Title	Treatment Pathway: Palliative Radiation for Oncology Patients with Bone Metastases
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I. Background

The goals of hospice are to maintain or enhance the comfort, independence, and quality of life for patients who have a life limiting disease (e.g. cancer) and an expectation of six months or less to live. These goals are achieved by reducing burdensome and/or unnecessary healthcare interventions for the patient and their caregiver(s)/family.

The intent of this document developed by MOQC - in collaboration with hospice medical directors and radiation oncologists across the State of Michigan - is to establish a framework to guide the care of hospice patients who could benefit from palliative radiation oncology treatment.

II. Purpose

This document defines the criteria for providing uniform and appropriate palliative radiation for selected oncology patients who are enrolled in hospice. It describes a mechanism to refer and treat a subset of hospice patients to radiation oncology for treatment, while minimizing the financial and care burden to oncology practices, hospices and patients/families.

Radiation therapy can be an effective palliative treatment for cancer-related symptoms such as pain, bleeding, and airway obstruction. Hospice physicians and radiation oncologists have significant alignment with treatment planning and care in providing symptom management for this population.

The treating physician must provide care based on relevant and presenting information to determine the propriety of any specific treatment pathway or course of action. This document is not intended to establish a legal standard of care.

III. Personnel

Michigan Oncology Quality Consortium (MOQC): A member of the Value Partnership Program of Blue Cross Blue Shield of Michigan (BCBSM). MOQC uses data to develop best practices in areas where there is variation in care practices. MOQC represents approximately 50 practices, including 85% of eligible oncologists practicing in Michigan.

Hospice Medical Director (HMD): A physician with primary responsibility for the medical component of a hospice's patient care program. The HMD is responsible for working with an interdisciplinary team to provide for the palliation of symptoms and the medical management of those medical conditions contributing to the terminal prognosis of a hospice patient. Critical components of the HMD's role are the determination of prognosis, certification of hospice eligibility, and optimization of the palliative management of the patient while enrolled in hospice.

Radiation Oncologist (RO): A physician with the primary responsibility of managing the radiation treatment process. The RO is responsible for the evaluation of disease stage, assessment of comorbidities and previous treatments, and discussion of the impact of treatment, including benefits and potential harm with the patient. Critical components of the RO's role are the supervision of all aspects of simulation, approval of final treatment plans in collaboration with a medical physicist and dosimetrist, and supervision of the actual treatment process.

IV. Palliative Radiation Therapy Treatment Pathway for Oncology Patients on Hospice with Bone Metastases

a. Screening Criteria

Criteria	Description
Life expectancy estimated to be ≥ 30 days	A patient is eligible for hospice care if s/he has an estimated life expectancy of 6 months or less[1]. Life expectancy estimations depend on several factors, including: type of cancer, overall health, and the presence of comorbidities.
Palliative Performance Scale (PPS) of ≥ 40%	A useful tool in prognostication is the Palliative Performance Scale (PPS, scored 0–100 in 10-point increments) in which higher numbers indicate better function. Similar to the Karnofsky Performance Scale, which focuses on ambulation and self-care, the PPS assesses functional status. The PPS assesses five domains: (1) ambulation (range, bed-bound to full); (2) activity (unable to work to normal); (3) self-care (completely dependent to completely independent); (4)

	intake (mouth care only to full diet); and (5) level of consciousness (drowsy or coma to fully alert).
Localized pain (bone, skin)	Localized bone pain of 3 or fewer sites with a known diagnosis of cancer.[2]

[1] Centers for Medicare and Medicaid; eligibility for Hospice Benefit

[2] As of 2019, work group determined to focus on three sites of bone pain or less given preponderance of evidence.

b. Goals of Treatment

Goals of treatment should be discussed with the patient and family/caregivers by the hospice medical director. A summary should be communicated to the radiation oncologist and to members of the hospice team providing care to the patient and family. A radiation oncology consultation can occur in-person or via telehealth, as appropriate.

c. Treatment Planning

Treatment planning must be based on consideration of the patient's history, physical examination, endoscopy, diagnostic imaging, surgical findings, pathological findings, and response to previous therapies.

