Rehabilitation and Cancer Survivorship

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UNE Doctor of Physical Therapy Program

Central Maine Medical Center
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UNIVERSITY OF NEW ENGLAND

NORTHERN NEW ENGLAND
NNECOS
ASSURING ACCESS TO HIGH QUALITY CANCER CARE
CLINICAL ONCOLOGY SOCIETY

Why We Are Here

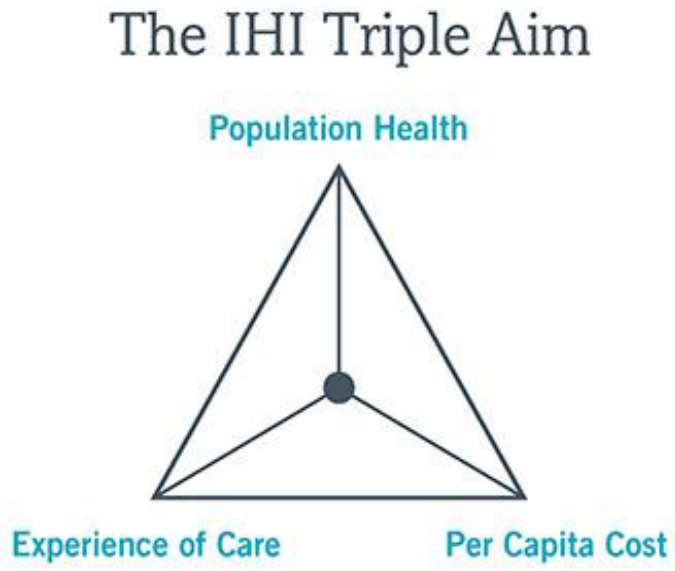
- Third and final year community based project
- Northern New England Clinical Oncology Society Grant Recipients
- Build awareness on the role of rehabilitation services in cancer survivor management
- Discuss strategies to address existing need
- Motivated by personal and professional connections to cancer survivors

Overview

- Each cancer survivor has a unique set of risk factors, disease presentation, and course of treatment
- Cancer survivors are at high risk for severe and persistent symptoms of physical distress that impair post-treatment function
  - Kim YM et al. *J Korean Med Sci.* 2011
  - Kim BH, 2015
- Many cancer survivors can endure physical distress symptoms for up to 10 years following treatment
  - Hearn J et al. *J Public Health Med.* 1997
- Comprehensive rehabilitation and extensive wellness services available locally

Triple Aim

- Improving the patient care experience
- Improving the health of populations
- Reducing the per capita cost of health care



Objective & Goals

Objective

- All cancer survivors have the opportunity to receive the additional services they need to maximize their quality of life.

Goals

- Feasible resolution to current barriers
- Identify physical distress screening tools and outcome measures
- Improve utilization of screening tools
- Education on rehabilitation services

2015 Cancer Incidence

National

- Estimated 1,658,370 new diagnoses (ACS, 2015)
  - Breast: 234,190 new cases
  - Lung/Bronchus: 221,200 new cases
  - Prostate: 220,800 new cases
  - Colorectal/Anal: 139,970 new cases

Maine

- Estimated 8,810 new diagnoses (ACS, 2015)
  - Breast: 1,010 (female) new cases
  - Lung/Bronchus: 1,360 new cases
  - Prostate: 1,100 new cases
  - Colorectal/Anal: 610 new cases

Cancer Incidence Statistics at CMMC

CMMC Annual Report 2013

- Cancer survivors treated in 2012: **735**

- Total % of 2012 Analytic Cases: 99.9%
  - Breast Cancer: 20.4%
  - Lung/Bronchus: 16.2%
  - Colorectal/Anal Cancer: 8.2%

Late Effects of Cancer Survivorship

- Between 1971 and the projections for 2022, the number of cancer survivors will increase from **3 million** to **18 million.**

- **Tools** to identify long-lasting side effects of cancer therapy **must be implemented** earlier to treat and/or prevent them.
  - At least 50% of survivors suffer from late treatment-related side effects
  - Many side effects are chronic in nature and even life-threatening

