

The Role of Rehabilitation in Comprehensive Cancer Care

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American Board of Electrodiagnostic Medicine

American Board of Internal Medicine

Living well beyond cancer.

Kessler
INSTITUTE FOR REHABILITATION

 **ReVital**
Cancer Rehabilitation

Disclosures

- Editor: *Cancer Rehabilitation – Principles and Practice*
- Avid photographer (Yes, all the photos are mine!)



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Objectives

- Define the key components of comprehensive cancer rehabilitation.
- Identify the role of rehabilitation in comprehensive cancer care.
- Explain how to incorporate cancer rehabilitation into a comprehensive oncology care plan.
- Describe the value of comprehensive cancer rehabilitation.



What is Cancer Rehabilitation?

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Definition



Cancer rehabilitation is a process that helps cancer survivor obtain and maintain the maximal possible physical, social, psychological, and vocational functioning within the limits created by cancer and its treatments.

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Successful Rehabilitation Requires and Understanding of:

Cancer

Cancer treatments

- Surgery
- Chemotherapy
- Radiation Therapy
- Hormonal Therapy
- Biologic Therapy
- Targeted Therapy

Pre-existing disorders

The interrelationship between all of the above



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“The Dirty Little Secret”

The principles and practice of cancer rehabilitation are generally similar to those of general rehabilitation...

Why Do We Need Cancer Rehabilitation?



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Five-year Relative Survival Rates

Table 8. Five-year Relative Survival Rates* (%) by Stage at Diagnosis, US, 2008-2014

	All stages	Local	Regional	Distant		All stages	Local	Regional	Distant
Breast (female)	90	99	85	27	Oral cavity & pharynx	65	84	65	39
Colon & rectum	65	90	71	14	Ovary	47	92	75	29
Colon	64	90	71	14	Pancreas	9	34	12	3
Rectum	67	89	70	15	Prostate	98	>99	>99	30
Esophagus	19	45	24	5	Stomach	31	68	31	5
Kidney†	75	93	69	12	Testis	95	99	96	74
Larynx	61	78	46	34	Thyroid	98	>99	98	56
Liver‡	18	31	11	2	Urinary bladder§	77	69	35	5
Lung & bronchus	19	56	30	5	Uterine cervix	66	92	56	17
Melanoma of the skin	92	98	64	23	Uterine corpus	81	95	69	16

*Rates are adjusted for normal life expectancy and are based on cases diagnosed in the SEER 18 areas from 2008-2014, all followed through 2015. †Includes renal pelvis. ‡Includes intrahepatic bile duct. §Rate for in situ cases is 95%.

Local: an invasive malignant cancer confined entirely to the organ of origin. **Regional:** a malignant cancer that 1) has extended beyond the limits of the organ of origin directly into surrounding organs or tissues; 2) involves regional lymph nodes; or 3) has both regional extension and involvement of regional lymph nodes. **Distant:** a malignant cancer that has spread to parts of the body remote from the primary tumor either by direct extension or by discontinuous metastasis to distant organs, tissues, or via the lymphatic system to distant lymph nodes.

Source: Noone AM, Howlader N, Krapcho M, et al. (eds). *SEER Cancer Statistics Review, 1975-2015*, National Cancer Institute, Bethesda, MD, http://seer.cancer.gov/csr/1975_2015/, based on November 2017 SEER data submission, posted to the SEER website April 2018.

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What is a Cancer Survivor?

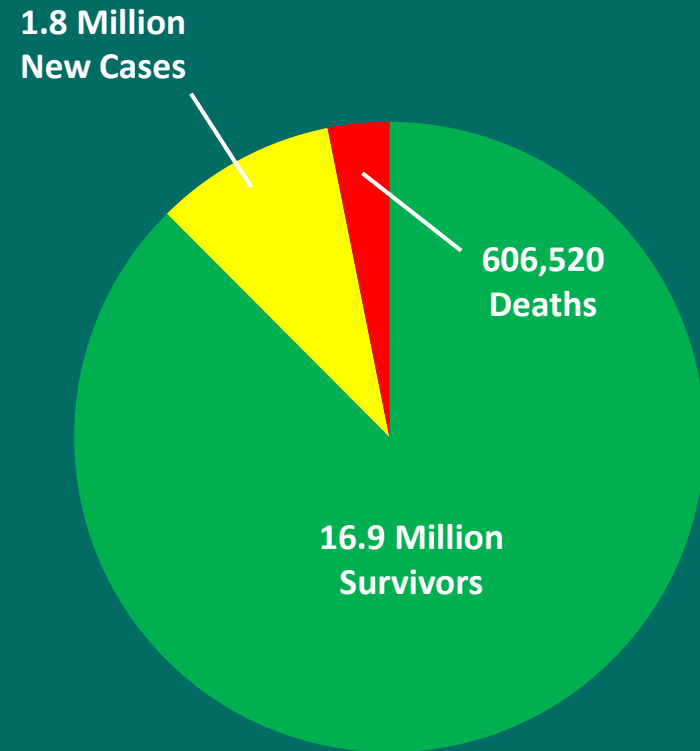
Popular: A person who has received a cancer diagnosis but is considered free of active disease and who has completed their primary cancer treatment, although some may remain on maintenance therapy such as Tamoxifen, etc.

The National Coalition for Cancer Survivors (NCCS): ***“from the point of diagnosis through the balance of life”***.

