The Role of Rehabilitation in Comprehensive Cancer Care

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American Board of Physical Medicine & Rehabilitation
American Board of Electrodiagnostic Medicine
American Board of Internal Medicine

Living well beyond cancer.
Disclosures

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

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?
Cancer Rehabilitation

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.
Cancer Rehabilitation

Successful Rehabilitation Requires an 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
Cancer Rehabilitation

“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?
# Cancer Rehabilitation

## Five-year Relative Survival Rates

<table>
<thead>
<tr>
<th>Stage</th>
<th>All stages</th>
<th>Local</th>
<th>Regional</th>
<th>Distant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast (female)</td>
<td>90</td>
<td>99</td>
<td>85</td>
<td>27</td>
</tr>
<tr>
<td>Colon &amp; rectum</td>
<td>65</td>
<td>90</td>
<td>71</td>
<td>14</td>
</tr>
<tr>
<td>Colon</td>
<td>64</td>
<td>90</td>
<td>71</td>
<td>14</td>
</tr>
<tr>
<td>Rectum</td>
<td>67</td>
<td>89</td>
<td>70</td>
<td>15</td>
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<tr>
<td>Esophagus</td>
<td>19</td>
<td>45</td>
<td>24</td>
<td>5</td>
</tr>
<tr>
<td>Kidney†</td>
<td>75</td>
<td>93</td>
<td>69</td>
<td>12</td>
</tr>
<tr>
<td>Larynx</td>
<td>61</td>
<td>78</td>
<td>46</td>
<td>34</td>
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<tr>
<td>Liver‡</td>
<td>18</td>
<td>31</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>Lung &amp; bronchus</td>
<td>19</td>
<td>56</td>
<td>30</td>
<td>5</td>
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<tr>
<td>Melanoma of the skin</td>
<td>92</td>
<td>98</td>
<td>64</td>
<td>23</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Oral cavity &amp; pharynx</th>
<th>All stages</th>
<th>Local</th>
<th>Regional</th>
<th>Distant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ovary</td>
<td>47</td>
<td>92</td>
<td>75</td>
<td>29</td>
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<tr>
<td>Pancreas</td>
<td>9</td>
<td>34</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>Prostate</td>
<td>98</td>
<td>&gt;99</td>
<td>&gt;99</td>
<td>30</td>
</tr>
<tr>
<td>Stomach</td>
<td>31</td>
<td>68</td>
<td>31</td>
<td>5</td>
</tr>
<tr>
<td>Testis</td>
<td>95</td>
<td>99</td>
<td>96</td>
<td>74</td>
</tr>
<tr>
<td>Thyroid</td>
<td>98</td>
<td>&gt;99</td>
<td>98</td>
<td>56</td>
</tr>
<tr>
<td>Urinary bladder§</td>
<td>77</td>
<td>69</td>
<td>35</td>
<td>5</td>
</tr>
<tr>
<td>Uterine cervix</td>
<td>66</td>
<td>92</td>
<td>56</td>
<td>17</td>
</tr>
<tr>
<td>Uterine corpus</td>
<td>81</td>
<td>95</td>
<td>69</td>
<td>16</td>
</tr>
</tbody>
</table>

*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.


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Cancer Rehabilitation

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”.

Cancer Rehabilitation
Survivorship in Context

• 16.9 million cancer survivors in 2020
• 22.1 million cancer survivors by 2030
• 291,000 spinal cord injury survivors in 2018

Cancer Rehabilitation
Impairments in Cancer Survivors

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

Cancer Rehabilitation
Causes of Impairments in Cancer Survivors

• Systemic Therapy
  - Chemotherapy
  - Hormonal Therapy
  - Biologic Therapy
  - Targeted Therapy

• Radiotherapy

• Surgery

• Tumor

• Degenerative Disease

• Other
Cancer Rehabilitation
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
Cancer Rehabilitation
Components of Comprehensive Cancer Rehabilitation

- Rehab Medicine
- Pain and Palliative Care
- Lymphedema Therapy
- Anesthesia Pain
- Orthopedic Surgery
- Integrative Medicine
- Medical Oncology
- Physical Therapy
- Speech Language Pathology
- Occupational Therapy

