

Issue #3: Cancer Rehabilitation and Physical Impairment from cancer treatment**ISSUE STATEMENT & RATIONALE/EVIDENCE BASED RESEARCH:**

Physical impairments after cancer treatment increase distress, morbidity and mortality. Targeted, cancer-specific physical rehabilitation and cancer-specific exercise has been shown to reduce physical frailty, reduce disability, lengthen survival and improve quality of life in cancer survivors. Part of required distress screening is the imperative to utilize qualified professionals to address the distress caused by physical impairments imposed by cancer. Research has shown that cancer survivors are not being referred for existing rehabilitation and cancer exercise services and that there are not enough qualified rehabilitation professionals and cancer exercise specialists to meet the needs of the increasing numbers of cancer survivors, particularly with increasing elderly and frail survivors. Additionally, minority populations and populations who do not access traditional medical services are excluded from this care.

- **“Cancer Rehabilitation is medical care that should be integrated throughout the oncology care continuum and delivered by trained rehabilitation professionals who have it within their scope of practice to diagnose and treat patients’ physical, psychological, cognitive and functional impairments in an effort to maintain or restore function, reduce symptom burden, maximize independence and improve quality of life in this medically complex population.”** Silver JK, Raj VS, Fu JB, Wisotzky EM, Smith SR, Kirch RA. *Cancer rehabilitation and palliative care: critical components in the delivery of high-quality oncology services. Support Care Cancer.* 2015 Dec;23(12):3633-43.
- **Cancer treatment induces a state of physical impairment that can lead to poor treatment outcomes that could be ameliorated with rehabilitation.** Jack, S. *The effect of neoadjuvant chemotherapy on physical fitness and survival in patients undergoing oesophagogastric cancer surgery. EJSO xx (2014) 1e8.* Kilgour R. *Handgrip strength predicts survival and is associated with markers of clinical and functional outcomes in advanced cancer patients. Support Care Cancer (2013) 21:3261–3270.* Koelwyn, G. *Running on Empty: Cardiovascular Reserve Capacity and Late Effects of Therapy in Cancer Survivorship. Journal of Clinical Oncology, Vol 30, No 36 (December 20), 2012; pp 4458-4461.* Okumura, S. *Impact of preoperative quality as well as quantity of skeletal muscle on survival after resection of pancreatic cancer 2015. Surgery. doi.org/10.1016/j.surg.2015.02.002.* Silver, J et. *Impairment Driven Cancer Rehabilitation: an essential component of quality care and survivorship. CA Cancer J 2013 May 17. doi: 10.1002/caac.21186.*
- **Distress in cancer survivors is highly correlated with physical limitations imposed by cancer treatment.** Bornbaum, K. *A descriptive analysis of the relationship between quality of life and distress in individuals with head and neck cancer. Support Care Cancer.* 2011. DOI 10.1007/s00520-011-1326. Penttinen, H. *QoL and Physical performance and activity of breast cancer patients after adjuvant treatment. Psycho-Oncology 2011. 20: 1211–1220.* Banks, E. *Is psychological distress in people living with cancer related to the fact of diagnosis, current treatment or level of disability? Findings from a large Australian study. MJA 2010; 193: S62–S67.* Holm, L. *Influence of comorbidity on cancer patients’ rehab needs, participation in rehab activities and unmet needs: a population-based cohort study. Support Care Cancer 2014. 22:2095-2105.* Hayes, S *Lymphedema After Breast Cancer: Incidence, Risk Factors, and Effect on Upper Body Function. 2008 J Clin Oncol 28, 3536-3542*
- **25% of cancer survivors have poor physical health and 10% have poor mental health compared with 10% and 6% of adults without a history of cancer respectively.** Weaver, K. *Mental and Physical Health-Related Quality of Life among US Cancer Survivors: Population Estimates from the 2010 National Health Interview Survey. Cancer Epidemiol Biomarkers Prev; 2012. 21(11);2108-1.*
- **In spite of research showing rehabilitation improves functional outcomes, cancer survivors receive few referrals to qualified rehabilitation professionals relative to the burden of remediable physical impairment.** Cheville, A. *The detection and treatment of cancer-related functional problems in an*

