

New Horizons in Oncology Rehabilitation



Advancing the Practice of Physical Therapists and Occupational Therapists Through Clinical Residency

As the incidence of cancer continues to increase and survival rates continue to improve, the U.S. healthcare system can expect an increase in cancer survivors. Many of these survivors may have physical and psychological impairments that can negatively affect participation in multiple activities, their occupation, and quality of life (QOL). These impairments may be a result of the primary or metastatic site of cancer, as well as side effects during and after cancer treatments, such as surgery, radiation, immunotherapy, or chemotherapy. Side effects may include (but are not limited to) the following:

- Weakness
- Joint stiffness
- Pain
- Balance impairments
- Peripheral neuropathy
- Lymphedema
- Chemobrain (mental foginess after chemotherapy).

These impairments and side effects can affect a person's ability to walk, drive, dress him- or herself, work, perform social roles, and optimally engage in the greater community around him or her.

It is estimated that 60 to 90 percent of cancer survivors have impairments and meet the criteria to benefit from rehabilitation.¹ Thorsen and colleagues found that 43 percent of cancer patients required physical therapy.² Today, many cancer survivors are no longer settling for simply accepting these impairments and side effects as a part of their "new normal." Instead, they are actively seeking rehabilitation services to address these issues and help them attain the best possible quality of life.

Recognizing this new role for rehabilitation professionals, Beaumont Health in metropolitan Detroit is actively preparing its physical therapists (PTs) and occupational therapists (OTs) to provide patient-centered, diagnosis-specific, compassionate care to cancer patients. This is being accomplished through advanced training by development of an accredited clinical residency program in cancer rehabilitation.

With this clinical approach, trained rehabilitation professionals are empowered to proactively address patients' functional needs. Oncology therapists (PTs and OTs) employ evidence-based best practices to diagnose and treat physical, cognitive, and functional impairments associated with this medically complex patient population.

Beaumont Health's Oncology Residency is the first oncology residency program in the United States to achieve candidacy accreditation from the American Board of Physical Therapy Residency and Fellowship Education (ABPTRFE.org). Beaumont Health's first cohort of residents began in September 2017 and is slated to graduate in September 2018.

The Benefits of Rehabilitation

In 2014, the Rehabilitation Medicine Department at the National Institutes of Health convened a task force to evaluate the "evidence base and practice standards in oncology rehab, to do a gap analysis for the field, and to make recommendations to stakeholders."³ This work was done with the support of the National Cancer Institute and the National Center for Medical Rehabilitation and Research.

The task force recommended "stronger efforts toward integrating cancer rehabilitation care models into oncology care from the point of diagnosis, incorporating evidence-based rehabilitation clinical assessment tools, and including rehabilitation professionals



Beaumont Health Oncology Rehabilitation Team Members. Front row (left to right): Mary Alice Hewelt, PT; Cynthia Tan, PT; Christine Lipple, OT; Suzette Smith, PT; Cynthia Marsili, PT. Back row (left to right): David Costello, PT; Janet Wiechec Seidell, PT; Michael Lucas, Reyna Colombo, PT; John Maltese, MD; Christopher Wilson, PT; Paul Rakowiecki; Donna Marshall; Manjula Amarnath, OT; Daun Pascaretti, OT.

in shared decision-making.”³ These models may include periodic rehabilitation screening and assessment as a part of a comprehensive cancer care plan.

With this clinical approach, trained rehabilitation professionals are empowered to proactively address patients’ functional needs. Oncology therapists (PTs and OTs) employ evidence-based best practices to diagnose and treat physical, cognitive, and functional impairments associated with this medically complex patient population. A periodic objective assessment of functional status is indicated before active cancer treatment begins, at regular intervals during treatment, and after a cancer treatment has concluded or has stabilized. These assessments are done to preserve and optimize function and monitor for late effects of treatment.^{4,5}

Impairments, Functional Limitations, and Participation Restrictions

The *International Classification of Functioning, Disability and Health* (commonly known as ICF) was developed by the World Health Organization and adopted by most national physical therapy and occupational therapy associations worldwide.⁶ It is a universal model for measurement, policy formulations, and clinical decision making. This model offers oncology providers a solid justification for integrating rehabilitation services into the treatment plan of cancer survivors from the moment of diagnosis, because the ICF describes functioning and disability across the continuum of health and the role of both environmental and contextual factors.