The following are physician and practice expectations and proposed process, from notification to completion of treatment:

Process Step #	Hospice	Radiation Oncology
1	Continue pharmacologic and non-pharmacologic pain and symptom management prior to radiation therapy	
2	Complete referral form. The referral form should state that the patient is a hospice patient being referred for single fraction, one-day treatment.	
3	Initiate verbal communication by Hospice Medical Director to discuss treatment plan with Radiation Oncologist	Receive verbal communication from Hospice Medical Director and confirm treatment plan

4	Send face sheet to radiation oncology practice so that patient can be pre-registered for one-day treatment	Receive face sheet from hospice; use information to pre-register and schedule patient for treatment
5		Schedule patient: Same day simulation and treatment slot is goal *Note: Some flexibility in scheduling may be required as 3 sites may require treatment on a separate day*
6	Provide radiation oncology practice with name of medical oncology practice for recent imaging and/or pathology reports	Complete: - Pre-registration Prepare chart for day of service (recent imaging, pathology report, recent consultations, current practice requirements)
7		Do not anticipate additional imaging to be required. Rely on physical exam, recent imaging and CT simulation Anticipate: - 2D/complex isodose plan - Encourage use of open fields Discourage use of custom immobilization
8		Ensure patient/family is provided correct instructions (who calls the patient/family)
9	Pre-dose patient on/before day of treatment to tolerate treatment pathway and/or to mitigate side effects	
10	Determine what medication (e.g. medication for management of pain) and/or documentation is sent with patient on day of RO treatment	
11	Discuss/organize transportation with patient/family to and from radiation oncology practice	
12	Patient arrives/receives treatment Receives discharge instructions	Greet patient/family Bill level 3 consult Provide discharge instructions and/or return appointment (if more than one day)

Process Step #	Hospice	Radiation Oncology
13		Complete documentation and billing of services
14	Receive documentation of radiation oncology treatment and place in patient's medical record	Send documentation to hospice Send billing to hospice or appropriate payer
15	Complete billing of radiation oncology services	

d. **Simulation and Treatment**

Simulation is the process of establishing and documenting the treatment position, defining the appropriate volume to be treated, and the normal structures within or adjacent to this volume.

Simulation and Treatment should ideally be completed on the same day for this population. If multiple sites are being treated, it is up to physician and patient discretion to separate the treatments if more convenient for the patient.

e. **Timeframe Expectations**

Time of referral receipt to time of radiation completion should be 5 business days or less.

f. **Recommended Preparation of Patients**

Premedication of a patient for pain and anticipated side effects of radiation therapy will be the responsibility of the Hospice Medical Director. What medication is used is dependent on the area of the body impacted by the radiation.

Medication examples include:
- Steroids (e.g. dexamethasone 4 mg given day before, day of, and day after radiation therapy)
- Antiemetics (e.g. ondansetron for radiation of thoracic or upper lumbar spine)

The Hospice Medical Director is responsible for providing the patient with adequate pain medication for the day of treatment (e.g. PRN, break through medications), as well as assessing and adjusting pharmacologic and non-pharmacologic strategies for pain after radiation treatment is provided.

V.Required Documentation

1) From Hospice to Radiation Oncology Practice (Referral):
   - Referral form
   - Most recent Imaging (include both reports and digital images; if hospice does not have, inform radiation oncology what practice or hospital should be contacted)
   - Pathology report (if hospice does not have, inform radiation oncology what practice or hospital should be contacted)

2) From Radiation Oncology to Hospice (End of Treatment):
   - Returning to Residential Hospice and/or Nursing Home/Skilled Facility on Day of Treatment
     i. Discharge summary (see Appendices)

   - Dictated Documentation (2-4 days later)
     i. Consult/follow-up note
     ii. Treatment summary

VI.Appendices

a. Palliative Performance Scale (PPS)
b. Discharge Summary

VII.References

1. Gharzai L.A., Beeler W.H., Hayman J.A., Mancini B., Jagsi R., Pierce L., Moran J.M., Dominello M.M., Boike T., Griffith K., et al. (2019). Michigan Radiation Oncology Quality Consortium Recommendations for single faction radiation therapy and stereotactic body radiation therapy in palliative treatment of bone metastases: A statewide practice patterns survey. *Practical Radiation Oncology*, 9:e541–e548. doi: 10.1016/j.prro.2019.07.005.