outpatient setting” *Supportive Care in Cancer*. 2009 Jan;17(1):61. Cheville, A. An Examination of the Causes for the Underutilization of Rehabilitation Services Among People with Advanced Cancer. *Am J Phys Med Rehabil* 2011;90(suppl):S27YS37. Cheville, A, et al. Prevalence and treatment patterns of physical impairments in patients with metastatic breast cancer. 2008 *J Clin Oncol*. 26(16):2621-9. Cheville, A. Barriers to Rehabilitation Following Surgery for Primary Breast Cancer. *J Surg Oncol* 2007;95: 409-18. Thorsen, L et al. Cancer Patients Needs for Rehabilitation Services. *ACTA Oncologica*. 2011 50: 212-222. Vargo, M. The Oncology-Rehabilitation Interface: better systems needed. *J Clinical Oncol*. 2008. (16) 2610. Spill GR, Hlubocky FJ, Daugherty CK (2012) Oncologists’ and physiatrists’ attitudes regarding rehabilitation for patients with advanced cancer. *PMR* 4(2):96–108. Pergolotti M, (2015) The prevalence of potentially modifiable functional deficits and the subsequent use of occupational and physical therapy by older adults with cancer. *J Geriatr Oncol*. doi:10.1016/j.jgo.2015.01.004. Salakari MR Effect of rehabilitation among patients with advanced cancer: a systematic review. (2015) *Acta Oncol* 54(5):618–628. Cheville AL, Role of rehabilitation medicine and physical agents in the treatment of cancer-associated pain. *J Clin Oncol* (2014) 32(16):1691–1702.

- Medical frailty and untreated physical impairment in cancer survivors increases the cost of care, institutionalization, caregiver burden, hospitalizations, inability to return to work and distress. This is a looming crisis in cancer care that must be addressed.** Winters-Stone, K. Preventing Frailty in Older Cancer Survivors. *Topics in Geriatric Rehabilitation*. 2015. 31(4), 241-245. Schmitz, K et al. The intersection of cancer and ageing: establishing the need for breast cancer rehabilitation. 2007. *Cancer Epidemiology Biomarkers and Prevention*. 2007; 16:866-872. Hoppe, S. Functional Decline in Older patients receiving first line chemotherapy. 2013. *J Clin Oncol*. 31; 3877-3882. Bentley, J et al. Functional status, life-space mobility, and quality of life: a longitudinal mediation analysis. *Qual Life Res*. 2013 September; 22(7): 1621–1632. C et al. Older People’s Quality of Life (OPQOL) scores and adverse health outcomes. *Health and Quality of Life Outcomes* 2011, 9:72. Prado, CM. Sarcopenia and Physical Function in Overweight Patients with Advanced Cancer. *Canadian journal of dietetic practice and research* (2013) 74(2):69. Silver, J. Cancer Rehabilitation may improve function in cancer survivors and decrease the economic burden of cancer to individuals and society. *Work*. (2013) 46(4): 455-72. Pearce AM, Productivity losses associated with head and neck cancer using the human capital and friction cost approaches. *ApplHealth Econ Health Policy*. (2015) doi:10.1007/s40258-015-0155-8
- An adequate workforce of Physical Medicine and Rehabilitation specialists with expertise in cancer rehabilitation is necessary to meet the needs for future cancer survivors in Minnesota.** Alfano, C et al. Cancer Survivorship and Cancer Rehabilitation: Revitalizing the Link. *Journal of Clinical Oncology*. 2012. 30:9. 904-906. Cheville AL (2014) Postacute care: reasons for its growth and a proposal for its control through the early detection, treatment, and prevention of hospital-acquired disability. *Arch Phys Med Rehabil* 95(11):1997–1999. National Institutes of Health Clinical Center (2015) Cancer rehabilitation conference <http://www.cc.nih.gov/rmd/crc/presentations.html>. Mukai A The future of physiatry: with challenges come opportunities. 2011. *PM R* 3(3):189–192. Raj VS Cancer rehabilitation education during physical medicine and rehabilitation residency: preliminary data regarding the quality and quantity of experiences. (2014) *Am J Phys Med Rehabil*. doi:10.1097/PHM.000000000000060. Smith SR, Cancer survivorship: a growing role for physiatric care. (2014) *PM R*. doi:10.1016/j.pmrj.2014.12.004
- Exercise for cancer survivors requires specific exercise prescriptions from qualified professionals in rehabilitation and cancer exercise physiology who are able to evaluate safety and comorbidities before prescribing correct individual exercise protocol for survivorship.** Lakoski SG. Exercise rehabilitation in patients with cancer. *Nat Rev Clin Oncol*. 2012;9(5):288–96. Sasso, JP. A framework for prescription in exercise oncology research. *J Cachexia, Sarcopenia, Muscle*. (2015)6:115-124. Brown, J. The prescription or proscription of exercise in colorectal cancer care. *Med Sci Sports Ex*. (2014)46(12):2202-2209. Betof, A. Effects and potential mechanisms of exercise training on cancer progression: a translational perspective. *Brain Behav Immun*. (2013)30(0): S75-S87. Midtgaard, J. Efficacy of multimodal exercise-based rehabilitation on physical activity, cardiorespiratory fitness, and patient reported outcomes in cancer survivors: a randomized, controlled trial. (2013) *Annals of Oncology*. 24:2267-2273. Brown, J. Development of a risk-screening tool for cancer survivors to participate in unsupervised moderate to vigorous-intensity exercise: results from a survey study. (2015) *PMR*. 7:113-122. Campbell, K. Review of exercise studies in breast cancer survivors: attention to principles of exercise training. (2012) *BrJ Sports Med*. 46:909-916. Martin, E. Higher intensity exercise helps cancer survivors remain motivated. *J Ca Survivorship* (2016)10(3): 524-533. Devin, J. The influence of high-intensity compared with moderate intensity exercise training on cardiorespiratory fitness and body composition in colorectal cancer survivors: a randomized controlled trial. *J Ca Survivorship* (2016)10(3):467-479. Jones, LW. Precision Oncology: Framework for investigation of exercise as treatment for cancer. (2015) *J Clin Oncol* 33:1-4. Schmitz, K. Consensus Statement: American College of Sports Medicine Roundtable on

