

PM&R BOLD: Cancer rehabilitation medicine core services

INTRODUCTION

The American Academy of Physical Medicine and Rehabilitation (AAPM&R) began the PM&R BOLD initiative in 2016 to gather input across the specialty of physical medicine and rehabilitation and develop a vision for the future. The specialty's vision is supported by a strategic plan representing practice areas across the specialty. The PM&R BOLD envisioned future for cancer rehabilitation medicine (CRM), developed in 2018, includes (1) that physiatrists lead the development, validation, and timely implementation of high-value cancer rehabilitation medical care; (2) physiatrist involvement early and throughout a patient's journey ensures a critical focus on quality of life and function and offers cohesion of clinical care, improved efficiencies, reduced potential medical errors and secondary complications, minimization of unnecessary tests, reduced patient anxiety, and improved compliance; and (3) physiatrist-led CRM is recognized nationally as a standard of care. The strategic plan prioritized delineation of core services as a fundamental step in conveying the expertise of physiatrists in cancer care.

Goals of defining CRM core services specifically include:

1. Cultivating universally understood standards of what a referring oncologist and the public can expect from physiatry
2. Clarifying which services should be common to all or most cancer rehabilitation programs
3. Helping to position physiatry as essential as seen in the vision statement and be valued by a large cross-section of stakeholders including patients, caregivers, oncology care teams, payers, and leaders of health systems
4. Facilitating the building of well-rounded cancer rehabilitation clinical programs
5. Assisting with identifying priority areas for education and research

With its emergent burgeoning activity,¹ various professional aspects of cancer rehabilitation have begun to receive attention, including physiatrist practice patterns,² physician workforce training expectations,^{3,4} and the roles of cancer rehabilitation team members.⁵ However, vast challenges remain in optimizing availability and

integration of rehabilitation services for the millions of cancer patients and survivors.⁶ While respecting the heterogeneity of practice environment and culture, growing recognition exists of the need to bring more cohesion to CRM education and clinical practice, so that the needs of these patients can be more effectively addressed.

The chasm between prevalence of disability in cancer patients and the provision of rehabilitation care, even in highly remediable situations, has been recognized for decades.⁷ The current number of cancer survivors in the United States is estimated as 18 million as of January 2022,⁸ indicative of ever-increasing population health relevance. A recent systematic review examining prevalence of disability in individuals with chronic illness found high rates of disability in the cancer cohort, including functional late effects (physical and/or cognitive) in 30.2%–74.5%, activities of daily living impairment in 10.4%–34.5%, upper body impairment in 60.0%–94.7%, fatigue in 78.7%, pain in 14.8%–44.4%, and poor performance status in 19.8% of patients.⁹ A large survey of cancer survivors conducted by the American Cancer Society found physical problems to be the most commonly coded unmet need, at 38%.¹⁰ However, rates of treatment for cancer-related impairment and disability remain much lower than these figures and have been reported to range as low as 1%–2%.¹¹ Factors attributed to causing this gap have included fractured health care systems, patient-related barriers and strains, lack of an adequate and effectively distributed cancer rehabilitation workforce, the complex nature of many of the needs of cancer survivors, and, notably, “a critical need to forge consensus regarding its (cancer rehabilitation's) scope” and to resolve issues of “uncertainty regarding the roles of different disciplines”; these latter factors have resulted in “idiosyncratic and institution-specific patterns of care delivery,” which in turn have prevented oncological stakeholders from developing consistent expectations of cancer rehabilitation, including physiatry.¹¹ Oncologic systems historically may view cancer rehabilitation in an excessively reductionistic fashion as treating lymphedema or fatigue, without a broader awareness of the scope inherent in rehabilitation care.¹² Providing a framework to ameliorate gaps in care delivery that relate to nebulous existing expectations of cancer rehabilitation, and in particular of cancer rehabilitation physiatry, is the fundamental aim of this work.

These CRM core services, built via an iterative expert consensus process, are intended to provide a basic

structure for expectations and needed evidence-based growth of the field and to synergize with substantial cancer rehabilitation advocacy efforts of recent years. A subject matter expert group in 2016¹³ recommended “rehabilitation screening and assessment as part of a comprehensive cancer care plan, from the time of diagnosis, throughout the course of illness and recovery, to address the functional needs of patients.” Additional recommendations included pretreatment rehabilitation in selected cancers, development and use of appropriate clinical measurement tools, development of practice guidelines, promotion of increased “awareness and education among health care providers, patients and payers regarding rehabilitation as an integral part of quality cancer care,” and identification of research gaps in cancer rehabilitation domains in order to increase funding mechanisms. A report from the 2019 National Cancer Institute Cancer Survivorship Workshop, focusing on evidence gaps, identified “management of long term and late physical effects” and “care coordination” as two of six major priorities.¹⁴ Unfortunately, rehabilitation services are often missing in oncology care guidelines, which may partially explain gaps in care.¹⁵