2. Moeller B., Balagamwala E.H., Chen A., et al. (2018). Palliative thoracic radiation therapy for non-small cell lung cancer: 2018 Update of an American Society for Radiation Oncology (ASTRO) Evidence-Based Guideline. *Practical Radiation Oncology*, *8*:245-50. 10.1016/j.prro.2018.02.009

3. Myers J., Kim A., Flanagan J., Selby D. (2015). Palliative performance scale and survival among outpatients with advanced cancer. *Supportive Care in Cancer, 23*:913–918

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Appendix A

Palliative Performance Scale (PPSv2)

PPS Level	Ambulation	Activity Level & Evidence of Disease	Self -care	Intake	Conscious level
PPS 100%	Full	Normal activity & work **No evidence** of disease	Full	Normal	Full
PPS 90%	Full	Normal activity & work **Some evidence** of disease	Full	Normal	Full
PPS 80%	Full	Normal activity & work *with* effort Some evidence of disease	Full	Normal or reduced	Full
PPS 70%	Reduced	Unable normal activity & work **Significant** disease	Full	Normal or reduced	Full
PPS 60%	Reduced	Unable hobby/house work Significant disease	Occasional assistance	Normal or reduced	Full or confusion
PPS 50%	Mainly sit/lie	Unable to do any work **Extensive** disease	Considerable assistance	Normal or reduced	Full or drowsy or confusion
PPS 40%	Mainly in bed	Unable to do most activity Extensive disease	Mainly assistance	Normal or reduced	Full or drowsy +/- confusion
PPS 30%	Totally bed bound	Unable to do any activity Extensive disease	Total care	Reduced	Full or drowsy +/- confusion
PPS 20%	Totally bed bound	Unable to do any activity Extensive disease	Total care	Minimal sips	Full or drowsy +/- confusion
PPS 10%	Totally bed bound	Unable to do any activity Extensive disease	Total care	Mouth care only	Drowsy or coma
PPS 0%	Dead	-	-	-	-

Instructions: PPS level is determined by reading left to right to find a 'best horizontal fit.' Begin at left column reading downwards until current ambulation is determined, then, read across to next and downwards until each column is determined. Thus, 'leftward' columns take precedence over 'rightward' columns. Also, see 'definitions of terms' below.

Definition of Terms for PPS

As noted below, some of the terms have similar meanings with the differences being more readily apparent as one reads horizontally across each row to find an overall 'best fit' using all five columns.

1. **Ambulation (**Use item **Self-Care** to help decide the level)
   - **Full** — no restrictions or assistance
   - **Reduced ambulation —** degree to which the patient can walk and transfer with occasional assistance
   - **Mainly sit/lie vs Mainly in bed —** the amount of time that the patient i*s able to* sit up or *needs* to lie down
   - **Totally bed bound —** unable to get out of bed or do self-care

2. **Activity & Evidence of Disease (**Use **Ambulation** to help decide the level.)
   - **Activity** — Refers to normal activities linked to daily routines (ADL), house work and hobbies/leisure.
   - **Job/work** — Refers to normal activities linked to both paid and unpaid work, including homemaking and volunteer activities.
   - Both include cases in which a patient continues the activity but may reduce either the time or effort involved.

   Evidence of Disease
   - **No evidence of disease** — Individual is normal and healthy with no physical or investigative evidence of disease.
   - **'Some,' 'significant,'** and **'extensive' disease** — Refers to physical or investigative evidence which shows disease progression, sometimes despite active treatments.