When developing and refining Beaumont Health’s cancer rehabilitation clinical services, the ICF model was frequently cited and emphasized during multiple presentations to key stakeholders. The ICF demonstrates the interdependent relationship between a health condition (cancer and its treatments) and its impact on

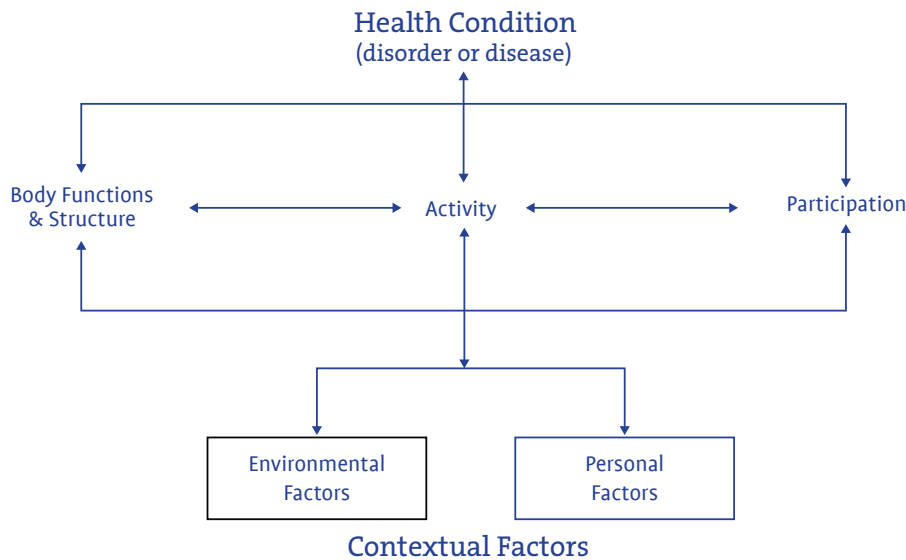
body functions and structures, activities, and participation in the context of personal and environmental factors (see Figure 1, right).

An example of this interdependent relationship is lymphedema as a side effect of radiation and axillary lymph node dissection after breast cancer treatment. The *health condition* would be the fluid and protein buildup in the interstitial space of the cells of a limb due to the disturbance in lymphatic return. This would cause changes to the *body structures and functions*, including increased limb girth, loss of range of motion, and strength deficits. These impairments to body structures and functions would result in patients’ inability to dress, groom themselves, and perform other essential *activities* requiring the use of the upper extremities. Finally, all of these issues would negatively impact patients’ abilities to *participate* in life events, such as working, childcare, driving, shopping, and recreation, resulting in a negative overall effect on quality of life. A therapist (PT or OT) specializing in cancer rehabilitation will address the patient’s specific issues at the health condition, body structures and function, activity, and participation levels. In addition, the therapist will assess *contextual factors*, including personal and environmental barriers and facilitators.

A Need to Go Beyond Entry-Level Training

Although PTs and OTs are rehabilitation experts who specialize in addressing movement dysfunctions, functional limitations, cognitive issues, and participation restrictions, the various tenets of cancer care are often not comprehensively covered in their entry-level training. In the subject-matter expert consensus presented to the Cancer Rehabilitation Symposium at the National Institutes of Health, it was noted that “educational models for physician residency programs in oncology rehabilitation are developing, as are advanced oncology competency avenues for

Figure 1. International Classification of Functioning, Disability, and Health



physical and occupational therapy professionals.”³ This change recognizes the important role that standardized, structured educational opportunities and credentialing in programs, such as residencies and board certification, play in postprofessional education.

In 2004, an initial crosswalk was completed between a nationally recognized oncology rehabilitation development program and Beaumont Health’s Oncology Rehabilitation Program. This crosswalk examined similarities, differences, and opportunities between both programs’ infrastructures to best develop and refine the rehabilitation programs. This crosswalk identified an opportunity to enhance Beaumont Health’s therapist (PT and OT) cancer rehabilitation education and training—both formal and informal. Hospital leadership recognized that there was enormous growth potential for oncology rehabilitation due to longer survivorship and that entry-level training of PTs and OTs only covers the peripheral concepts of oncology rehabilitation. Most “oncology therapists” obtain significant amounts of postgraduate coursework and on-the-job or experiential training, but this approach lacks consistency and is highly individualized, highlighting the need for a structured, formalized training curriculum such as a clinical residency.