Exercise Guidelines for Cancer Survivors. (2010) MedSciSportsEx 1409-1426. Wolin, K. Implementing the Exercise Guidelines for Cancer Survivors. (2012) J Support Oncol.10 (5): 171-177

- **Current models of medical care, payment systems and inaccurate coverage determinations work against the clinical integration of effective rehabilitation into oncology to the detriment of patient outcomes, health and wellness after cancer treatment. Minnesota needs to be at the forefront of research and policy development that facilitates effective, covered rehabilitation care for Minnesota cancer survivors.** *Round, J. A cost-utility analysis of a rehabilitation service for people living with and beyond cancer. BMC Health Serv Res. 2014. 14(1):558. Institute of Medicine (2013) Delivering high-quality cancer care: charting a new course for a system in crisis. National Academies Press, Washington, DC. Stubblefield MD. Current perspectives and emerging issues on cancer rehabilitation. Cancer 2013.119(Suppl 11):2170–2178. Mewes JC Effectiveness of multidimensional cancer survivor rehabilitation and cost-effectiveness of cancer rehabilitation in general: a systematic review. Oncologist(2012)17(12):1581–1593. Palacio A, Oncology and physical medicine and rehabilitation. Ann Phys Rehabil Med (2009) 52(7–8):568–578. Shin KY, Inpatient cancer rehabilitation: the experience of a national comprehensive cancer center. Am J PhysMed Rehabil (2011)90(5 Suppl 1):S63–68. Stout NL. A prospective surveillance model for rehabilitation for women with breast cancer. Cancer (2012) 118(8Suppl):2191–2200. Alfano CM, An action plan for translating cancer survivorship research into care. (2014) J Natl Cancer Inst 106(11). doi:10.1093/jnci/dju287. Gladieux JE. Jimmo and the improvement standard:implementing medicare coverage through regulations, policy manuals and other guidance. (2014) Am J Law Med 40(1):7–25*
- **Racial/ethnic disparities in access to accurate information about cancer treatment that affects treatment related morbidity as well as reduced access to rehabilitation interventions places these populations at greater risk of poor outcomes from cancer treatment.** *Hair, B. Racial differences in physical activity among breast cancer survivors: implications for breast cancer care. (2014). Cancer. 120(14):2174-2182. Black, D. Racial disparities in adoption of axillary sentinel lymph node biopsy and lymphedema risk in women with breast cancer. (2014) JAMASurg 149(8): 788-796. Morehead-Gee, A. Racial disparities in physical and functional domains in women with breast cancer. (2012)SupportiveCareCancer.20(8): 1839-47. Owasu, C. Racial disparities in functional disability among older women with newly diagnosed non-metastatic breast cancer. (2013)119(21):3839-46*

What factors & barriers contribute to this issue?