Valdivieso et al. *Int J Med Sci.,* 2012

Current CMMC Model

ECOG - Eastern Cooperative Oncology Group Scale of Performance Status

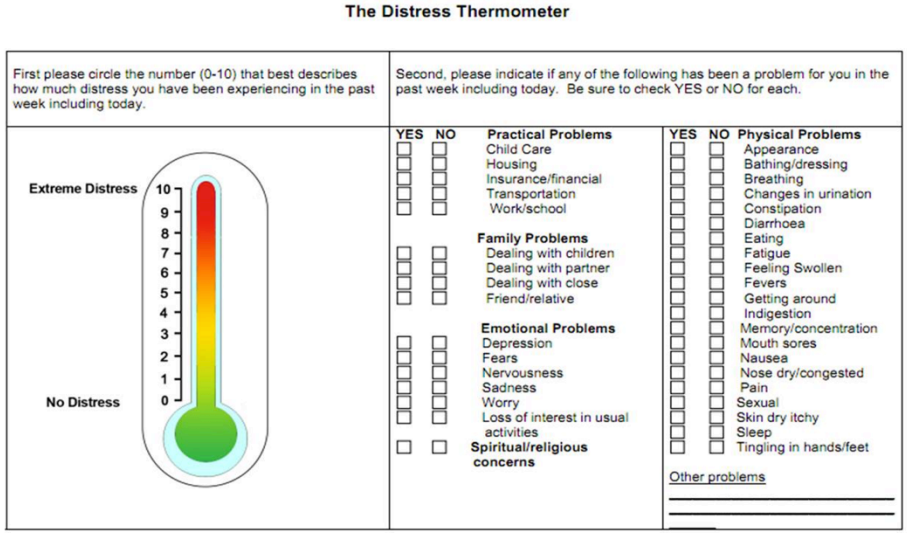
- Currently assessed at each patient visit
- Preliminary tool used for detecting change
- 0 = no impairment
  5 = death

Grade	ECOG
0	Fully active, able to carry on all pre-disease performance without restriction.
1	Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature (i.e. light housework, office work).
2	Ambulatory and capable of all self-care but unable to carry out any work activities. Up and about more than 50% of waking hours.
3	Capable of only limited self-care, confined to bed or chair more than 50% of waking hours.
4	Completely disabled. Cannot carry on any self-care. Totally confined to bed or chair.
5	Dead.

Current CMMC Model

Distress Thermometer

- Currently administered at the initial patient visit
- A recommendation by the NCCN to screen for emotional, psychological, and physical distress
- 0 = no distress
  10 = extreme distress
- Practical, Family, Emotional, Spiritual/ Religious, and Physical Problems



The Distress Thermometer

First please circle the number (0-10) that best describes how much distress you have been experiencing in the past week including today.

Extreme Distress 10 9 8 7 6 5 4 3 2 1 0 No Distress

Second, please indicate if any of the following has been a problem for you in the past week including today. Be sure to check YES or NO for each.