Kessler Institute for Rehabilitation
ReVital Cancer Rehabilitation
Cancer Rehabilitation
Physiatry Centered Model

Cancer Rehabilitation
Oncology Centered Model

Oncology Team Identifies and Refers Patients for Cancer Rehabilitation Services

Lymphedema
Physical Therapy
Occupational Therapy
Rehabilitation Medicine
Psychosocial Services
Speech Language Pathology

Cancer Rehabilitation
Risk-Screening for Unsupervised Exercise


<table>
<thead>
<tr>
<th>Screening Cancer Survivors for Unsupervised Moderate- to Vigorous-Intensity Exercise</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hematological Labs</strong></td>
</tr>
<tr>
<td>□ □ 1. Platelets &lt;50,000</td>
</tr>
<tr>
<td>□ □ 2. Hemoglobin &lt;10g/dl</td>
</tr>
<tr>
<td><strong>Musculoskeletal</strong></td>
</tr>
<tr>
<td>□ □ 4. Metastatic Bone Disease</td>
</tr>
<tr>
<td>□ □ 5. Unusual Muscular Weakness</td>
</tr>
<tr>
<td>□ □ 6. Cachexia</td>
</tr>
<tr>
<td>□ □ 7. Karnosky ≤ 60% or ECOG ≤ 2</td>
</tr>
<tr>
<td><strong>Systemic</strong></td>
</tr>
<tr>
<td>□ □ 8. Acute Infection</td>
</tr>
<tr>
<td>□ □ 9. Fever &gt;100°F</td>
</tr>
<tr>
<td><strong>Gastrointestinal</strong></td>
</tr>
<tr>
<td>□ □ 10. Severe Nausea</td>
</tr>
<tr>
<td>□ □ 11. Vomiting/Diarrhea</td>
</tr>
<tr>
<td>□ □ 12. Dehydration</td>
</tr>
<tr>
<td>□ □ 13. Inadequate Food/Fluid Intake</td>
</tr>
<tr>
<td><strong>Cardiovascular Symptoms</strong></td>
</tr>
<tr>
<td>□ □ 14. Chest Pain at Rest</td>
</tr>
<tr>
<td>□ □ 15. Chest Pain with Exertion</td>
</tr>
<tr>
<td>□ □ 16. SBP &gt;145 or DBP &gt;95</td>
</tr>
<tr>
<td>□ □ 17. Systolic Blood Pressure &lt;85</td>
</tr>
<tr>
<td>□ □ 18. Irregular Pulse</td>
</tr>
<tr>
<td><strong>Pulmonary Symptoms</strong></td>
</tr>
<tr>
<td>□ □ 19. Severe Dyspnea</td>
</tr>
<tr>
<td>□ □ 20. Chest Pain with Deep Breath</td>
</tr>
<tr>
<td>□ □ 21. Exercise-Induced Bronchospasm</td>
</tr>
<tr>
<td><strong>Neurologic Symptoms</strong></td>
</tr>
<tr>
<td>□ □ 22. Dizziness/Lightheaded</td>
</tr>
<tr>
<td>□ □ 23. Disorientation</td>
</tr>
<tr>
<td>□ □ 24. Blurred Vision</td>
</tr>
<tr>
<td>□ □ 25. Ataxia</td>
</tr>
<tr>
<td>□ □ 26. Orthostatic Hypotension</td>
</tr>
<tr>
<td>□ □ 27. Recent Concussion</td>
</tr>
</tbody>
</table>

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.
Cancer Rehabilitation
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.

Cancer Rehabilitation
Prospective Rehabilitation (PROhab®)
Cancer Rehabilitation

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

Stubblefield MD. The Underutilization of Cancer Rehabilitation to Treat Physical Impairments in Breast Cancer Survivors. PM&R. 2017 (in press).
“The volume and complexity of what we know has exceeded our individual ability to deliver its benefits correctly, safely, or reliably.”

— Atul Gawande, The Checklist Manifesto: How to Get Things Right
Where Are We Going?

“The secret of getting ahead is getting started.”