In a recent survey, the Oncology Section of the American Physical Therapy Association found that only 5 percent of the currently licensed physical therapists in the United States practice solely in oncology.³ In general, rehabilitation services are not fully integrated with the oncology team.⁷

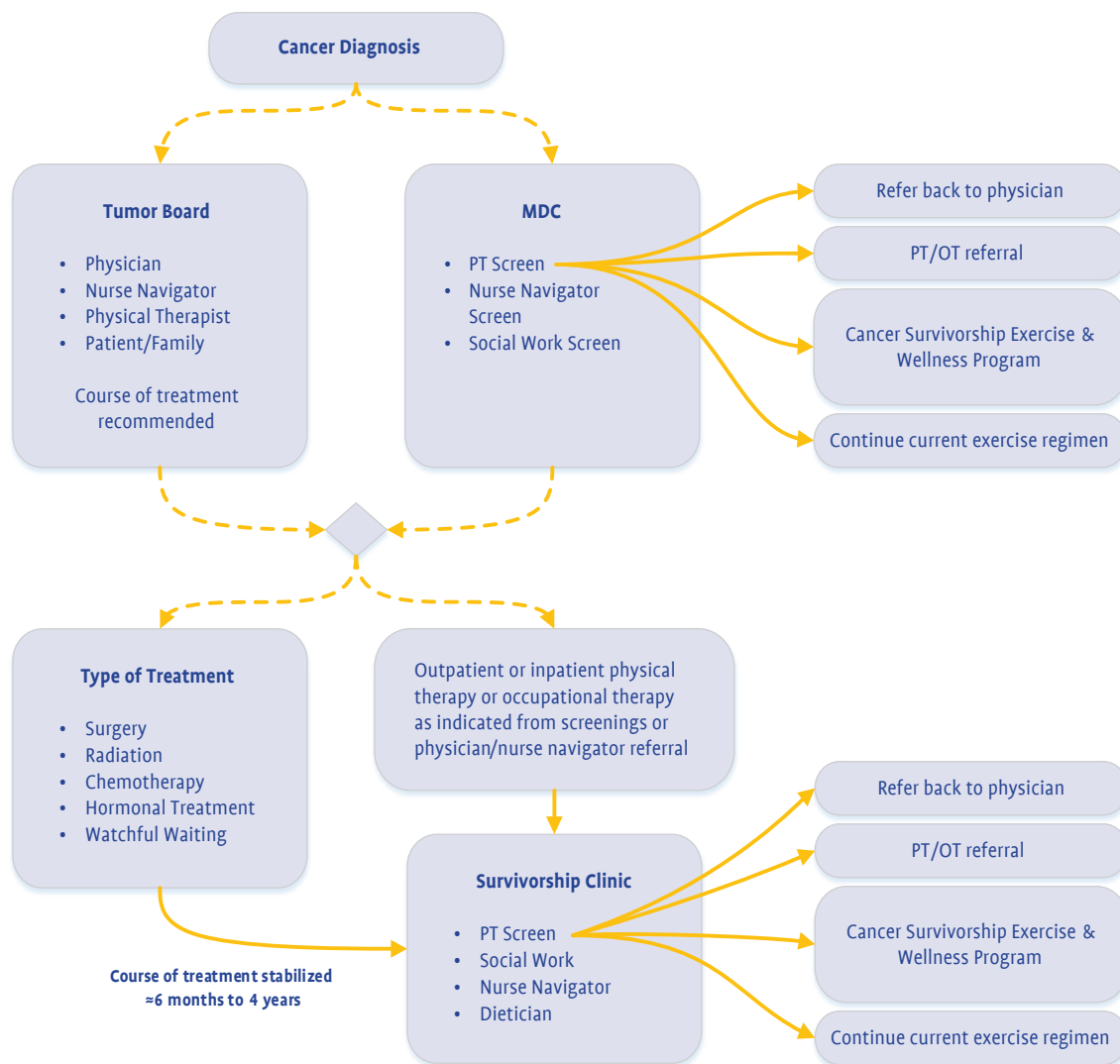
Longitudinal Management and Nontraditional Roles of Rehabilitation Specialists

Historically, traditional PT and OT services are episodic, with a distinct initiation and discharge time, and there is typically very little follow-through or continued consultation. This practice is

likely due to rehabilitation’s roots in orthopedics and neurology. However, the needs of oncology patients and the cancer continuum are unique. There are essential roles and care philosophies that PTs and OTs perform in oncology care that are not exhaustively covered during entry-level graduate training. These roles, outlined below, detail some of the key tenets of an oncology rehabilitation clinical residency.