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Survivorship in Context

- 16.9 million cancer survivors in 2020¹
- 22.1 million cancer survivors by 2030²
- 291,000 spinal cord injury survivors in 2018³



¹American Cancer Society. Cancer Treatment & Survivorship Facts & Figures 2020. Atlanta, GA: American Cancer Society; 2020. Accessible at: <https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/annual-cancer-facts-and-figures/2020/cancer-facts-and-figures-2020.pdf>²Miller KD, Nogueira L, Mariotto AB, et al. Cancer treatment and survivorship statistics, 2019. CA Cancer J Clin 2019.

³ Spinal Cord Injury (SCI Facts and Figures at a Glance. Accessible at: <https://www.nscisc.uab.edu/Public/Facts%20and%20Figures%202019%20-%20Final.pdf>

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Impairments in Cancer Survivors

- 20% of childhood cancer survivors¹
- 53% of adult cancer survivors²
- 2/3 of Breast cancer survivors experience 1 or more long term issues (i.e., fatigue, lymphedema, pain)³

¹Ness KK, Mertens AC, Hudson MM, et al. Limitations on physical performance and daily activities among long-term survivors of childhood cancer. *Ann Intern Med* 2005;143:639-47.

²Ness KK, Wall MM, Oakes JM, Robison LL, Gurney JG. Physical performance limitations and participation restrictions among cancer survivors: a population-based study. *Ann Epidemiol* 2006;16:197-205.

³Schmitz KH, Stout NL, Andrews K, Binkley JM, Smith RA. Prospective evaluation of physical rehabilitation needs in breast cancer survivors: a call to action. *Cancer*. 2012;118(8 Suppl):2187-2190.

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Causes of Impairments in Cancer Survivors

- Systemic Therapy
 - Chemotherapy
 - Hormonal Therapy
 - Biologic Therapy
 - Targeted Therapy
- Radiotherapy
- Surgery
- Tumor
- Degenerative Disease
- Other

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Types of Impairments in Cancer Survivors

Neuromuscular

- Cerebropathy
- Myelopathy
- Radiculopathy
- Plexopathy
- Neuropathy
 - Polyneuropathy
 - Mononeuropathy
 - Mononeuropathy Multiplex
 - Ganglionopathy
 - Small Fiber
- Myopathy

Musculoskeletal

- Tendonitis
- Adhesive Capsulitis
- Epicondylitis
- Tenosynovitis
- Spondylosis
- Spinal Instability
- Fracture
- Impending Fracture
- Arthritis
- Enthesopathy
- Osteoporosis
- GVHD
- Scoliosis
- Bony Metastases
- Pain

Other

- Lymphatic
- Psychiatric
- Cognitive
- Autonomic
- Cardiac
- Pulmonary
- Endocrine
- Gastrointestinal
- Urinary
- Genitourinary
- Myofascial

Models of Care



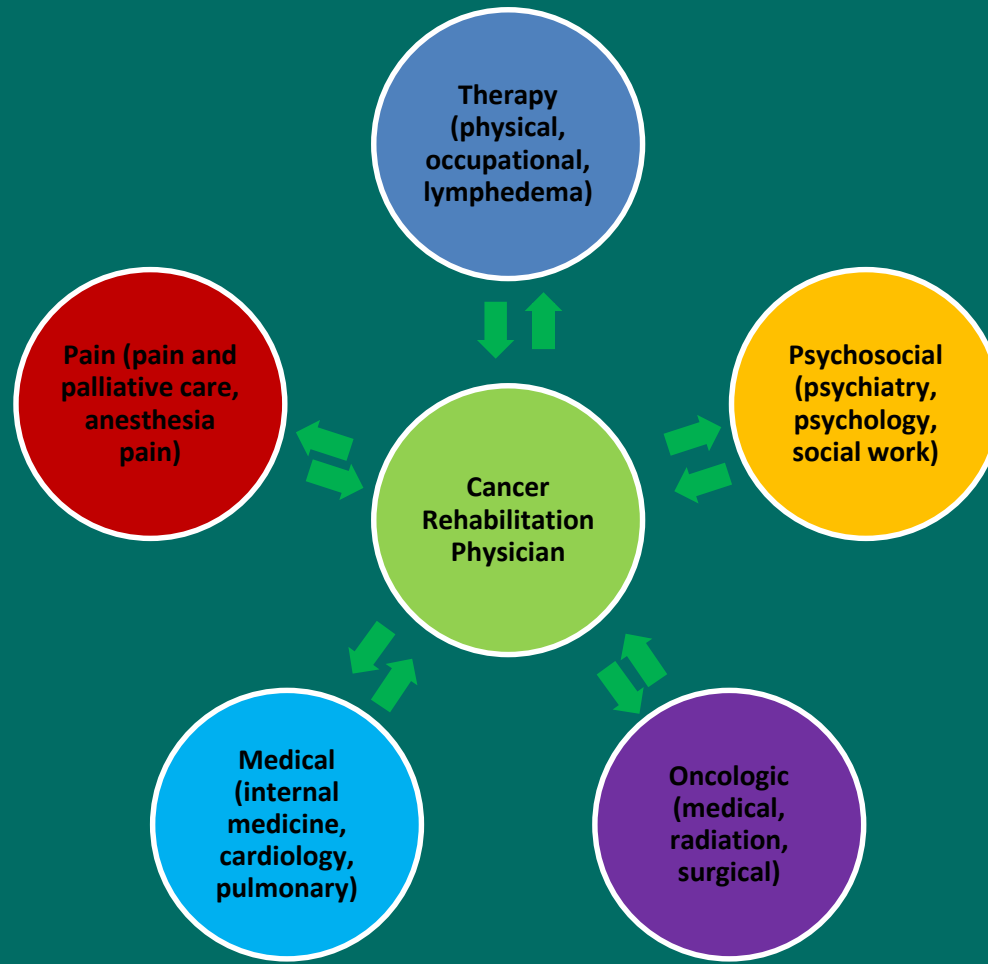
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Components of Comprehensive Cancer Rehabilitation