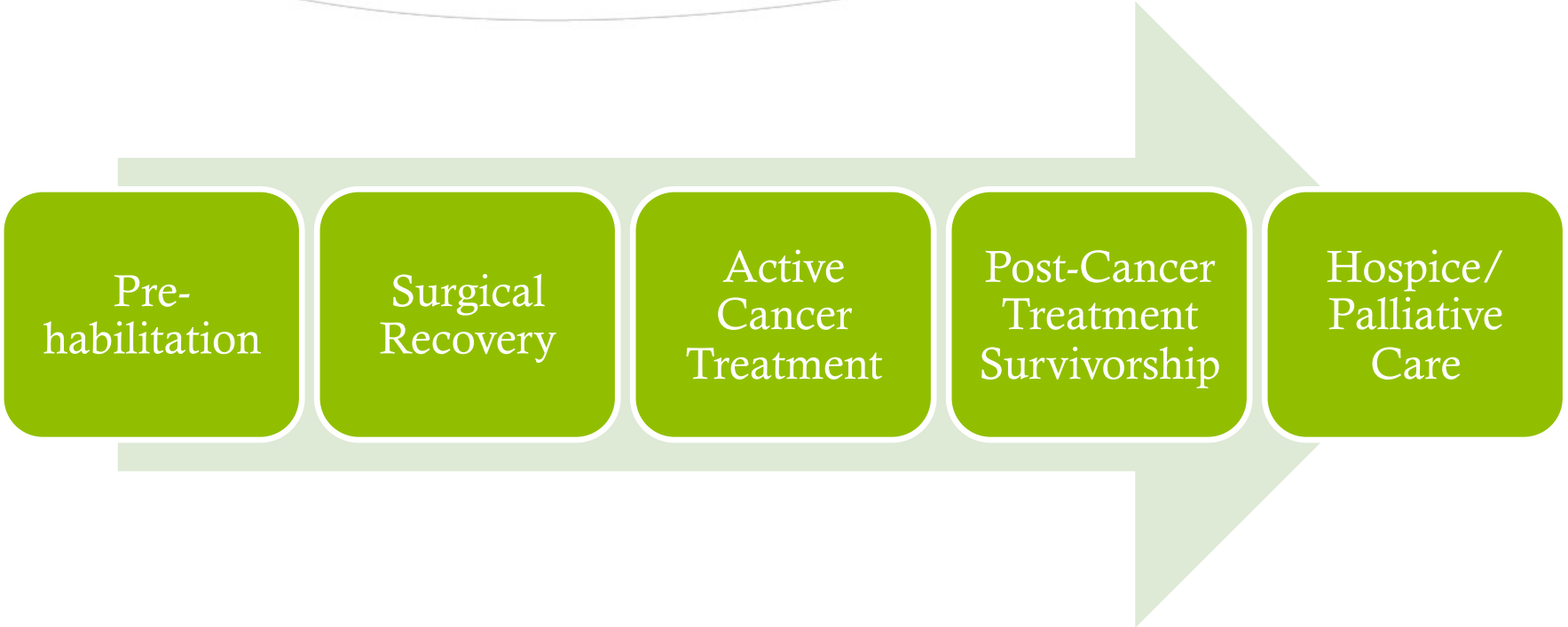
YES	NO	Practical Problems
☐	☐	Child Care
☐	☐	Housing
☐	☐	Insurance/financial
☐	☐	Transportation
☐	☐	Work/school
		Family Problems
☐	☐	Dealing with children
☐	☐	Dealing with partner
☐	☐	Dealing with close Friend/relative
		Emotional Problems
☐	☐	Depression
☐	☐	Fears
☐	☐	Nervousness
☐	☐	Sadness
☐	☐	Worry
☐	☐	Loss of interest in usual activities
☐	☐	**Spiritual/religious concerns**

YES	NO	Physical Problems
☐	☐	Appearance
☐	☐	Bathing/dressing
☐	☐	Breathing
☐	☐	Changes in urination
☐	☐	Constipation
☐	☐	Diarrhoea
☐	☐	Eating
☐	☐	Fatigue
☐	☐	Feeling Swollen
☐	☐	Fevers
☐	☐	Getting around
☐	☐	Indigestion
☐	☐	Memory/concentration
☐	☐	Mouth sores
☐	☐	Nausea
☐	☐	Nose dry/congested
☐	☐	Pain
☐	☐	Sexual
☐	☐	Skin dry itchy
☐	☐	Sleep
☐	☐	Tingling in hands/feet