Beaumont Health has developed a comprehensive, innovative model of physical screenings, interventions, exercise prescriptions, and survivorship exercise programs with an emphasis on lifelong health and wellness (see Figure 2, page 32).⁸ This program is based on the prevention, intervention, and sustained wellness model (see PRISM [prevention, intervention, and sustained wellness model] Care Philosophy, page 33) developed by Reyna Colombo, PT, MA, the director of Rehabilitation Services at Beaumont Health–Troy.⁹ The PRISM philosophy encompasses current evidence on cancer survivorship and promotes preventative, longitudinal care. These concepts reflect the philosophical evolution of physical therapy and occupational therapy from an episodic, intervention-based practice toward a comprehensive service that incorporates all aspects of participation in life events across the entire spectrum with a focus on quality of life. At each point in the cancer journey, a QOL outcome measure is administered so that QOL issues are identified and addressed early in the process. The PRISM care philosophy is discussed on page 33. At Beaumont Health, survivors attend a multidisciplinary clinic to determine an optimal treatment regimen shortly after an initial cancer diagnosis. During the clinic, a physical therapist completes a physical screen of each patient in coordination with oncology nurse navigators, physicians, social workers, dietitians, and the comprehensive interdisciplinary team. This collaborative approach allows survivors to hear multiple evidence-based opinions on how to manage their disease and treatment.

Figure 2. Beaumont Health’s Screening and Referral Models for PT and OT



Therapists (PT/OT) use an individualized screening tool and QOL outcome measure to accurately and appropriately determine a safe recommendation for rehabilitation, exercise, and activities of daily living (ADL) for each patient. Therapists participate in numerous multidisciplinary clinics, including breast, genitourinary, head and neck, and other tumor boards. In addition, therapists can employ prospective surveillance, which will establish baseline measurements to support early detection of lymphedema or other physical issues.¹⁰

After completing the multidisciplinary clinic screenings, the screening therapist makes recommendations based on the patient’s individual needs. These may include traditional physical/occupational/speech language pathology, a supervised exercise program, or an evidence-based home exercise prescription. If the screening reveals an issue that requires “traditional” rehabilitation services, a recommendation is made to the patient’s physician. If

rehabilitation services are appropriate at that time, a referral is initiated and these services are available at multiple convenient locations throughout the health system.

Patients who would benefit from exercise in a structured, safe, fun environment can attend Beaumont’s Cancer Survivorship Exercise and Wellness Program. This program is a series of supervised exercise and wellness sessions in a group exercise format to provide physical fitness and advice on healthy lifestyle behaviors. The Exercise and Wellness Program welcomes patients with all cancer diagnoses to exercise in a supervised, medically oriented group setting. Classes are facilitated by a licensed physical therapist assistant under the supervision of a PT. The programs are offered in a state-of-the-art exercise facility and are designed by physical therapists and occupational therapists who are experts in cancer wellness, exercise, and rehabilitation care.

PRISM CARE PHILOSOPHY

Prevention

Preventative care, a growing area of PT and OT practice, is not commonly considered in the presence of an already diagnosed condition. In cancer survivorship (from diagnosis through post-treatment), a periodic or annual reevaluation and exercise or activity prescription by a therapist may be appropriate to maintain strength and functional capacity. These periodic reevaluations (also known as “prospective surveillance”) can establish baseline functional levels and may identify an early exacerbation of a disease process, prompting further management as appropriate.

A key concept of preventative services is “prehabilitation,” which is providing activity and exercise prescription before a physiological insult occurs. “Prehab” originated from orthopedics under the logical assumption that if a body part is stronger and more mobile before surgery, it will provide for optimal outcomes and improved functional recovery. Prehabilitation encourages early intervention, exercises, and education by rehabilitation professionals to anticipate, mitigate, or minimize physical or functional issues arising from cancer treatment. For example, for a patient with head or neck cancer requiring a radical neck dissection, prehabilitation would include a physical therapist prescribing preoperative exercises for the neck, scapula, and jaw areas, as well as a walking program prior to surgery to optimize range of motion, strength, and cardiovascular fitness. These prehab activities would help the patient be more physically fit and stronger to allow for a shorter recovery time with fewer side effects after surgery.

Along the continuum of care, as functionality decreases with the aggregate of cancer treatment and/or disease progression, a baseline screen is important for a progressive plan of care and for early identification of impairments, functional limitations, and participation restrictions. This baseline screening allows physical therapists to begin a preventative exercise routine to support the patient’s safe advancement along the care path and in anticipation of the physiological insults of radiation, chemotherapy, immunotherapy, or surgery. The baseline assessment is also an opportunity for occupational therapists to provide ADL recommendations, including energy conservation, ergonomics, and pacing techniques to help optimize the patient’s functional performance.