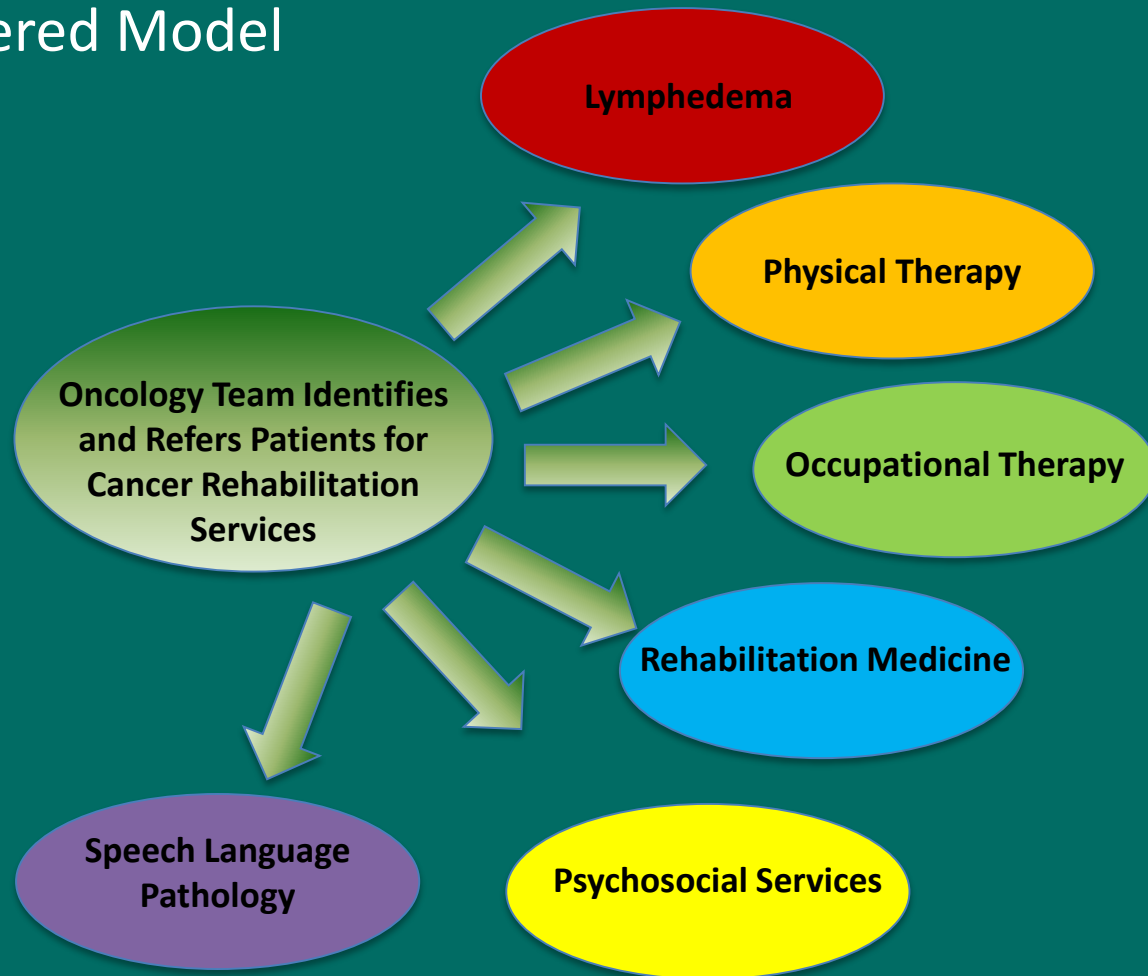
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Physiatry Centered Model



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Oncology Centered Model



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Risk-Screening for Unsupervised Exercise

Screening Cancer Survivors for Unsupervised Moderate- to Vigorous-Intensity Exercise