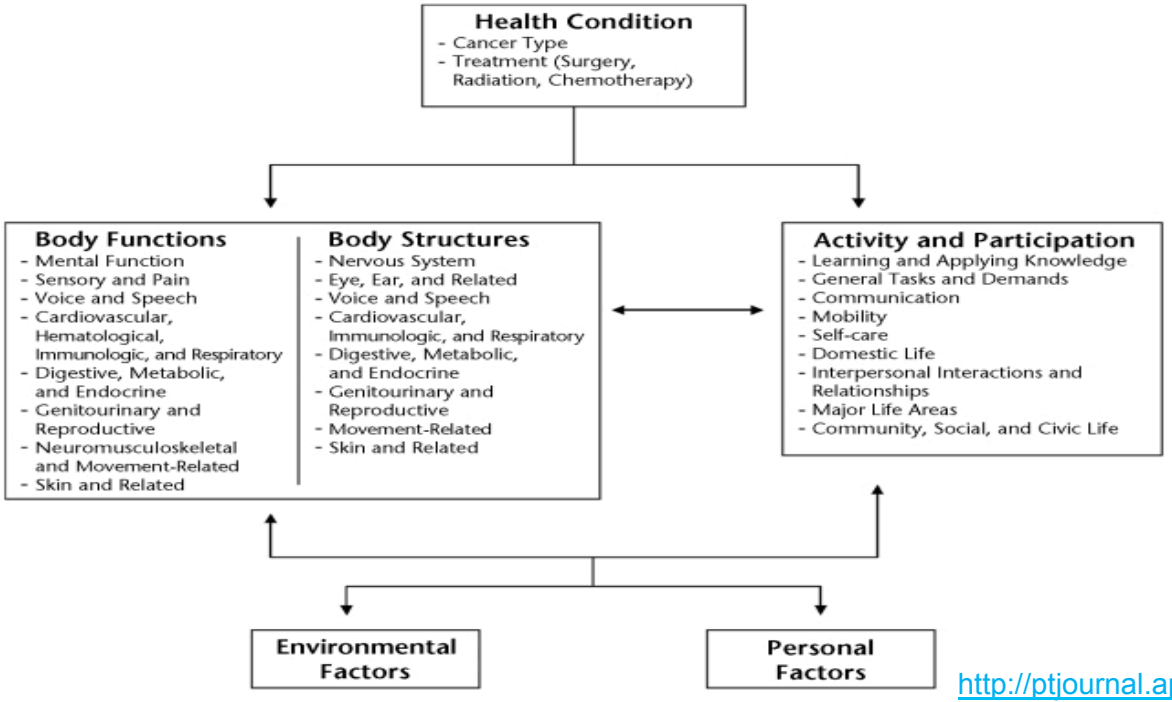
Other problems

http://blogs.plos.org/mindthebrain/files/2014/08/distress-problem.jpg

Oncology Rehabilitation Continuum



Assessment in Oncology Rehabilitation



http://ptjournal.apta.org/content/89/3/286

Common Cancer-Related Impairments

Fatigue

- "Overwhelming and sustained exhaustion and decreased capacity for physical and mental work…not relieved by rest"
- As many as 75% of patients have cancer-related fatigue
- **Tools:** Distress Thermometer, Brief Fatigue Inventory (BFI), FACIT-F, FACIT-An
- **PT Intervention**: promote mobility, ambulation, passive/active ROM, light resistance exercises

Silver, *CA Cancer J Clin*. 2013

Common Cancer-Related Impairments

Sensory, Balance, Gait, and Fall-Risk

- Most prevalent neurological complication of cancer is chemo-induced peripheral neuropathy (CIPN)
- May develop in 50-60% of patients treated with taxanes
- **Tools:** various PT balance tests, fall risk screenings, Dizziness Handicap Inventory (DHI), visual acuity tests, Modified Total Neuropathy Score (mTNS)
- **PT Intervention:** fall risk prevention, vestibular rehab, balance activities, strengthening exercises, assistive devices, adaptive equipment

Silver, *CA Cancer J Clin*. 2013

Common Cancer-Related Impairments

Pain

- PT and wellness programs early in cancer treatment "may help to diminish the intensity and incidence of chronic pain in long-term survivors."
- "30-50% of patients undergoing acute cancer treatment and up to 70% of patients with metastatic disease"
- **Tools:** Visual Analog Scale (VAS), Numeric Pain Rating Scale (NPRS), Faces Pain Scale (FPS), Distress Thermometer, Brief Pain Inventory (BPI)
- **PT Intervention:** modalities, manual therapy, pressure point release, transcutaneous neuromuscular stimulation (TENS), positioning, stretches

Silver, *CA Cancer J Clin*. 2013

Common Cancer-Related Impairments

Neuromusculoskeletal

- ROM loss, decreased muscle strength, gait pattern abnormalities, and balance deficits
- Weakness is present in up to 78% of patients with brain tumors and 74-76% of patients with cancer-related spinal cord injury
- **Tools:** goniometry, manual muscle testing, grip strength, deep tendon reflexes, gait speed, gait analysis, etc.
- **PT Intervention:** PROM/AROM, muscle endurance and strength exercises, balance activities, and assistive devices