Mark Twain
Cancer Rehabilitation
Stubblefield’s Pillars of Survivorship

• Medical
• Functional
• Psychosocial
Cancer Rehabilitation
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

http://www.ihi.org/Engage/Initiatives/TripleAim/Pages/default.aspx
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.

https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/ACO/
Cancer Rehabilitation
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.”

# Cancer Rehabilitation

## OCM Quality Measures

<table>
<thead>
<tr>
<th>OCM #</th>
<th>Measure Description</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>OCM – 1</td>
<td><strong>Risk-adjusted proportion of patients with all-cause hospital admissions within the 6-month episode</strong></td>
<td>Claims</td>
</tr>
<tr>
<td>OCM – 2</td>
<td><strong>Risk-adjusted proportion of patients with all-cause ED visits that did not result in a hospital admission within the 6-month episode</strong></td>
<td>Claims</td>
</tr>
<tr>
<td>OCM – 3</td>
<td><strong>Proportion of patients who died who were admitted to hospice for 3 days or more</strong></td>
<td>Claims</td>
</tr>
<tr>
<td>OCM – 4a</td>
<td><strong>Oncology: Medical and Radiation – Pain Intensity Quantified (NQF 0384/PQRS 143)</strong></td>
<td>Practice</td>
</tr>
<tr>
<td>OCM – 4b</td>
<td><strong>Oncology: Medical and Radiation – Plan of Care for Pain (NQF 0383/PQRS 144)</strong></td>
<td>Practice</td>
</tr>
<tr>
<td>OCM – 5</td>
<td><strong>Preventive Care and Screening: Screening for Depression and Follow-Up Plan (NQF 0418/ eCQMCMS2.6.3)</strong></td>
<td>Practice</td>
</tr>
<tr>
<td>OCM – 6</td>
<td><strong>Patient-Reported Experience</strong></td>
<td>Survey</td>
</tr>
<tr>
<td>OCM – 7</td>
<td><strong>Prostate Cancer: Adjuvant Hormonal Therapy for High or Very High Risk Prostate Cancer (NQF 0390/PQRS 104)</strong></td>
<td>Practice</td>
</tr>
<tr>
<td>OCM – 8</td>
<td><strong>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</strong></td>
<td>Practice</td>
</tr>
<tr>
<td>OCM – 9</td>
<td><strong>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)</strong></td>
<td>Practice</td>
</tr>
<tr>
<td>OCM – 10</td>
<td><strong>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)</strong></td>
<td>Practice</td>
</tr>
<tr>
<td>OCM – 11</td>
<td><strong>Breast Cancer: Hormonal Therapy for Stage I (T1b)-IIIC Estrogen Receptor/Progesterone Receptor (ER/PR) Positive Breast Cancer (NQF 0387/eCQMCMS140v5.0)</strong></td>
<td>Practice</td>
</tr>
<tr>
<td>OCM – 12</td>
<td><strong>Documentation of Current Medications in the Medical Record (NQF 0419/eCQMCMS68v6.1)</strong></td>
<td>Practice</td>
</tr>
</tbody>
</table>

https://innovation.cms.gov/initiatives/Oncology-Care/
Cancer Rehabilitation

Value Propositions

• ER visits/hospitalizations
• Pain management
• Function
• Quality of life
• Return to work
• Cost of care
Cancer Rehabilitation

ER Visits & Hospitalization

• Fatigue accounts for 2-23% all unplanned hospital admission among cancer patients who received chemotherapy within six months.\textsuperscript{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, \(P<0.001\)).\textsuperscript{4}

Cancer Rehabilitation
Pain Management

NCCN Guidelines Version 1.2018
Adult Cancer Pain

SPECIALTY CONSULTATIONS FOR IMPROVED PAIN MANAGEMENT

- Major indication for referral:
  - 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
  - Clarify 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/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
        - 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
              - Cold, hot, and walking supports
              - Positioning instruction
              - Energy conservation, pacing of activities
              - Massage
              - Heat and/or Ice
              - TENS
              - Acupuncture or acupressure
              - Ultrasound 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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Cancer Rehabilitation
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

Cancer Rehabilitation

Quality of Life Data


Cancer Rehabilitation

Return to Work

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

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

Cancer Rehabilitation

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

ReVital
• 736 Certified Therapists
• 403 Locations
• 17 Markets
• 20 States
Thank You