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
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 BH, 2015

Many cancer survivors can endure physical distress symptoms for up to 10 years following treatment.


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

- 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%
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

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

<table>
<thead>
<tr>
<th>Grade</th>
<th>ECOG</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Fully active, able to carry on all pre-disease performance without restriction.</td>
</tr>
<tr>
<td>1</td>
<td>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).</td>
</tr>
<tr>
<td>2</td>
<td>Ambulatory and capable of all self-care but unable to carry out any work activities. Up and about more than 50% of waking hours.</td>
</tr>
<tr>
<td>3</td>
<td>Capable of only limited self-care, confined to bed or chair more than 50% of waking hours.</td>
</tr>
<tr>
<td>4</td>
<td>Completely disabled. Cannot carry on any self-care. Totally confined to bed or chair.</td>
</tr>
<tr>
<td>5</td>
<td>Dead.</td>
</tr>
</tbody>
</table>
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
Oncology Rehabilitation Continuum

- Pre-habilitation
- Surgical Recovery
- Active Cancer Treatment
- Post-Cancer Treatment Survivorship
- Hospice/Palliative Care
Assessment in Oncology Rehabilitation

Health Condition
- Cancer Type
- Treatment (Surgery, Radiation, Chemotherapy)

Body Functions
- Mental Function
- Somatic and Pain
- Voice and Speech
- Cardiovascular, Hematological, Immunologic, and Respiratory
- Digestive, Metabolic, and Endocrine
- Genitourinary and Reproductive
- Neuromusculoskeletal and Movement-Related
- Skin and Related

Body Structures
- Nervous System
- Eye, Ear, and Related
- Voice and Speech
- Cardiovascular, Immunologic, and Respiratory
- Digestive, Metabolic, and Endocrine
- Genitourinary and Reproductive
- Movement-Related
- Skin and Related

Activity and Participation
- Learning and Applying Knowledge
- General Tasks and Demands
- Communication
- Mobility
- Self-care
- Domestic Life
- Interpersonal Interactions and Relationships
- Major Life Areas
- Community, Social, and Civic Life

Environmental Factors

Personal Factors

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
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
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
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
Positive Effects of Physical Activity

- Reduces cancer mortality by up to 17%
  

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

- 30% Survivors: 220
- 45% Survivors: 330
- 65% Survivors: 477

*Survivors Receiving Oncology Rehab*
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:

 Flames:

- 6.3% – 22.3% of breast cancer survivors

- Healthcare costs increase with lymphedema $14,877-$23,167 using traditional care
  - Shih et al. *Journal of Clinical Oncology*. 2009
Prospective surveillance screening:
- Before beginning treatment
- Follow-up screening at 3 month intervals

OT/PT in Maine
0.2 FTE = $15,000 (BLS.gov)

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

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

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

“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.”

Opportunities
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 LiveStrong 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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