YES		NO				YES		NO	
Hematological Labs				Cardiovascular Disease History					
<input type="checkbox"/>	<input type="checkbox"/>	1.	Platelets <50,000	<input type="checkbox"/>	<input type="checkbox"/>	28.	Ventricular Ectopy	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	2.	Hemoglobin <10g/dl	<input type="checkbox"/>	<input type="checkbox"/>	29.	Myopericarditis	<input type="checkbox"/>	<input type="checkbox"/>
Musculoskeletal				<input type="checkbox"/>	<input type="checkbox"/>	30.	Significant ECG arrhythmias	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	3.	Bone, Back, or Neck Pain	<input type="checkbox"/>	<input type="checkbox"/>	31.	Cardiomyopathy	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	4.	Metastatic Bone Disease	<input type="checkbox"/>	<input type="checkbox"/>	32.	Congestive Heart Failure	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	5.	Unusual Muscular Weakness	<input type="checkbox"/>	<input type="checkbox"/>	33.	Aortic Stenosis	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	6.	Cachexia	<input type="checkbox"/>	<input type="checkbox"/>	34.	Myocardial Infarction	<input type="checkbox"/>	<input type="checkbox"/>
Systemic				<input type="checkbox"/>	<input type="checkbox"/>	35.	Coronary Angioplasty	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	7.	Karnofsky ≤60% or ECOG ≤2	<input type="checkbox"/>	<input type="checkbox"/>	36.	Valvular Disease	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	8.	Acute Infection	<input type="checkbox"/>	<input type="checkbox"/>	37.	Heart Transplant	<input type="checkbox"/>	<input type="checkbox"/>
Gastrointestinal				<input type="checkbox"/>	<input type="checkbox"/>	38.	Congenital Heart Disease	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	10.	Severe Nausea	Comorbidities					
<input type="checkbox"/>	<input type="checkbox"/>	11.	Vomiting/Diarrhea	<input type="checkbox"/>	<input type="checkbox"/>	39.	Cardiac Disease (other)	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	12.	Dehydration	<input type="checkbox"/>	<input type="checkbox"/>	40.	Peripheral Vascular Disease	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	13.	Inadequate Food/Fluid Intake	Implanted Medical Device					
Cardiovascular Symptoms				<input type="checkbox"/>	<input type="checkbox"/>	41.	Pacemaker	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	14.	Chest Pain at Rest	Medication					
<input type="checkbox"/>	<input type="checkbox"/>	15.	Chest Pain with Exertion	<input type="checkbox"/>	<input type="checkbox"/>	42.	Cardiac Agent	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	16.	SPB>145 or DBP>95	<input type="checkbox"/>	<input type="checkbox"/>	43.	_____ (other)	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	17.	Systolic Blood Pressure <85	<input type="checkbox"/>	<input type="checkbox"/>	44.	_____ (other)	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	18.	Irregular Pulse	<hr/>					
Pulmonary Symptoms				<input type="checkbox"/>	<input type="checkbox"/>	If you answered YES to one or more of the above-listed questions it is recommended that you undergo a pre-exercise evaluation prior to engaging in unsupervised moderate- to vigorous-intensity exercise.			
<input type="checkbox"/>	<input type="checkbox"/>	19.	Severe Dyspnea	<hr/>					
<input type="checkbox"/>	<input type="checkbox"/>	20.	Chest Pain with Deep Breath	If you answered NO to all of the above-listed questions it is not required that you undergo a pre-exercise evaluation prior to engaging in unsupervised moderate- to vigorous-intensity exercise, but may elect to do so on the basis of the recommendation of a healthcare professional or if you have concerns about the safety of moderate- or vigorous-intensity exercise.					
<input type="checkbox"/>	<input type="checkbox"/>	21.	Exercise-Induced Bronchospasm						
Neurologic Symptoms									
<input type="checkbox"/>	<input type="checkbox"/>	22.	Dizziness/Lightheaded						
<input type="checkbox"/>	<input type="checkbox"/>	23.	Disorientation						
<input type="checkbox"/>	<input type="checkbox"/>	24.	Blurred Vision						
<input type="checkbox"/>	<input type="checkbox"/>	25.	Ataxia						
<input type="checkbox"/>	<input type="checkbox"/>	26.	Orthostatic Hypotension						
<input type="checkbox"/>	<input type="checkbox"/>	27.	Recent Concussion						

If you answered YES to one or more the above-listed questions it is recommended that you undergo a pre-exercise evaluation prior to engaging in unsupervised moderate- to vigorous-intensity exercise.

Brown JC, et al. Development of a risk-screening tool for cancer survivors to participate in unsupervised moderate- to vigorous-intensity exercise – results from a survey study. PMR 2015;7:113-22.

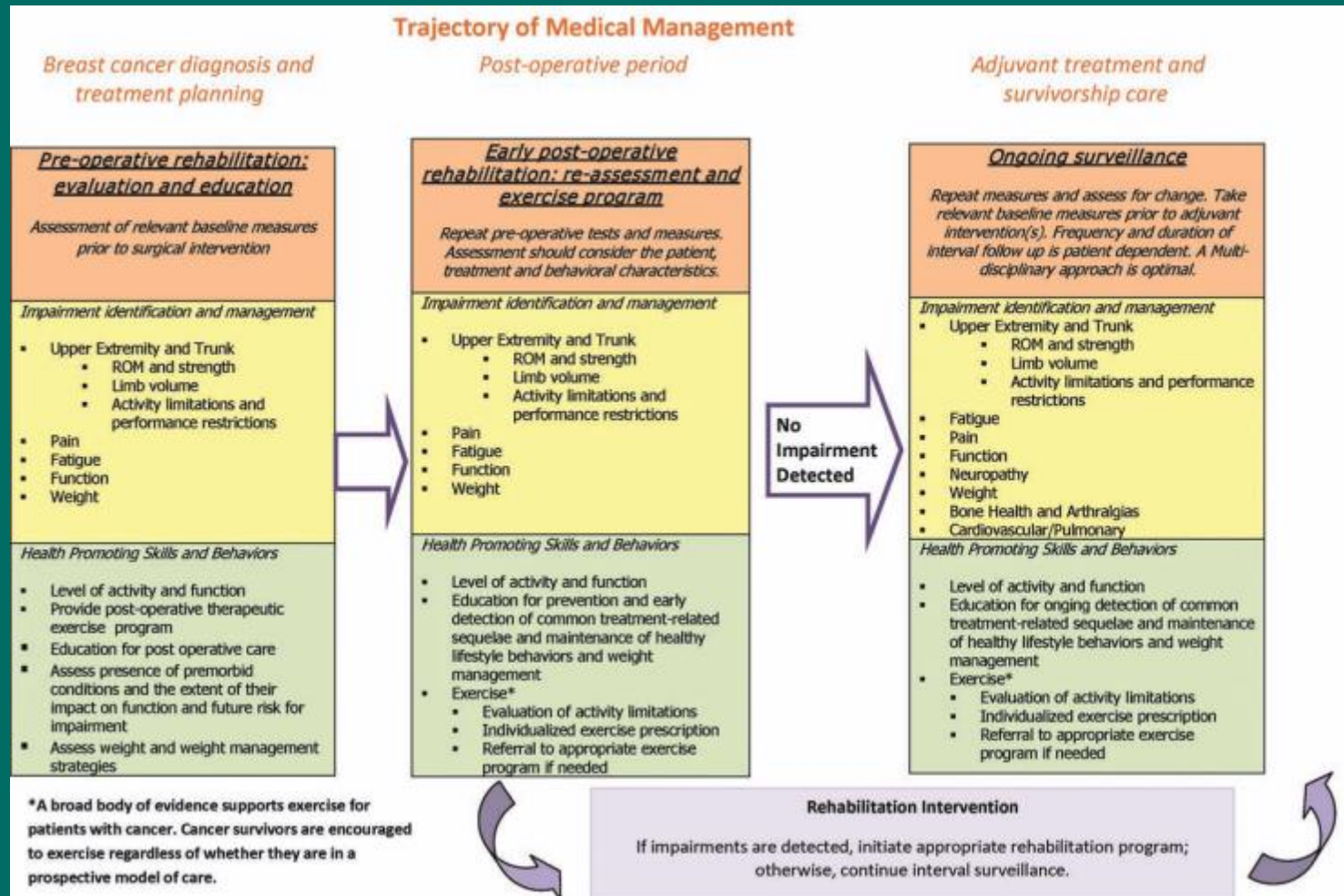
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Exercise Screening in 667 Breast Cancer Survivors