   - Example 1: Breast cancer:
     some = a local recurrence
     significant = one or two metastases in the lung or bone
     extensive = multiple metastases (lung, bone, liver or brain), hypercalcemia or other complication

     Example 2: CHF:
     some = regular use of diuretic &/or ACE inhibitors to control
     significant = exacerbations of CHF, effusion or edema necessitating increases or changes in drug management
     extensive = 1 or more hospital admissions in past 12 months for acute CHF & general decline with effusions, edema, SOB

3. **Self-Care**
   - **Full** — Able to do all normal activities such as transfer out of bed, walk, wash, toilet and eat without assistance.
   - **Occasional assistance** — Requires *minor* assistance from several times a week to once every day, for the activities noted above.
   - **Considerable assistance** — Requires *moderate* assistance every day, for *some* of the activities noted above (getting to the bathroom, cutting up food, etc.)
   - **Mainly assistance** — Requires *major* assistance every day, for *most* of the activities noted above (getting up, washing face and shaving, etc.). Can usually eat with minimal or no help. This may fluctuate with level of fatigue.
   - **Total care** — Always requires assistance for all care. May or may not be able to chew and swallow food.

4. **Intake**
   - **Normal** — eats normal amounts of food for the individual as when healthy
   - **Normal or reduced** — highly variable for the individual; 'reduced' means intake is less than normal amounts when healthy
   - **Minimal to sips** — very small amounts, usually pureed or liquid, and well below normal intake.
   - **Mouth care only** — no oral intake

5. **Conscious Level**
   - **Full** — fully alert and orientated, with normal (for the patient) cognitive abilities (thinking, memory, etc.)
   - **Full or confusion** — level of consciousness is full or may be reduced. If reduced, confusion denotes delirium or dementia which may be mild, moderate or severe, with multiple possible etiologies.
   - **Full or drowsy +/-** confusion — level of consciousness is full or may be markedly reduced; sometimes included in the term stupor. Implies fatigue, drug side effects, delirium or closeness to death.
   - **Drowsy or coma +/- confusion** — no response to verbal or physical stimuli; some reflexes may or may not remain. The depth of coma may fluctuate throughout a 24 hour period. Usually indicates imminent death

Date:
Patient's Name:
Patient's Date of Birth:
Total Number of Fractions Administered:
Location of Treatment:
Date of Completion:

Possible Side Effects from Treatment:
Radiation Therapy may cause side effects. **Following up with your hospice doctor after your treatment is important.** In general, side effects from your treatment may start to subside 14 days after treatment.

Possible Side Effects to Expect from Radiation Therapy

□ Diarrhea	□ Difficulty swallowing	□ Cough
□ Fatigue	□ Dry Mouth	□ Fever
□ Nausea	□ Hair loss	□ Shortness of breath
□ Vomiting	□ Mouth and gum sores	□ Other

Everyone's experience with radiation is different. If side effects appear or worsen, call your hospice doctor and ask them to provide treatment options.

Skin and Oral Care
• Avoid direct heat and cold to the treatment area
• Avoid sun exposure to the treated area; use a sunscreen of at least 30 SPF
• Mild soap and water may be used directly to the treated area once healing is established
☐ Continue the skin care you used prior to your radiation treatment
☐ Continue the skin care you used while on radiation treatment until your skin is healed
☐ Continue oral rinses and mouth care
☐ Use fluoride gel trays every day
☐ Dressing instructions:

Diet
☐ Diet as tolerated or as directed by your Hospice Physician.
☐ Low fiber diet:
☐ Avoid highly seasoned foods
☐ Liquid supplements

Tiredness
• Fatigue and tiredness may continue for several weeks depending on how your body responds to treatment. Be sure to get the sleep, rest and activity you need.

Medications	
☐	Patient is currently not taking any medications
☐	If on Steroids please talk to your hospice physician
☐	Continue all the medication(s) prescribed by your hospice physician

New Prescription(s) Ordered by Radiation Oncology Physician:

□ Zofran
□ Dexamethasone
□ Prednisolone
□ Methylprednisolone

Additional Information:

Patient or Caregiver Signature: **Date:** **Time:**	**Nurse Signature:** **Date:** **Time:**

Who to contact:

ENTER HOSPICE INFORMATION