Silver, *CA Cancer J Clin*. 2013

Common Cancer-Related Impairments

Incontinence Related to Pelvic Floor Imbalances/Weakness

- More common with pelvic cancers, such as cervical, ovarian, uterine, or vaginal cancer in women or prostate or testicular cancer in men
- **Tools:** Numerous standardized questionnaires available for symptoms, QoL, and sexual function
- **PT Intervention:** pelvic floor rehab/EMG, transverse abdominis muscle training, manual therapy, soft tissue release, positioning, education

Common Cancer-Related Impairments

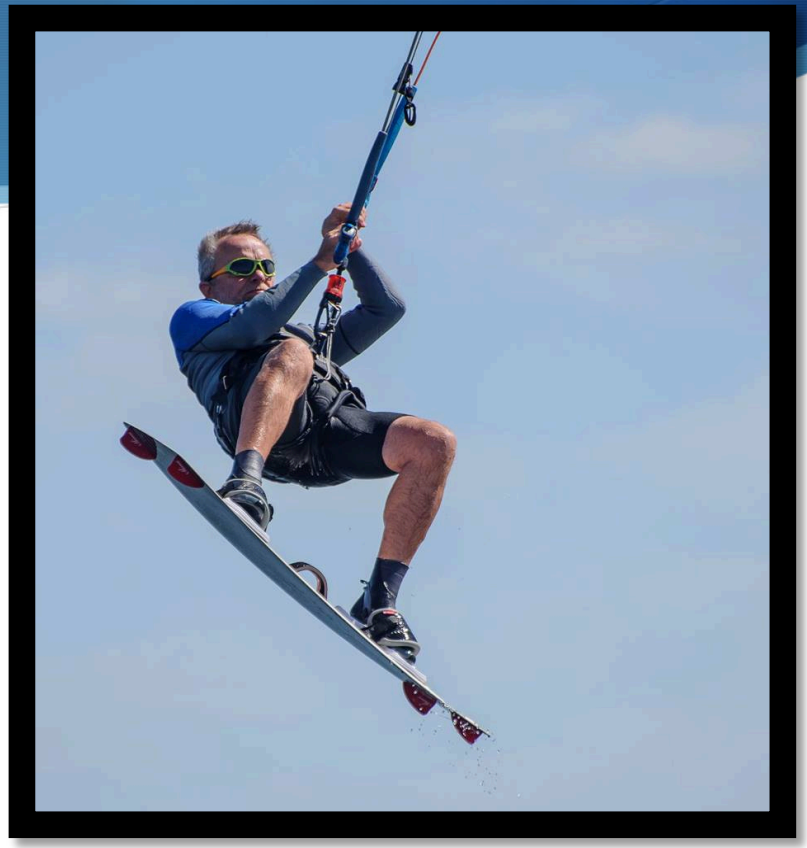
Lymphedema

- Can cause disfigurement, physical discomfort, and functional impairment
- 6.3% - 22.3% develop secondary lymphedema following SLND and ALND
- **Tools:** EDGE task force, circumferential measurements, FACIT-Lymphedema
- **PT Intervention:** complex decongestive therapy

Shaitelman et al. *CA Cancer J Clin*. 2015

January 14, 1966 - September 14, 2015


PROPERTY
LAS VEGAS
HOHO




MOM

Positive Effects of Physical Activity

- Reduces cancer mortality by up to 17%

  Li et al. *Br J Sports Med.* 2015

- Pre-habilitation and rehabilitation can reduce physical distress and improve QoL

  Silver et al. *CA Cancer J Clin. 2013.*
  Bernat et al. *BJU Int. 2015*

- Reduces cancer-related fatigue

  Meneses-Echavez et al. *J Physiother.* 2015

Additional Oncology Rehabilitation Services

Occupational Therapy

- ADL management
- Assistive device management
- Energy conservation and relaxation techniques
- Environmental modifications
- Return to leisure activities
- Lymphedema management