- 65 to 75% OK to participate in community/home-based exercises without further medical investigations or supervision.
- 35% need medical evaluation prior to starting a community/home-based exercise program.

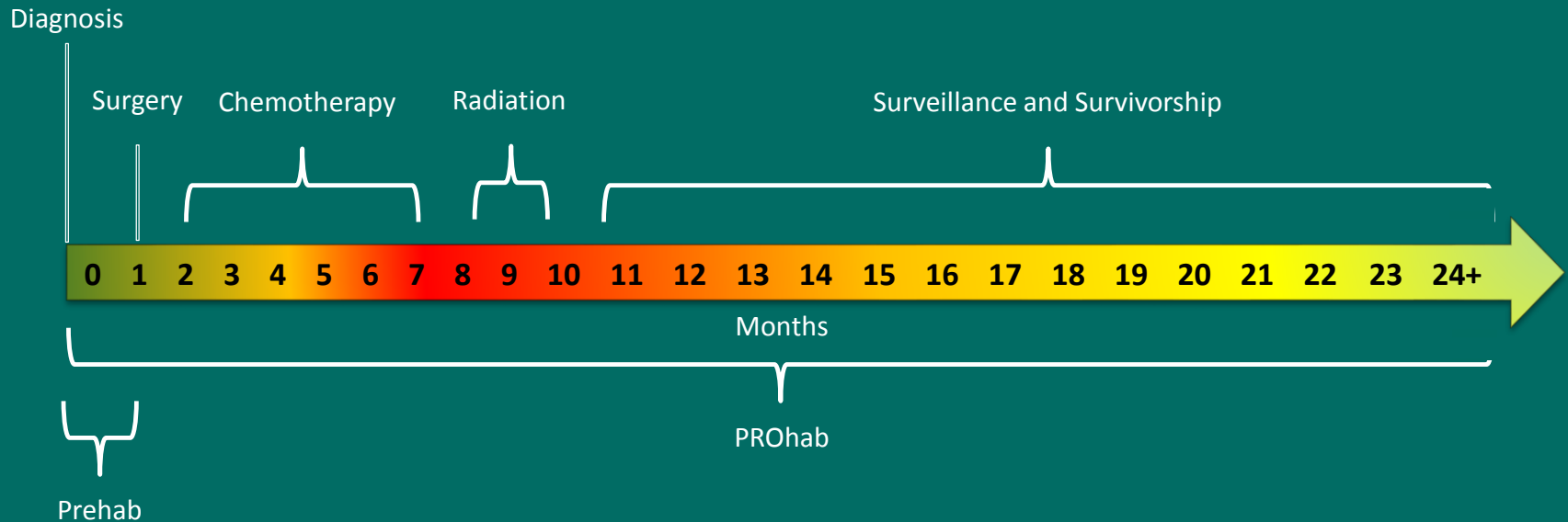
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Prospective Surveillance Model



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Prospective Rehabilitation (PROhab[®])



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Barriers to cancer rehabilitation care

Knowledge Barriers

- Education concerning cancer rehabilitation
- Awareness about cancer rehabilitation services
- Information about cancer rehabilitation services
- Clear definition of who makes referrals to cancer rehabilitation

Access Barriers

- Personal resources (time, money, transportation)
- Career rehabilitation clinicians (physicians, therapists, etc.)
- Suitable facilities for cancer rehabilitation (rehabilitation center, gym, parks, sidewalks, pool, etc.)
- Accessible cancer rehabilitation programs
- Clinician time to evaluate and refer patients to cancer rehabilitation
- Physician referral
- Funding for cancer rehabilitation programs

Adherence

- Convenience of services/clinicians
- Self-motivation
- Enjoyment of cancer rehabilitation program
- Self-confidence/ability to participate in a cancer rehabilitation program
- Self-management skills
- Encouragement/support
- Understanding of common barriers to cancer rehabilitation and how to overcome them
- Fear of injury
- Appointment fatigue
- Illness



