

# Palliative Radiotherapy: Alberta Clinical Practice Guidelines



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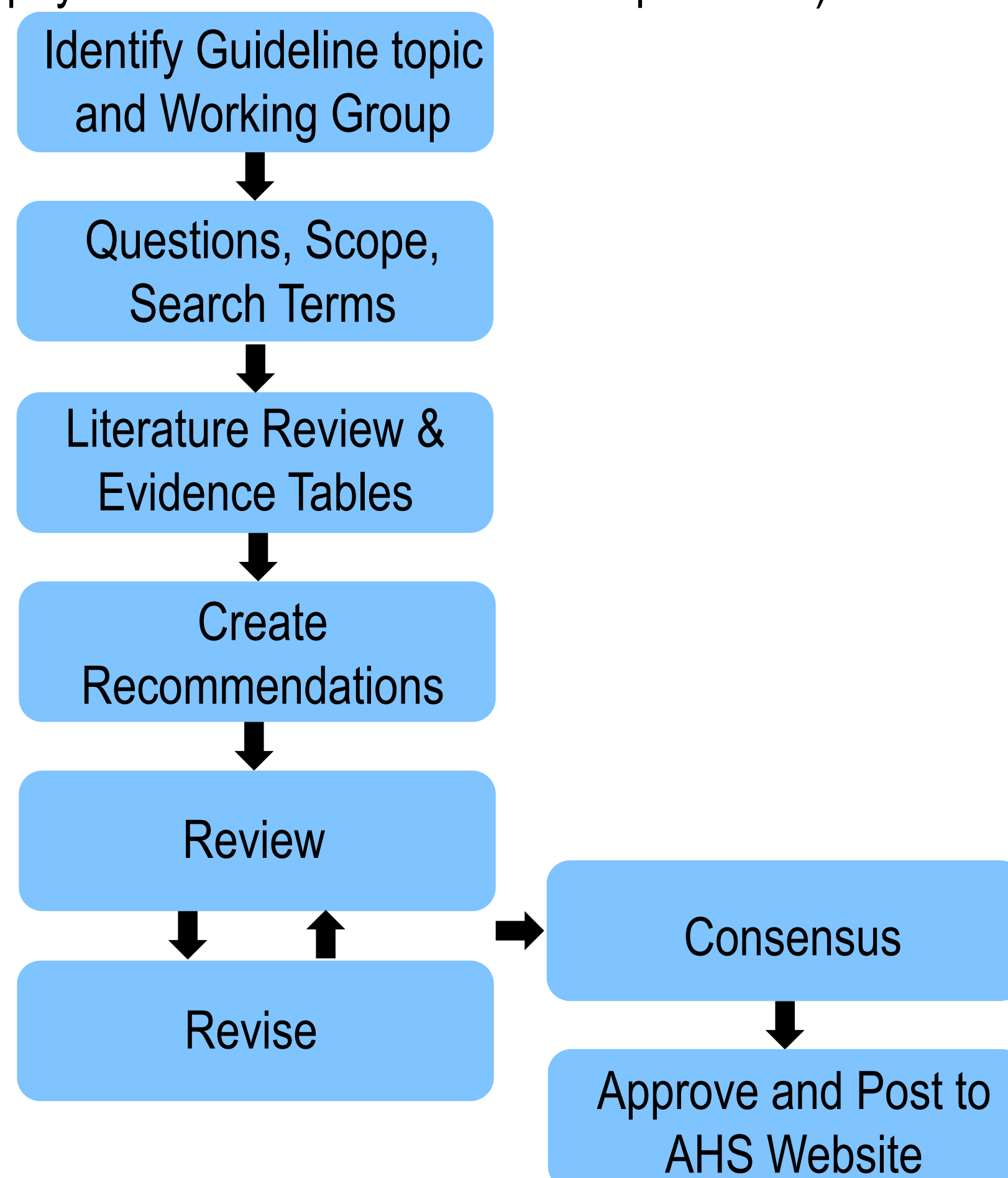
## Introduction

The radiotherapy practice landscape as described in the literature suggests variability in palliative radiotherapy (RT) practice patterns across Canada (1, 2), the United States and Europe (3-5). Evidence based guidelines encourage practice which is beneficial, and also aim to discourage ineffective or potentially harmful practices (6,7). Implementation of clinical practice guidelines have been shown to result in improvements in care by increasing compliance of evidence based practice (7,8).