Speech-Language Pathology

- Neurogenic Communication Disorders
- Cognitive-Communication Assessment - “Chemo-brain”
- Augmentative/Alternative communication
- Dysphagia
- Intraoperative language mapping
- Laryngectomy Rehabilitation
- Voice Therapy

Fitness and Wellness for Survivors

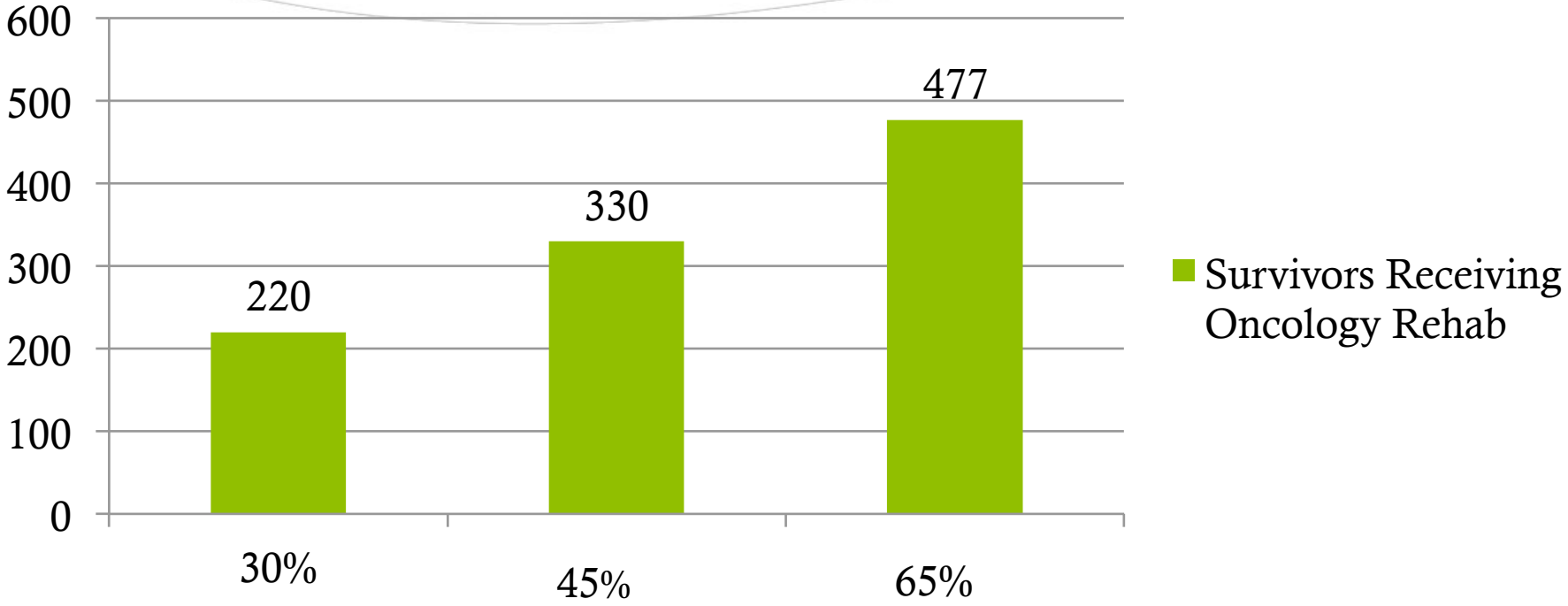
The Patrick Dempsey Center for Cancer Hope and Healing

- Massage, Reiki, yoga, Tai Chi, meditation
- Mindfulness Meditation ongoing series
- Toll-free cancer assistance line
- Short-term therapeutic counseling services
- Financial resource counseling
- Nutrition counseling
- *Nutrition for Life* series
- Community cancer-related health outreach and education
- Professionally facilitated cancer and caregiver support groups
- Educational workshops on a variety of cancer and wellness-related topics
- Patient Navigation
- The Healing Tree program, which offers support, education and wellness services for youth and families impacted by cancer.
- Space to Breathe and Space to Grieve, adolescent outdoor adventure programs
- Interactive website and social media
- A cancer resource Lending Library including books, periodicals and DVDs