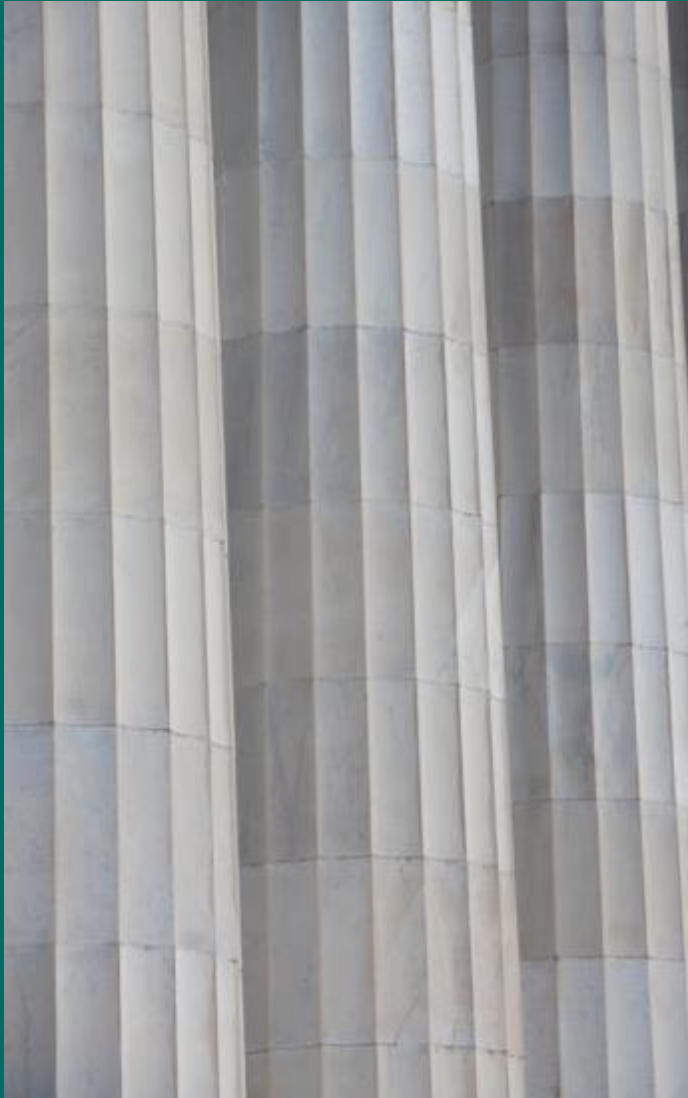
Where Are We Going?

“The secret of getting ahead is getting started.”

Mark Twain

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Stubblefield's Pillars of Survivorship



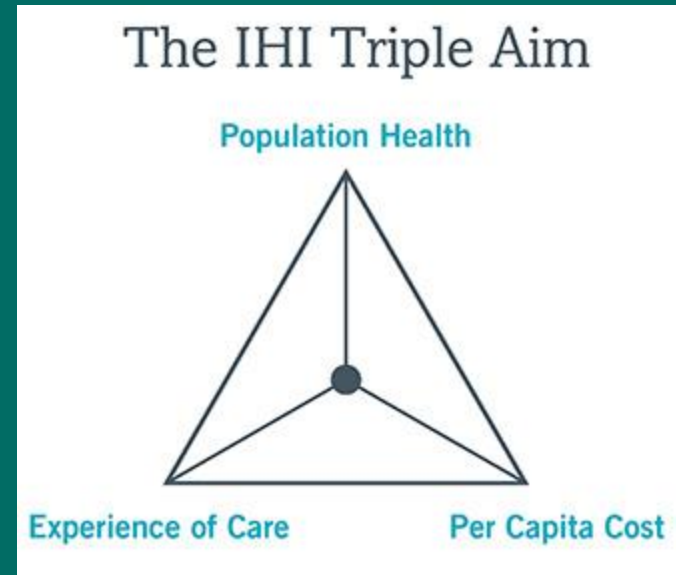
- Medical
- Functional
- Psychosocial

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Institute for Healthcare Improvement Triple Aim

The IHI Triple Aim is a framework developed by the Institute for Healthcare Improvement that describes an approach to optimizing health system performance.

- Improving the patient experience of care (including quality and satisfaction)
- Improving the health of populations
- Reducing the per capita cost of health care



Cancer Rehabilitation

What is an Accountable Care Organization (ACO)?

- Accountable Care Organizations (ACOs) are groups of doctors, hospitals, and other health care providers, who come together voluntarily to give coordinated high quality care to their Medicare patients.
- The goal of coordinated care is to ensure that patients, especially the chronically ill, get the right care at the right time, while avoiding unnecessary duplication of services and preventing medical errors.
- When an ACO succeeds both in delivering high-quality care and spending health care dollars more wisely, it will **share in the savings** it achieves for the Medicare program.

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Oncology Care Model (OCM)

“... an innovative, multi-payer model focused on providing higher quality, more coordinated oncology care. Under OCM, physician group practices have entered into payment arrangements that include financial and performance accountability for episodes of care surrounding chemotherapy administration to cancer patients. The practices participating in OCM have committed to providing enhanced services to Medicare beneficiaries, such as care coordination and navigation, and to using national treatment guidelines for care. OCM is a five-year model that begins on July 1, 2016, and runs through June 30, 2021.”