Intervention

The PRISM philosophy’s intervention phase is what is commonly considered traditional or conventional rehabilitative services. This often includes impairment-based interventions for side effects of cancer or its treatments, including chemotherapy, radiation, immunotherapy, or surgery. It may also include intervention-based treatments for conditions such as pelvic floor rehabilitation for genitourinary cancers or complete decongestive therapy for secondary lymphedema. Though some general treatment techniques for cancer survivors are within the skillset of PTs and OTs with entry-level education, treatments such as pelvic floor rehabilitation and lymphedema management require significant postgraduate training and certification.

Sustained Wellness

The last concept focuses on the period after treatment has been stabilized or concluded, where a certain level of activity, exercise, or health maintenance behaviors is required to maintain an optimal level of activity and participation for patients and allow them to enjoy the highest quality of life. This program begins with a therapist (OT or PT) developing an exercise or activity prescription for a certain level of safe, effective, physical and functional activity. Beaumont Health has implemented systematic, interdisciplinary, structured screenings and programs throughout the cancer journey to provide increased emphasis on quality of life for cancer survivors.

Patients are monitored by the care team, which can initiate rehabilitation services, throughout the cancer journey until the patient’s condition has been stabilized or has achieved remission, at which point survivorship services will be initiated.

Once the course of cancer treatment is complete, a patient participates in Beaumont’s interdisciplinary Survivorship Clinic to develop a long-term survivorship care plan. During this clinic, survivors meet with a physical therapist to proactively address

the physical impact of cancer treatment. The physical therapist develops an individualized program to improve function and the exercise capacity of survivors. The goal is to decrease or prevent the likelihood of some anticipated physical problems, such as decreased strength and range of motion, decreased tissue flexibility, lymphedema, chronic fatigue, and urinary and fecal dysfunction. These individualized, proactive programs and clinical resources have demonstrated sustainability, financial viability, and patient

and physician satisfaction, and they have the potential to reduce hospital readmissions or negative outcomes after cancer care.⁸

Physical therapists and occupational therapists are also well positioned to provide interventions for those receiving palliative care and those at or near the end of life.¹¹ At Beaumont Health, PTs and OTs regularly participate in palliative care rounds; a recent study by Wilson and Roy found that approximately 80 percent of all patients admitted into Beaumont's Troy Hospital with a palliative care consultation received physical and/or occupational therapy.¹² This demonstrates the significant overlap in the changing functional and occupational status of these patients as a result of their advancing disease.

To provide comprehensive, holistic rehabilitation services that meet regulatory mandates by governing bodies, Beaumont Health emphasized adding value to the patient experience by developing best practices, standardizing care that is evidence based, and integrating it across the system.

As noted above, the physical therapist and occupational therapist intervention skillset is exceptionally well suited for management of this patient population. The advanced multisystem medical management, intervention, and care philosophy is an area that tends to require advanced training for physical therapists so that they understand the delicate balance between “aggressive rehabilitation” and an emphasis on optimizing quality of life.

Integration of Rehabilitation Within Cancer Programs and Survivorship

Integrated and interdisciplinary care models are the standard of practice in cancer care; however, significant barriers remain to full and comprehensive integration of physical therapy and occupational therapy with these services.¹³ A contributing factor to these deficits has been limited cancer rehabilitation educational curriculum and a dearth of residencies in this field.³

To provide comprehensive, holistic rehabilitation services that meet regulatory mandates by governing bodies, Beaumont Health emphasized adding value to the patient experience by developing best practices, standardizing care that is evidence based, and integrating it across the system. To do this, it was highly important to forge partnerships within the healthcare team across the continuum, including key stakeholders in oncology, administrative, and medical leadership, as well as nurse navigators. The goal of rehabilitation was to reengineer “traditional rehabilitation” processes to be part of the oncology management early in the survivors' trajectory by participating in tumor boards and mul-

tidisciplinary clinics at the time of diagnosis and throughout the cancer journey. This allowed PTs and OTs to know and support the physicians and their patients throughout the treatment and posttreatment trajectory. Goals were to create a proactive, patient-centered process and consistently place rehabilitation services on the care template, care pathways, and survivorship care plans.

