INTEGRATED, EVIDENCE-BASED, WHOLE-PERSON CARE RESTORES FUNCTION & PRESERVES DIGNITY

By Kaitlin Pennington, MS, CCC-SLP

Survival outcomes in oncology continue to improve, yet functional recovery and survivorship quality lag significantly behind. For many patients, treatment success does not equate to restoration of eating, speaking, breathing, mobility, cognitive participation, pelvic health, strength or identity.

Kaitlin Pennington

This clinical feature proposes an interdisciplinary framework that integrates oncology rehabilitation specialists beginning at the time of diagnosis — rather than a post-treatment referral to general, outpatient physical therapy and rehabilitation clinicians.

Evidence demonstrates that proactive intervention improves treatment tolerance, reduces interruptions, protects function, reduces risk and cost of complications (i.e., aspiration pneumonia, infections, etc.) and readmission rates, and enhances long-term participation in life, such as a safer and more efficient return to work.

Drawing on emerging literature, clinical examples, and operational models across adult and pediatric oncology, this article outlines a new standard for survivorship: one in which function, especially in high-risk areas, are measured, monitored and protected as a core oncology outcome.

INTRODUCTION

Cancer treatment saves lives. Rehabilitation determines how those lives are lived. For decades, survivorship has been defined primarily through metrics such as recurrence, progression-free survival and mortality. These outcomes absolutely matter — but they do not tell the whole story.

Patients are entering survivorship with more years ahead of them — and more treatment-related effects than ever before. Intensified radiation protocols, immunotherapies, reconstruction and multimodal pathways mean that patients often begin losing function before treatment is complete, and sometimes even before it begins.

Patients who complete treatment frequently emerge with impairments that are not merely inconvenient but disabling and detrimental to quality of life: dysphagia (difficulty swallowing food/liquid/pills) resulting in feeding tube dependence; chronic fatigue; fibrosis, dyspnea; neuropathy; pain, weakness, reduced range of motion; communication limitations; cognitive changes; pelvic floor dysfunction; and loss of independence in daily tasks.

Survival is no longer the finish line. Function must be recognized as a core oncology outcome, measured and tracked by oncology rehabilitation specialists.

National data suggest that less than 12% of cancer survivors who would benefit from rehabilitation ever receive it. This is not due to lack of need, but lack of systems designed to identify, intervene and coordinate care with oncology-trained clinicians before decline occurs.

A NEW REALITY IN CANCER CARE

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Across disease sites:

▲ Up to 90% of head and neck cancer patients experience dysphagia during or after treatment;[1-3]

▲ Pelvic cancers show persistently high rates of incontinence and sexual dysfunction;[3-5]

▲ 50% to75% of survivors report fatigue that limits daily activity;[6]

▲ One in five develop lymphedema within two years;[1, 4]

▲ Pediatric survivors face lifelong risk of developmental, neuromotor, and cognitive impacts;[2,6,7]

▲ Early rehabilitation can reduce hospital readmissions by 30% to 50%; and

▲ Prehabilitation may reduce postoperative complications by up to 40%.[8]

These numbers underscore a simple truth. Functional decline is common, but far from inevitable.

WHY INTERDISCIPLINARY CARE MATTERS

An interdisciplinary survivorship framework integrates oncology rehabilitation specialists beginning at diagnosis — before functional loss, not after it. These disciplines do not replace oncology care; they complete it long after the treatment finishes.

The model is designed around a simple organizing principle: the patient and caregiver remain at the center, while the interdisciplinary team delivers coordinated care across defined domains and standardized pathways based on cancer type.

When aligned, communication

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becomes proactive rather than transactional. Decline is anticipated rather than discovered. Rehabilitation is not a referral; it is a standard of care embedded within the oncology pathway from the time of diagnosis, as a part of the interdisciplinary model.

RADIOTHERAPY: HIGH RISK, HIGH IMPACT

Patients undergoing head and neck radiotherapy experience severe treatment-related toxicities, including mucositis, dysgeusia, weight loss, and pain.[9] Between 12% and 22% require ≥one-week treatment breaks, which significantly reduce local tumor control and survival outcomes.