- Oncology departments/programs lack integration with rehabilitation, especially Physiatry
- ASCO, NCCN and Commission on Cancer in their publications and guidelines do not identify or partner with the qualified professionals from PMR, PT, OT and Cancer exercise physiology in policy initiatives
- Inadequate medical training in medical schools and oncology residency programs regarding the types and effectiveness of rehabilitation interventions
- PM&R residency training programs not devoting adequate time/resources to training in cancer rehabilitation
- PT, OT, SLP training programs not devoting adequate time to/resources to training in cancer rehabilitation
- Payment systems that have silos versus ACO models
- Poor understanding of medical professionals regarding the specifics of medical exercise prescriptions and how they must be administered to have beneficial/safe effects on cancer survivors (generally have been relegated to sports medicine professionals)
- Lack of understanding of rehabilitation care as covered medical care as opposed to community exercise/wellness
- Lack of screening for physical impairments since Commission on Cancer implemented Distress Screening Guideline but no physical impairment screening guideline

- Health care systems that do not interface with racial and ethnic communities on cultural differences with diet and exercise as well as survivorship care in general
- Lack of partnerships with qualified community cancer exercise professionals in affordable, accessible settings
- Lack of training for Cancer Exercise specialists
- Survivors uneducated on cancer exercise specialists versus community fitness trainers and safety concerns

What are the POLICY opportunities to address the identified factors, and racial, economic, geographic, and other barriers that contribute to this issue? What are the POLICY opportunities to address the identified gaps?

Work with ASCO (MN) and ACS to develop standards for Survivorship Programs utilizing experts in cancer rehabilitation and cancer exercise physiology to set policy for training and implementation of cancer rehabilitation and cancer exercise.

Advance policy in major cancer organizations to require physical impairment screening for cancer survivors with referral to qualified rehabilitation and exercise professionals following recommendations of the NIH Expert Task Force on Cancer Rehabilitation.

Require medical schools, PMR residencies and Oncology residencies in MN to have training in evidence based cancer rehabilitation
Develop telemedicine opportunities and payment mechanisms for cancer rehabilitation.

Pilot/grant projects to develop models of care for cancer rehabilitation and cancer exercise in Minnesota medical training institutions.

Require oncology survivorship programs to track percentage of minorities under their care receiving screening for physical impairment and referrals to services.

Work with insurance companies in Minnesota to evaluate compliance with standards of care coverage for physical impairments as medical care.

Advance policy statements from major oncology institutions to require community programs stating that they are a "Cancer Exercise Program" to disclose qualifications of class instructors, certify instructors as cancer exercise trained if offering "cancer exercise classes."

What are the STRATEGY opportunities to address both the barriers and the gaps relating to this issue?

MCA work with MN branch of ASCO and ACS to create policy on screening for physical impairment and referral to qualified rehabilitation professionals (PMR, PT, OT) and certified cancer exercise specialists.

Reach out to Medical training program leaders in Oncology and PMR in MN to develop cancer rehabilitation curriculum.

Reach out to PT, OT, SLP training program leaders in MN to develop cancer rehabilitation curriculum.

Seek grant funding for pilot models of cancer rehabilitation embedded in Oncology Survivorship Clinics.

1. Who are the existing partners/organizations already working on this issue?

American Cancer Society
American Academy of Physical Medicine and Rehabilitation
American Physical Therapy Association
American Occupational Therapy Association
American College of Sports Medicine
American Congress of Rehabilitation Medicine
Oncology Rehab Partners

2. Which partners/organizations should work together to address this issue?

Those listed above and in addition:
American Society of Clinical Oncology
MN Medical Schools and medical professional training programs
Cancer Health Equity Network

Which strategies promote health equity?

MCA work with MN branch of ASCO and ACS, along with CHEN to create policy on screening for physical impairment and referral to qualified cancer rehabilitation professionals (PMR, PT, OT) and certified cancer exercise specialists.