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OCM Quality Measures

OCM #	Measure Description	Source
OCM – 1	Risk-adjusted proportion of patients with all-cause hospital admissions within the 6-month episode	Claims
OCM – 2	Risk-adjusted proportion of patients with all-cause ED visits that did not result in a hospital admission within the 6-month episode	Claims
OCM – 3	Proportion of patients who died who were admitted to hospice for 3 days or more	Claims
OCM – 4a	Oncology: Medical and Radiation –Pain Intensity Quantified (NQF 0384/PQRS 143)	Practice
OCM – 4b	Oncology: Medical and Radiation –Plan of Care for Pain (NQF 0383/PQRS 144)	Practice
OCM – 5	Preventive Care and Screening: Screening for Depression and Follow-Up Plan (NQF 0418/ eCQMCMMS2.6.3)	Practice
OCM – 6	Patient-Reported Experience	Survey
OCM – 7	Prostate Cancer: Adjuvant Hormonal Therapy for High or Very High Risk Prostate Cancer (NQF 0390/PQRS 104)	Practice
OCM – 8	Adjuvant chemotherapy is recommended or administered within 4 months (120 days) of diagnosis to patients under the age of 80 with AJCC III (lymph node positive) colon cancer	Practice
OCM – 9	Combination chemotherapy is recommended or administered within 4 months (120 days) of diagnosis for women under 70 with AJCC T1cN0M0, or Stage IB -III hormone receptor negative breast cancer (NQF 0559)	Practice
OCM – 10	Trastuzumab administered to patients with AJCC stage 1 (T1c) –III and human epidermal growth factor receptor 2 (HER2) positive breast cancer who receive adjuvant chemotherapy (NQF 1858)	Practice
OCM – 11	Breast Cancer: Hormonal Therapy for Stage I (T1b)-IIIC Estrogen Receptor/Progesterone Receptor (ER/PR) Positive Breast Cancer (NQF 0387/eCQMCMMS140v5.0)	Practice
OCM – 12	Documentation of Current Medications in the Medical Record (NQF 0419/eCQMCMMS68v6.1)	Practice

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Value Propositions

- ER visits/hospitalizations
- Pain management
- Function
- Quality of life
- Return to work
- Cost of care

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ER Visits & Hospitalization

- Fatigue accounts for 2-23% all unplanned hospital admission among cancer patients who received chemotherapy within six months.¹⁻³
- Women with lymphedema have an increased likelihood of hospital admission (OR=5.2, P<0.001) compared with women without lymphedema, with significantly greater healthcare cost per person (\$58,088 vs. \$31,819, P<0.001).⁴

¹Aprile G, Pisa F, Follador A, Foltran L, De Pauli F, Mazzer M, et al. Unplanned presentations of cancer outpatients: a retrospective cohort study. *Supportive Care in Cancer*. 2013;21(2):397-404.

²Hassett MJ, O'malley AJ, Pakes JR, Newhouse JP, Earle CC. Frequency and cost of chemotherapy-related serious adverse effects in a population sample of women with breast cancer. *Journal of the National Cancer Institute*. 2006;98(16):1108-17.

³McKenzie H, Hayes L, White K, Cox K, Fethney J, Boughton M, et al. Chemotherapy outpatients' unplanned presentations to hospital: a retrospective study. *Supportive Care in Cancer*. 2011;19(7):963-9.

⁴Basta MN, Fox JP, Kanchwala SK, Wu LC, Serletti JM, Kovach SJ, et al. Complicated breast cancer-related lymphedema: evaluating health care resource utilization and associated costs of management. *The American Journal of Surgery*. 2016;211(1):133-41.

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Pain Management

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National
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NCCN Guidelines Version 1.2018 Adult Cancer Pain

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SPECIALTY CONSULTATIONS FOR IMPROVED PAIN MANAGEMENT

- Major indication for referral is:
 - ▶ Pain likely to be relieved or function improved through consultation delivered by a specialty service provider as suggested below. Note that the specific provider of these services may vary in different treatment settings.
- Pain and palliative care specialty consultation
 - ▶ [See NCCN Guidelines for Palliative Care](#)
 - ▶ Consider interventional strategies ([See PAIN-M](#))
 - ▶ Management of symptoms refractory to initial treatment
 - ▶ Management of sleep disturbances
 - ▶ Diagnosis and treatment of underlying condition
 - ▶ Consider oral or IV ketamine for pain resistant to other analgesics
 - ▶ Consider methadone in pain resistant to other opioids
 - ▶ Consider palliative sedation for intractable pain
 - ▶ Adjustment of drugs and doses beyond the expertise of the primary team/ oncologist
 - ▶ Management of complicated psychosocial issues, including aberrant drug behavior
 - ▶ Clarity of goals of care, especially regarding pain and medication side effects
- Mental health consultation
 - ▶ [See NCCN Guidelines for Distress Management](#)
 - ▶ Assessment
 - ◊ Diagnostic Interview: assess for depression, anxiety, psychiatric disease, and substance abuse disorder
 - ◊ Ongoing evaluation for misuse/abuse/diversion and other defined problems
 - ▶ Pharmacologic management and psychotherapy
 - ▶ Adaptive Coping Skills
 - ◊ Imagery
 - ◊ Distraction
 - ◊ Relaxation training
 - ◊ Active coping
 - ◊ Graded task assignments, setting goals, pacing, and prioritizing
 - ▶ Evidence-Based Treatment Modalities
 - ◊ CBT
 - ◊ MBSR
 - ◊ Acceptance-based therapy
- Evidence-Based Treatment Modalities continued
 - ◊ Biofeedback
 - ◊ Hypnosis
- Education
 - ◊ Communicate regarding need to accomplish pain relief but avoid misuse/diversion
 - ◊ Provide psycho-education
 - Discuss psychosocial factors that impact pain experience and perception
- Assist in establishing treatment agreements, limit setting, single provider/ pharmacy as needed
- Social work consultation
 - ▶ Caregiver burden and support needs
 - ▶ Recommend use of community care resources
- Spiritual care consultation
 - ▶ Determine importance to patient and family/caregiver and current availability of support
 - ▶ Manage spiritual, existential concerns
- Physical/occupational therapy, rehabilitation/mobility specialty consultation
 - ▶ Physical modalities
 - ◊ Bed, bath, and walking supports
 - ◊ Positioning instruction
 - ◊ Energy conservation, pacing of activities
 - ◊ Massage
 - ◊ Heat and/or ice
 - ◊ TENS
 - ◊ Acupuncture or acupressure
 - ◊ Ultrasonic stimulation
- Lymphedema management