Examples within the Beaumont Health include placing a physical therapist to perform a “no-charge” screening at various points throughout the patient's care continuum. As described above, these screenings were intended to establish a physical and functional baseline, as well as to gather key physical measurements early on, including limb girth, range of motion, balance, strength, performance of activities of daily living, and functional status. If this “prospective surveillance”¹⁰ identifies any impairments, functional limitations, or participation restrictions that require rehabilitation services, the screening therapist can immediately work with the attending physician to facilitate a referral for PT and/or OT if medically indicated and safe. If needs are not immediately identified but it is anticipated that physical performance will be impacted by cancer care, a preventative exercise prescription or ADL prescription may be provided at the point of service.

Initially, it was anticipated that these “free” screenings by highly trained PTs and OTs would be a cost to the healthcare system. However, these costs have been offset by program growth in outpatient and inpatient PT and OT services because patients who would otherwise not be traditionally have been referred for these services are now referred. Further, these early screenings, recommendations, and referrals have reduced delays in care, which minimizes the level of impairment and subsequent functional limitations and maintains patients' quality of life as high as possible during their cancer journey.

At Beaumont Health, PTs and OTs perform screenings at the breast, head and neck, and genitourinary/gastrointestinal multidisciplinary clinics, as well as within the radiation oncology department for adults and pediatrics. These screenings implement process improvement and monitor outcomes. Once these outcomes were achieved and refined, systematic performance metrics (including referrals from specific cancer providers), financial metrics, and patient care outcomes were consistently monitored and reported.

Rehabilitation Residency Programs

Over the past several decades, with the trend of increasing clinical expertise requirements for PTs and OTs, the education level of these clinicians has advanced significantly. Currently, 96 percent of entry-level physical therapy programs offer doctoral degrees in Physical Therapy, and a growing number of programs now offer an entry-level Doctor of Occupational Therapy degree. Even with this advanced training, the emphasis is on safe, effective, and competent generalist practice, as opposed to obtaining a specialty certification or advanced training in a specialty area. Thus, over the past decade, the number of physical therapy residency and fellowship programs has grown significantly.

In addition, there has been a significant increase in board-certified clinical specialist PTs and OTs. The American Physical Therapy Association estimates that as of 2017, 10 percent of all physical therapists obtained a board certification in a specialty area of practice. In 2016, the American Physical Therapy Association's House of Delegates passed a motion approving oncology physical therapy as an official board-certified specialization for physical therapists. Clinical residency is advocated as a way of pursuing and achieving board certification as a clinical specialist.

In June 2017, Beaumont Health became the first oncology residency program in the nation to achieve a provisional accreditation that allowed its program to begin. To earn candidacy, programs must meet preliminary didactic, clinical, and organizational requirements to begin offering the residency program. Beaumont is scheduled to undergo a full site visit six to eight months after candidacy accreditation, at which point Beaumont will be considered for full accreditation lasting for five years. Beaumont Health also plans to pursue similar oncology residency accreditation through the American Occupational Therapy Association in the near future.


Therapists who have been admitted into Beaumont's oncology residency undergo a rigorous organized curriculum via mentoring with content expert therapists and the entire interdisciplinary team. The therapist residents will participate in tumor boards, rounding with the oncology care team across the entire spectrum of cancer care. Key highlights of their experience will be as follows:

- Rounding and providing patient care at Beaumont's oncology inpatient rehabilitation unit
- Rounding and providing palliative and hospice care
- Participating in Beaumont's Cancer Survivorship Exercise and Wellness Program
- Participating in patient care in all aspects of the cancer journey.

The residency program was developed to assure that every resident would demonstrate proficiency across all aspects of cancer care and demonstrate competence in common and uncommon cancer diagnoses, metastatic disease, imaging, and prevention and wellness.

The residents will also participate in online discussions, take practical examinations, and mentor generalist clinicians in cancer rehabilitation procedures. They look forward to working closely with the medical oncologists, radiation oncologists, oncologic surgeons, nurse navigators, social workers, and the entire oncology care team. Key outcomes of the residency program are that the residents will obtain the proficiency, knowledge, and skills required to become board-certified oncologic specialists, as recognized by the American Physical Therapy Association and American Occupational Therapy Association.

In addition to the clinical benefits to the residents themselves, anticipated institutional benefits include national recognition in

the area of oncology rehabilitation. Within rehabilitation services, there is a proven market for these services, but growth is limited by a lack of qualified therapists to manage these patients. To meet the needs of cancer survivors in the evolving value-based care environment in which providers must demonstrate patient-centered care delivery, physical therapists and occupational therapists must advance their practice and skills, and it appears that clinical residencies for rehabilitation professionals are the wave of the future. 

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