Palliative RT guidelines were introduced in Alberta in 2008, and are a factor associated with the standardization of care which helped lower the likelihood of hospital death amongst palliative end-of-life RT patients (9), compared to patients managed before the implementation of palliative RT guidelines. Here we report the creation of 4 new palliative RT guidelines which replace the outdated 2008 guideline: Bone Metastases and Spinal Cord Compression, Brain Metastases, Superior Vena Cava Obstruction, Dyspnea, and Hemoptysis, and Bleeding and Gastrointestinal Obstruction

## Methods

The Guideline Resource Unit (Cancer Control, Alberta Health Services) is tasked with the creation and maintenance of Alberta clinical practice guidelines in partnership with the Alberta Tumour Teams (consisting of physicians and allied healthcare providers).



**Figure 1. Guideline Development Flow Chart**  
For the Palliative Radiotherapy Guidelines, a core working group with provincial representation of radiation oncology was formed. In the absence of high quality evidence, recommendations were generated based on evidence which was partially or exclusively retrospective in nature. The working group attempted to minimize the use of retrospective data in favour of prospective data wherever possible. The initial iteration of the guideline recommendations were reviewed by the provincial Palliative, CNS, GI, GU, Gyne, and Lung Tumour Teams (where appropriate), along with all radiation oncologists in Alberta for review and feedback.

## Results: Brain Metastases Recommendations

**Table 1. Palliative Radiotherapy for Brain Metastases Guideline: Summary of Recommendations (August 2014)**

Summary of Recommendations
<b>Solitary Brain Metastasis</b>
1. Neurosurgery should be consulted for patients with a solitary brain metastasis
2. For solitary brain metastases, WBRT is recommended after surgery. If patients are ineligible for surgery, or complete excision was not achieved, SRS plus WBRT should be considered
<b>Multiple Brain Metastases</b>
1. For patients with up to four newly diagnosed brain metastases, WBRT can be considered with or without SRS boost
2. Consider best supportive care for those patients with multiple brain metastasis and poor prognosis
<b>Recurrent/ Progressive Brain Metastases</b>
1. Status of extracranial disease burden, interval since initial treatment, initial treatment modalities, performance status, symptom burden, co-morbidities, prognosis and patient wishes should guide treatment decisions

Complete guideline available at: <http://www.albertahealthservices.ca/assets/info/hp/cancer/hp-cancer-guide-pal001-palliative-rt-brain.pdf>

## Results: Superior Vena Cava Obstruction, Dyspnea, and Hemoptysis Recommendations

**Table 2. Palliative Radiotherapy: Superior Vena Cava Obstruction, Dyspnea, and Hemoptysis: Summary of Recommendations (July 2016)**

Summary of Recommendations
<b>Superior Vena Cava Obstruction</b>
1. SVCO should be treated with chemotherapy and/or radiotherapy and/or stent depending on histology, urgency of presentation, and previous treatment if any.
<b>Airway Obstruction</b>
1. Radiotherapy is not routinely required in patients with minimal or no symptoms. However, those at risk of a serious impending event should be considered for upfront RT even in the absence of symptoms.
2. Depending on the primary histology, systemic therapy may be an option for treatment.
3. Patients requiring immediate relief can be referred for consideration of bronchoscopic debulking or surgical resection.
4. If intrathoracic symptoms warrant palliative RT, a short course external beam multi-fraction approach alone is preferred over a single fraction.
5. EBB could be considered in select patients who have previously been treated with EBRT and developed obstruction due to recurrent or progressive disease; however, this would require a referral to an out-of-province provider. Other potential treatment options in this situation include PDT, endobronchial debulking, ND:YAG laser, or stenting, where resources allow.
<b>Radioisotopes</b>
1. Preferred treatment option depends on whether a causative lesion can be identified, whether other symptoms from intrathoracic malignancy also require palliation, severity of bleeding and whether the patient is cardiovascularly stable.
2. In low volume bleeding, particularly where hemoptysis occurs coincident with other symptoms, EBRT should be considered. In higher volume or massive bleeding, interventional approaches under bronchoscopic or open surgical visualization may be required.