Gradually, cancer rehabilitation is increasingly recognized as integral to oncology care and as of 2020 has enhanced requirements in the Commission on Cancer standards, including delineation of on-site and off-site rehabilitation care services, description of the rehabilitation care team available on site, criteria for performing functional assessments, and criteria for referral to a rehabilitation care specialist. Identification of core services can provide a framework toward addressing these requirements.¹⁶

The broad nature of cancer rehabilitation necessitates a focused approach to education. A recent multicenter study comprising 616 patients from cancer rehabilitation physiatry clinics at six U.S. institutions found that the most common types of cancer in this population, by percentages, were breast (42.5), hematologic (32.8), head and neck (9.3), gynecologic (7), sarcoma (6.7), central nervous system (4.7), prostate (4.7), lung (3.6), and colorectal (3.4).¹⁷ Additionally, in a survey of Korean physiatrists, Yang et al. “found differences in the availability and delivery of rehabilitation services according to type of cancer,” with rehabilitation services being most available for breast and central nervous system cancer patients, but significantly less so for individuals with gynecological cancer, colorectal cancer, and prostate cancer, as well as for “exercise and mobilization programs during cancer treatment, weight control programs, and sexual rehabilitation” even though they were considered medically necessary for patients.¹⁸ A systematic review by Harrison et al. noted the importance of not just considering type of cancer, but the type of functional need (ie, activities of daily living, physical, etc.), and the phase of treatment, such as during treatment or posttreatment.¹⁹

METHODS

Defining CRM core services was the initial priority per CRM strategic plan, developed in conjunction with a think tank of cancer rehabilitation physiatrists that met in July 2018. The two CRM co-chairs of the newly formed PM&R BOLD Steering Committee developed a draft outline and contents in May–June 2019, through a combination of experience and review of other data including literature and guideline topics. The core services were categorized into five groupings: global impairment/symptom specific, cancer-diagnosis specific, procedures, wellness/survivorship, and areas of practice/other.

This draft was refined over multiple stages including an in-depth survey of AAPM&R’s CRM community (approximately 60 respondents, Figure 1), a 3-hour CRM learning collaborative (approximately 100 attendees) in November 2019 at the AAPM&R Annual Assembly, both of which were focused on collecting input. The 2019 Learning Collaborative was structured to include brief presentations on guidelines and practice exemplars, as well as small- and large-group discussion. The draft underwent ongoing refinement per deliberative process of an eight-member CRM workgroup. The final version was made available for comment before and during a virtual learning collaborative held on March 6, 2021.

CORE SERVICES

The following core services list procedures, services, and knowledge areas that are commonly provided by CRM physiatrists and valued by patients, caregivers, oncology care teams, payers, and leaders of health systems. If a core service is specialized in nature and may require additional training and not be performed by all CRM physiatrists, it is denoted with “some specialized CRM physiatrists.”

GLOBAL IMPAIRMENT/SYMPTOM SPECIFIC

- Mobility-related impairments and physical performance
- Diagnosis and treatment of pain related to cancer/cancer treatment
- Musculoskeletal/neuromuscular disorders in cancer
- Rehabilitation management for bone metastasis
- Radiation fibrosis syndrome
- Cancer-related fatigue
- Cancer-related cognitive impairment
- Lymphedema
- Cancer-related neuropathies
- Bone health strategies - Some specialized CRM physiatrists

Service or Procedure	Physiatrist Ideal	Physiatrist Actual	Physiatrist Variance	Program Ideal	Program Actual	Program Variance
Rehabilitation during treatment	4.7	4.2	0.5	4.6	4.1	0.5
Breast Cancer Rehabilitation	4.7	4.1	0.6	4.7	4.1	0.6
Peripheral polyneuropathy	4.7	4.2	0.5	4.6	4	0.6
Exercise	4.6	4.3	0.3	4.6	3.9	0.7
Head and Neck Cancer Rehabilitation	4.6	3.8	0.8	4.6	3.8	0.8
Neurological tumor rehabilitation	4.6	4.1	0.5	4.6	3.9	0.7
Inpatient rehabilitation consults	4.5	3.5	1	4.4	3.8	0.6
Lymphedema	4.4	3.9	0.5	4.6	No data collected	
Prehabilitation	4.4	3.5	0.9	4.4	No data collected	
Fatigue	4.4	4.1	0.3	4.4	3.7	0.7
Survivorship	4.3	3.8	0.5	4.4	3.8	0.6
Bone metastasis, bone health strategies	4.3	3.7	0.6	4.4	3.5	0.9
Hematologic malignancy rehabilitation	4.3	3.7	0.6	4.5	3.6	0.9
Cognition	4.3	3.8	0.5	4.1	3.6	0.5
Inpatient acute rehabilitation	4.3	3.2	1.1	4.2	3.5	0.7
Advanced cancer issues	4.1	3.7	0.4	4.2	3.6	0.6
Research	4	73% yes		4	3.3	0.7
Landmark-guided (office) injection procedures	4	65% yes		3.8	3.7	0.1
Pelvic floor rehabilitation	3.8	2.6	1.2	3.8	3.2	0.6
Psychological issues	3.8	3.6	0.2	3.9	3.5	0.4
Employment issues	3.8	3	0.8	3.7	3	0.7
Spasticity management (including botulinum toxin and/or ITB)	3.8	60% yes		3.8	3.6	0.2
Pediatric cancer rehabilitation	3.7	1.9	1.8	3.7	2.5	1.2
Nutrition	3.7	3.3	0.4	3.8	3.5	0.3
Electrodiagnosis (EMG/NCV's)	3.7	32% yes		3.7	3.5	0.2
Image-guided (ultrasound, fluoro) Injection procedures	3.6	40% yes		3.7	3.5	0.2
Sexuality	3.5	2.4	1.1	3.3	2.7	0.6
Ultrasound diagnostic evaluation (musculoskeletal)	3.5	20% yes		3.6	3.1	0.5