Note: All recommendations are category 2A unless otherwise indicated.
Clinical Trials: NCCN believes that the best management of any cancer patient is in a clinical trial. Participation in clinical trials is especially encouraged.

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PAIN-L

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Restoring Function Data

- Upper limb exercise, including ROM and stretching, are helpful in recovering upper limb movement following breast cancer surgery.¹
- A meta-analysis of 15 randomized controlled trials assessing the safety and efficacy of progressive resistance training (PRT) in breast cancer concluded that PRT improves physical function and reduces breast cancer-related lymphedema.²
- A systematic review concluded that multimodal PT, including modalities such as stretching and active exercises, are effective in treating postoperative pain and impaired ROM following breast cancer treatment.³

¹McNeely ML, Campbell K, Ospina M, et al. Exercise interventions for upper-limb dysfunction due to breast cancer treatment. *Cochrane Database Syst Rev.* 2010(6):Cd005211.

²Cheema BS, Kilbreath SL, Fahey PP, Delaney GP, Atlantis E. Safety and efficacy of progressive resistance training in breast cancer: a systematic review and meta-analysis. *Breast Cancer Res Treat.* 2014;148(2):249-268.

³De Groef A, Van Kampen M, Dieltjens E, et al. Effectiveness of postoperative physical therapy for upper-limb impairments after breast cancer treatment: a systematic review. *Arch Phys Med Rehabil.* 2015;96(6):1140-1153.

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Quality of Life Data

- Leclerc AF, Slomian J, Jerusalem G, et al. Exercise and education program after breast cancer: benefits on **quality of life** and symptoms at 3, 6, 12, and 24 months' follow-up. Clin Breast Cancer 2018.
- Do JH, Choi KH, Ahn JS, Jeon JY. Effects of a complex rehabilitation program on edema status, physical function, and **quality of life** in lower-limb lymphedema after gynecological cancer surgery. Gynecol Oncol 2017;147:450-5.
- Leclerc AF, Foidart-Dessalle M, Tomasella M, et al. Multidisciplinary rehabilitation program after breast cancer: benefits on physical function, anthropometry and **quality of life**. European journal of physical and rehabilitation medicine 2017;53:633-42.
- Kwiatkowski F, Mouret-Reynier MA, Duclos M, et al. Long-term improvement of breast cancer survivors' **quality of life** by a 2-week group physical and educational intervention: 5-year update of the 'PACThe' trial. Br J Cancer 2017;116:1389-93.
- Hagstrom AD, Marshall PW, Lonsdale C, Cheema BS, Fiatarone Singh MA, Green S. Resistance training improves fatigue and **quality of life** in previously sedentary breast cancer survivors: a randomised controlled trial. Eur J Cancer Care (Engl) 2016;25:784-94.
- Cho Y, Do J, Jung S, Kwon O, Jeon JY. Effects of a physical therapy program combined with manual lymphatic drainage on shoulder function, **quality of life**, lymphedema incidence, and pain in breast cancer patients with axillary web syndrome following axillary dissection. Support Care Cancer 2016;24:2047-57.

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Return to Work

There is moderate quality evidence that multidisciplinary interventions enhance the return to work of patients with cancer.¹

¹de Boer AG, Taskila TK, Tamminga SJ, Feuerstein M, Frings-Dresen MH, Verbeek JH. Interventions to enhance return-to-work for cancer patients. Cochrane Database Syst Rev 2015:Cd007569.

Cancer Rehabilitation

Cost of Care

While there is very little literature to exploring cost savings for cancer rehabilitation, the studies that have been done showed favorable cost-effectiveness ratios.¹

¹Mewes JC, Steuten LM, Ijzerman MJ, van Harten WH. Effectiveness of multidimensional cancer survivor rehabilitation and cost-effectiveness of cancer rehabilitation in general: a systematic review. *Oncologist* 2012;17:1581-93.

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Cancer Rehabilitation Trends

- Accelerated shift to community cancer rehabilitation.
- Physical therapy will drive cancer rehabilitation.
- Recognition by NCI Comprehensive Cancer Centers that there is a need for outpatient cancer rehabilitation programs to support their rapidly growing survivorship community.
- Recognition by community oncology practices that support from cancer rehabilitation decompresses their oncologists, improves patient care and saves money.
- Accelerated development of cancer rehabilitation fellowships and residency rotations.
- Shift to quality-based incentives (i.e., ACOs, OCM) and bundling with pressure cost containment in oncology and rehabilitation.
- All rehabilitation initiatives will have to demonstrate value to survive.

Cancer Rehabilitation

Select Medical – ReVital Cancer Rehabilitation Program

Select Medical

- 50,000 Employees
- 27+ Rehabilitation Hospitals
- 1,600+ Outpatients Therapy Facilities
- 40+ States

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- 736 Certified Therapists
- 403 Locations
- 17 Markets
- 20 States

Thank You