Complete guideline available at: <http://www.albertahealthservices.ca/assets/info/hp/cancer/hp-cancer-guide-pal006-palliative-rt-svco.pdf>

## Results: Bone Metastases and Spinal Cord Compression Recommendations

**Table 3. Palliative Radiotherapy for Bone Metastases and Spinal Cord Compression Guideline: Summary of Recommendations (June 2016)**

Summary of Recommendations
<b>External Beam Radiation</b>
1. EBRT improves QoL. Generally, patients who experience pain relief also experience improvements in functional interference, physical and role function. EBRT provides at least some relief from pain in 60-85%, with complete relief in 15-58%.
2. Single fraction (8Gy) is recommended as standard therapy for uncomplicated bone metastases.
3. For bone metastases associated with neuropathic pain, either 8Gy in one fraction or 20Gy in five fractions is recommended.
4. A multi-fraction schedule is recommended in impending or established pathologic fracture who are not candidates for, or decline, surgical intervention, and for all other complicated bone metastases presentation in patients where treatment is clinically indicated.
5. Repeat EBRT may be considered at a minimum interval of four weeks if: no pain relief was achieved after the first course of radiation; if there was a partial response to first radiation but a better response is desired; or symptom progression occurs after partial or complete response to the first course of radiation therapy.
<b>Hemibody Irradiation</b>
1. Either a single or multi-fraction course of HBI may be considered for palliation of widespread bone metastases, with appropriate premedication. A dose of 6Gy for upper body and 8Gy for lower body is recommended. Sequential treatment of both the upper and lower body requires a four to six week gap for interval recovery of myelosuppression
<b>Radioisotopes</b>
1. The radioisotopes strontium-89 and samarium-153 should be considered if patients are not candidates for multiple local radiotherapy fields or HBI.
2. Radium-223 may be an option for patients with castration resistant prostate cancer.
<b>Spinal Cord Compression</b>
1. Instability of the vertebral column and/or acute onset paresis should be treated immediately (within 24 to 48 hours) with surgical decompression and/or stabilization followed by post-operative RT.
2. EBRT should be considered in patients with impending spinal cord compression, as instituted urgently in those with established spinal cord compression, who are not candidates for surgery
3. In patients with recurrent spinal cord compression in a previously irradiated region, repeat EBRT using conformal techniques can be performed depending on the interval from first treatment, though surgical decompression should be considered as a first option
<b>Steroids in Prevention of Pain Flare</b>
1. For those patients able to tolerate dexamethasone who will receive 8Gy/1 palliative EBRT, dexamethasone (8mg orally daily for five days starting one hour prior to treatment) is an effective prophylactic agent for the prevention of pain flare.

Complete guideline available at: <http://www.albertahealthservices.ca/assets/info/hp/cancer/hp-cancer-guide-r003-palliative-rt-bone.pdf>

## Results: Bleeding and Gastrointestinal Obstruction Recommendations

**Table 4. Palliative Radiotherapy Bleeding and Gastrointestinal Obstruction Guideline: Summary of Recommendations (September 2016)**

Summary of Recommendations
<b>Bleeding</b>
1. EBRT is recommended for advanced prostate or bladder cancer associated with hematuria. It also effectively palliates bleeding caused by gynecologic malignancies
2. In advanced GI malignancies, bleeding, dysphagia, and pain can be controlled with radiotherapy
<b>Gastrointestinal Obstruction</b>
1. For palliation of dysphagia in esophageal cancer, treatment options include external beam radiotherapy (EBRT) or brachytherapy with or without prior stent placement, or in select situations surgical bypass.

Complete guideline available at: <http://www.albertahealthservices.ca/assets/info/hp/cancer/hp-cancer-guide-pal005-palliative-rt-bleeding.pdf>

## Results/ Discussion

Presented here are the summary of recommendations for 4 evidence based clinical practice guidelines focusing on palliative radiotherapy. These guidelines represent a consensus of Alberta's radiation oncologists, physicians, and allied health care professionals. The full versions of the guidelines, with a complete list of recommendations are available on the Alberta Health Services website (<http://www.albertahealthservices.ca/info/cancerguidelines.aspx>).

Evidence based guidelines are systematically developed statements which can assist practitioner and patient decision making, be used as a teaching aid for residents, can be used by allied health care professionals as a reference, and can be used by decision makers to inform decisions on resource allocation.

## Future Directions

- Measure adherence to guideline recommendations.
- Quantitatively identifying areas with limited or low adherence can be used to develop intervention strategies (e.g. audit/feedback) to increase adherence and increase evidence based, standardize care.
- Develop an interactive, hyperlinked e-clinical pathway with guideline recommendations and clinic contact/referral information incorporated into the pathway to allow for easier navigation of the palliative continuum of care (Similar to NICE Clinical Pathways)

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