The SHINE-MDT trial demonstrated that coordinated supportive care reduced treatment interruptions from 25% to 11%, improving nutritional status, mental health, and hospitalization rates.[10]

A RESPONSE TO A SYSTEMIC GAP

Prior to founding Cancer Rehab Group (CRG), I spent a decade developing and standardizing a head and neck oncology rehabilitation program across five regional cancer centers, partnered with MD Anderson Cancer Center in Indianapolis. Alongside Sarah Blount, DPT — my longtime colleague, oncology physical therapist, lymphedema specialist and pelvic health expert — we designed integrated, comprehensive pathways that dramatically improved patient outcomes.

We observed firsthand how proactive rehabilitation transforms survivorship. Yet, we also saw the consequences when systems were unable to sustain specialized pathways. Patients arrived too late. Wait lists were never ending. Pathways were diluted. Expertise and qualified oncology-trained clinicians became inconsistent. This led to unacceptable and avoidable complications as well as increased time to recover.

It became clear: improving the standards for oncology rehabilitation required

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building a model from the ground up, one designed uncompromisingly for oncology patients. One where there were no symptoms left unspoken. One where patients had the opportunity to fully address every aspect of their mind and body from the time of diagnosis to long after survival — because side effects don't end when treatment do and often have a high risk of worsening.

Intervention must begin at diagnosis. Establishing baseline function allows teams to document vulnerabilities, build trust, initiate protective strategies, monitor changes in real time, and respond early rather than after crisis. This shifts the survivorship model from "recover what was lost" to "preserve what is at risk."

SINGLE CASE, COMMON THEME

For example, a 54-year-old patient sought care nine months after chemo-radiation, living on liquid supplements due to fear of choking.

Within six weeks of targeted oncology rehabilitation — including swallow therapy, breath-swallow coordination, fibrosis and lymphedema management — he safely returned to regular foods with stable nutrition. His program ensures regular self-assessment and ongoing clinical monitoring to maintain this function without decline as best as possible.

His comments were typical of what other patients repeatedly told us:

- "I thought this was normal."
- "My doctor said the swelling would go away."
- "I figured I had to deal with it."
- "No one told me I needed follow-up or see someone like you."
- "I didn't know cancer rehab existed... this has changed my life."

We found these were not isolated comments. They revealed a systemic failure to educate, support and empower survivors.

VIRTUAL CARE AS AN EQUITY TOOL

In-person care alone cannot meet demand. Virtual oncology rehabilitation bridges geographic, financial and scheduling barriers. Hybrid models extend reach without sacrificing quality.[11] This is not a convenience model; it is an equity model. Subspecialty care, such as oncology rehabilitation providers and dietitians deliver, can be achieved through virtual models to increase accessibility, reduce potential complications, and ensure the interdisciplinary model is not limited by a lack of on-site specialty providers, especially in more rural areas.

ONCOLOGY REHABILITATION: FROM EVIDENCE TO STANDARDIZED, PATHWAY INTEGRATION

Oncology rehabilitation is foundational to high-quality, value-aligned cancer care and essential to accreditation-aligned delivery. Strong evidence demonstrates that structured rehabilitation improves function, reduces treatment-related toxicity, enhances treatment tolerance, and strengthens survivorship outcomes across adult cancer populations.[12,13]

The phase III CO.21 CHALLENGE trial further demonstrated improved disease-free survival with structured movement-based intervention, reinforcing that functional optimization may influence long-term oncologic outcomes.[14]

Despite this evidence, integration remains inconsistent and referral dependent. Children undergoing cancer treatment face musculoskeletal,

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cardiopulmonary, neurologic and developmental disruption during critical growth years, with survivorship often extending decades.