Need for Referral

- 92% of women with metastatic breast cancer had at least 1 physical impairment Silver, *CA Cancer J Clin*. 2013
  - 91% of those impairments required a physical rehabilitation intervention
  - 88% required PT and/or OT
  - Fewer than 30% received this care
- 63% of survivors of the 10 most common cancers reported the need for at least 1 rehabilitation service Silver, *CA Cancer J Clin*. 2013
  - 40% of the patients reported unmet rehabilitation needs

Estimated Patient Rehab Needs for CMMC Survivors



Barriers and Opportunities to Access Services

Potential Barriers

- Cancer survivors overwhelmed and limited available time
- Financial burden
- Lack of awareness
- Lack of financial incentive

Potential Opportunities

- Progressive thinking
- Pilot a PT in Cancer Center to increase referrals and financial revenue
- Encourage utilization of nearby facilities
- Empower cancer survivors to be an active participant in their treatment

Budget

An example of lymphedema:

- 6.3% – 22.3% of breast cancer survivors
  - Shaitelman et al. *CA Cancer J Clin*. 2015

- Healthcare costs increase with lymphedema $14,877-$23,167 using traditional care
  - Shih et al. *Journal of Clinical Oncology*. 2009

Budget

Prospective surveillance screening:

- Before beginning treatment
- Follow-up screening at 3 month intervals

Cost:

- Prospective Surveillance Model: $636.19
- Cost to manage late lymphedema: $3,124.92

Stout et al. *Phys Ther.* 2012

OT/PT in Maine

0.2 FTE = $15,000 (BLS.gov)

Economic Impact

- Fatigue is most common impairment among cancer survivors
- 75% changed their employment status
- 65% of family caregivers took extra days off work
- Work loss due to cancer accounts for 0.8% of GDP
  - 120 billion dollars

Menses-Echavez et al. *J Physiother,* 2015

Silver et al. *CA Cancer J Clin*, 2013

Rehabilitation for Advanced Cancer Survivors

- 103 adults undergoing radiation therapy for advanced cancer
- Single-blinded RCT
- 8 multi-disciplinary interventions of 90 minutes, 30 minutes devoted to PT
- **89.3% attendance rate**

Cheville AL et al. *Am J Phys Med Rehabil*. 2010

Cost-Effectiveness of Cancer Rehabilitation: A Systematic Review

"Studies published so far report statistically significant benefits for multidimensional interventions over usual care, most notably for the outcomes fatigue and physical functioning….all [available economic evaluations] showed favorable cost effectiveness ratios."

Mewes JC, et al. *Oncologist*. 2012.

Opportunities

Central Maine Comprehensive Cancer Center

The Central Maine Medical Family

Working together with
Massachusetts General Hospital Cancer Center

Annual Report 2013

TOTALS	809	763	735

Our Recommendation: The Cancer Center

- Increased frequency of Distress Thermometer administration
- Referral to rehabilitation services with a Distress Thermometer score of 4 or more
  - Indicates significant distress requiring screening
- Allow rehabilitation services to perform additional patient screens in Cancer Center

Our Recommendation: Rehabilitation Dept.

- A full-time rehab clinician as part of the oncology team
  - Patient care and interdisciplinary team meetings
- Clinician follow-up with patients based on distress thermometer results
- Improve clinical collaboration with Live**Strong** program and the Dempsey Center

Our Recommendation: The Dempsey Center

- Volunteer representative in the Cancer Center (Medical Oncology & Radiation Oncology)
- Pamphlets/Calendars available in waiting room, exam room, gowned waiting room in Radiation Oncology
- Enhance access in Cancer Center to visiting massage therapist, Reiki practitioner, and meditation services
- Enhance collaboration with patient navigator

Turning Challenges into Opportunities

- Identifying the right patient at the right time
  - CMMC Cancer Center Infusion Center
- Securing patient buy-in
  - through word-of-mouth, pamphlets, and personal experience
  - face-to-face interaction with a PT to educate patient on benefits of rehabilitation specific to their cancer diagnosis and treatment
- Feasibility

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Thank You!

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