FIGURE 1 2019 survey data (60 respondents) showing variances between actual and ideal physiatrist practice and cancer rehabilitation programs for the listed service topics. Limitations: Two topic areas were inadvertently omitted from Survey 1, including provider and program data for pain management (nonopioid and opioid) and program data for prehabilitation; however, these issues were considered and incorporated into other phases of the process and are reflected in the final product. Abbreviations: EMG, electromyography; ITB, intrathecal baclofen therapy; NCV, nerve conduction velocity.

CANCER-DIAGNOSIS SPECIFIC

- Breast
- Gastrointestinal
- Genitourinary
- Gynecologic
- Head and neck
- Hematologic malignancy including hematopoietic stem cell transplantation
- Neurological tumors
- Thoracic/lung
- Melanoma
- Primary bone and soft tissue

- Botulinum toxin injection for cancer-related pain syndromes - Some specialized CRM physiatrists
- Integrative techniques, dry needling, acupuncture - Some specialized CRM physiatrists

WELLNESS/SURVIVORSHIP

- Employment/disability/community issues
- Exercise in cancer
- Prehabilitation
- Survivorship
- Nutrition in cancer patients - Some specialized CRM physiatrists
- Sexuality - Some specialized CRM physiatrists

PROCEDURES

- Landmark-guided (office) injection procedures
- Electrodiagnosis (electromyography/nerve conduction velocity)
- Botulinum toxin injection for spasticity
- Image-guided fluoroscopic injections - Some specialized CRM physiatrists
- Image-guided ultrasound injections - Some specialized CRM physiatrists
- Ultrasound diagnostic evaluation (musculoskeletal) - Some specialized CRM physiatrists

AREAS OF PRACTICE/OTHER

- Inpatient rehabilitation consults
- Inpatient acute rehabilitation
- Outpatient rehabilitation
- Assessment of rehabilitation level of care/postacute care management and decision making
- Prosthetics, orthotics, adaptive aids, and other equipment
- Interdisciplinary rehabilitation team leadership and care coordination

- Rehabilitation during treatment
- Advanced cancer (impact on rehabilitation approach, ie, goal setting, precautions)
- Pediatric cancer rehabilitation - Some specialized CRM physiatrists
- Complementary and integrative health strategies (including osteopathic) - Some specialized CRM physiatrists

DISCUSSION

This preceding list is comprehensive, and the authors acknowledge that no two practices are the same. Each CRM physiatrist's practice may vary based on the practice setting, needs, and populations served. Rather than a mandate for each practicing physiatrists to meet, the core services list is a key tool for many future projects including:

- defining educational needs for physiatrists in training, in fellowship, and in practice
- participating in national dialogues and advocating for the value of physiatrist-led CRM
- providing a structure for individual advocacy helping CRM physiatrists within their own program and/or building a new program

Additional discussion demonstrated strong consensus around the value of these core services for internal program use in organizing and improving CRM practice, as well as for external use in practice promotion. Although it is not a formal curriculum, there is also consensus around usefulness of the core services elements in framing educational goals. The five major categories also show consensus as being appropriate. Of note, the comment period including Learning Collaborative discussion, did not reveal recommendations for major changes, mainly consisting of rephrasing of names of existing subcategories.

Because of the physiatry focus, it is beyond the scope of these core services to consider how these elements intersect with the roles of other rehabilitation providers, who are clearly essential to high-quality cancer rehabilitation patient care.


Primarily, this project's aim is to provide a structured practice-focused context for cancer rehabilitation medicine, to cultivate professional expertise and practice growth, and ultimately better outcomes for patients with cancer diagnoses.

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