Although rehabilitation interventions are safe and beneficial, pediatric pathway integration and high-quality interventional research remain comparatively limited.[15,7]

To align evidence with contemporary standards, rehabilitation must move from referral-based access to integrated, pathway-driven infrastructure beginning at diagnosis. Oncology-trained and certified rehabilitation and movement specialists should collaborate directly within oncology teams to obtain critical baselines and prehabilitation where appropriate, anticipate toxicities, identify risk factors, and mitigate long-term effects.

Scalable hybrid models involving both in-person and virtual access make standardized implementation feasible across academic and community settings, regardless of one's location before, during and after treatment.

As quality frameworks and value-based survivorship expectations advance, oncology rehabilitation integration represents both a clinical responsibility and an operational strategy. Cancer Rehab Group partners with care teams nationwide to advocate and implement scalable, oncology-informed pathways that close critical gaps.

CLINICAL IMPLICATIONS

Integrating rehabilitation and exercise models beginning at diagnosis improves treatment adherence, reduces interruptions, lowers hospitalization and complication rates, improves patient-reported outcomes, enhances safety at home, and grounds survivorship plans in function, identity and participation.

Integrating oncology rehabilitation with oncology-based exercise medicine may include:

A specialized, oncology rehabilitation team must be a core component of oncology care, embedded within interdisciplinary frameworks — beginning at diagnosis and sustained through survivorship.

▲ Breathwork and lymphatic-respiratory patterns;

▲ Oncology-safe movement screening;

▲ Strength and aerobic conditioning tailored to treatment history;

▲ Neuropathy-safe gait and balance training;

▲ Medically informed mobility therapy;

▲ Fatigue management and pacing strategies; and

▲ Return-to-work and return-to-life planning.

Exercise, awareness and education is clinical. It is personalized. It is essential.

THE WHOLE-PERSON CARE MODEL

A whole-person care model is not an abstract philosophy — it is the foundation of how every patient's plan is created. It ensures that each patient is assessed individually, with careful consideration of their medical history, treatment trajectory, lifestyle, goals, functional risks, support systems and long-term survivorship needs. No two oncology journeys are alike, and no two care plans should be either.

Additional areas of Interdisciplinary Care include:

▲ **Mental Health:** Collaboration with providers specializing in patients with cancer who encounter fear of recurrence, trauma, identity changes, depression, anxiety and communication barriers.

▲ **Nutrition:** Providing guidelines for oral intake, as well as supplemental nutrition (i.e., feeding tube), to optimize nutrition and hydration before, during and after treatment, symptom management, hydration strategies, metabolic support, endocrine therapy nutrition guidance and oncology-based nutritional support and guidance.

▲ **Symptom Management:** Partnerships and close collaboration with primary radiation/surgical/medical oncology teams are essential. The list includes advanced practice providers, pain management experts, prosthodontists, dentists and primary care providers. Among the issues to address: neuropathy, fibrosis; trismus; xerostomia; fatigue; skin changes; and more.

▲ **Caregiver Support:** Providing education, safety training, emotional support, communication tools and shared recovery planning, as well as safe spaces to connect with other caregivers.

CONCLUSION

Cancer rehab cannot remain an optional referral and any rehabilitation referral cannot suffice to meet the complexity of needs within this population.

A specialized, oncology rehabilitation team must be a core component of oncology care, embedded within interdisciplinary frameworks. Beginning at diagnosis and sustained through survivorship.

Cancer treatment saves lives. Oncology rehabilitation determines how those lives are lived.

It is time to measure both.

▲ **Kaitlin Pennington**, MS, CCC-SLP, a nationally recognized leader in oncology rehabilitation, is the founder and CEO of Cancer Rehab Group (CRG), an oncology-certified rehabilitation and wellness provider based in Indianapolis and Las Vegas. Its mission is to scale nationally to improve standardized access to underserved areas through hybrid (virtual + in-person) models. CRG works alongside existing care teams and patients across the continuum of care to deliver clear, NCCN-guided and standardized referral pathways, improved treatment tolerance, extended supportive care and evidence-based clinical infrastructure with seamless integration.

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