capable of making functional gains and have a reasonable expectation of not requiring further institutional care.[18] The American Academy of Physical Medicine and Rehabilitation and others continue to advocate for lessening the "overly prescriptive" nature of the proposed rules.

Quality therapy but at a lesser frequency is available at subacute rehabilitation facilities, skilled nursing facilities, long-term acute care hospitals, and nursing homes. Home services including physical therapy, occupational therapy, and speech therapy are often used to achieve smoother transitions for patients with persistent disabilities. Patients who are or become independent in the community may still be limited by impairments associated with their cancer and its treatment. The variety of impairments is too numerous to catalogue here but ranges from fatigue to dyspareunia and incontinence.

Mobility, comfort, continence, speech, and overall function can often be improved or restored through treatment by a rehabilitation physician (physiatrist) and a team of therapists in the outpatient setting. Familiarity with oncologic disease processes is optimal for designing safe and effective outpatient programs as well as for prescribing appropriate durable medical equipment (DME) and assistive devices. For a patient living at home after extensive treatment for head and neck cancer, an outpatient program would include evaluation by a rehabilitation medicine physician; medical management of pain; range-of-motion exercises, strengthening, and modalities for upper extremity, neck and shoulder dysfunction; and speech therapy for patients who have undergone complete or partial laryngectomy.

Breast cancer patients with lymphedema, for instance, may need to combine daily wrapping and decongestive physiotherapy with postural work, range-of-motion exercises, and core body as well as extremity strengthening after breast reconstruction.

The rehabilitation medicine physician or physiatrist oversees the safety, selection, and implementation of many of these treatments, prescribes pertinent medications, and may provide additional interventions such as botulinum toxin injections or nerve blocks for spasticity. Practitioners specializing in cancer rehabilitation at cancer centers can guide patients who need to receive inpatient or outpatient rehabilitation services closer to home. Community-based therapists may not have as much experience

with cancer patients and often welcome reassuring guidance from a patient's primary oncology team. Precautions regarding weight-bearing or cardiovascular activities must be clearly communicated to both the patient and off-site rehabilitation providers.

Many medically stable patients are turning to fitness and health centers once they are cleared to do so by their physicians. The American College of Sports Medicine (ACSM) and the American Cancer Society recently developed a Cancer Exercise Trainer (CET) certification for fitness professionals (ACSM or National Organization of Competency Assurance [NOCA]-accredited).[19]

Specialty certification is based on education and hours of experience training older adults with chronic conditions and completion of a course on basic cancer diagnoses, treatment, symptoms, and side effects. Patients and trainers should be encouraged to consult both the original oncology team and cancer rehabilitation specialists with any questions that may arise, even with respect to seemingly healthy, long-term survivors.

CANCER REHABILITATION: CHALLENGES AND OPPORTUNITIES

Even after the completion of treatment, it has been shown that many barriers interfere with the delivery of needed rehabilitation services in patients with reduced function.[20]

Many healthcare providers have difficulty conceptualizing cancer as a chronic disease, and this limits referrals for rehabilitation. Chronic side effects of cancer treatment are either not identified or are accepted as a price to be endured by patients. In some cases, rehabilitation is seen as unduly time-consuming for patients with a limited life expectancy, despite the fact that simple interventions such as transfer training can significantly improve dignity and autonomy even at the end of life. Cancer survivors, on the other hand, are often limited by low expectations regarding their health, and they may not be familiar with existing options for addressing the chronic functional issues that can follow cancer therapy.

Oncology and rehabilitation nurses can work collaboratively to improve the QOL of cancer patients from diagnosis to long-term survival. It is critical that each specialty gain a greater understanding of the expertise provided by the other. Nurses in both specialties need to recognize cancer as an acute as well as chronic condition with multiple opportunities for improving QOL through the introduction of rehabilitation interventions.

Rehabilitation nurses are reorienting to the changes in cancer treatment in order to overcome the obstacles that have limited access to rehabilitation services. Key components of this educational process are:

- Conceptualizing cancer as a chronic disease in which patients require ongoing treatment to achieve meaningful long-term survivorship;
- Acquiring basic knowledge of the principles of chemotherapy administration; and
- Recognizing treatment-related side effects, thus increasing the comfort level of rehabilitation nurses involved with patients undergoing medical or surgical treatment. Oncology nurses can incorporate their rehabilitation colleagues' techniques for assessing and promoting function in multiple domains including mobility, self-care, feeding, communication, and continence.

CONCLUSIONS

The paradigm for delivering care to cancer survivors continues to evolve dramatically. The role and goals of cancer rehabilitation are simultaneously being redefined by regulations specific to rehabilitation

units and services. Oncology nurses and rehabilitation nurses must advocate for their patients in order to minimize the impact of treatment and disease-related side effects on long-term function and QOL. Early and repeated assessment of cancer patients' rehabilitation needs must become part of our standard evaluation process. The consistent use of a screening tool and clearly defined recommendations for interventions or referral are essential to this process. Oncology nurses and rehabilitation nurses must foster collegial relations based on a willingness to provide education and consultation to each other. The outcome will be a smoother path for patients struggling to maximize function and QOL after a cancer diagnosis.

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