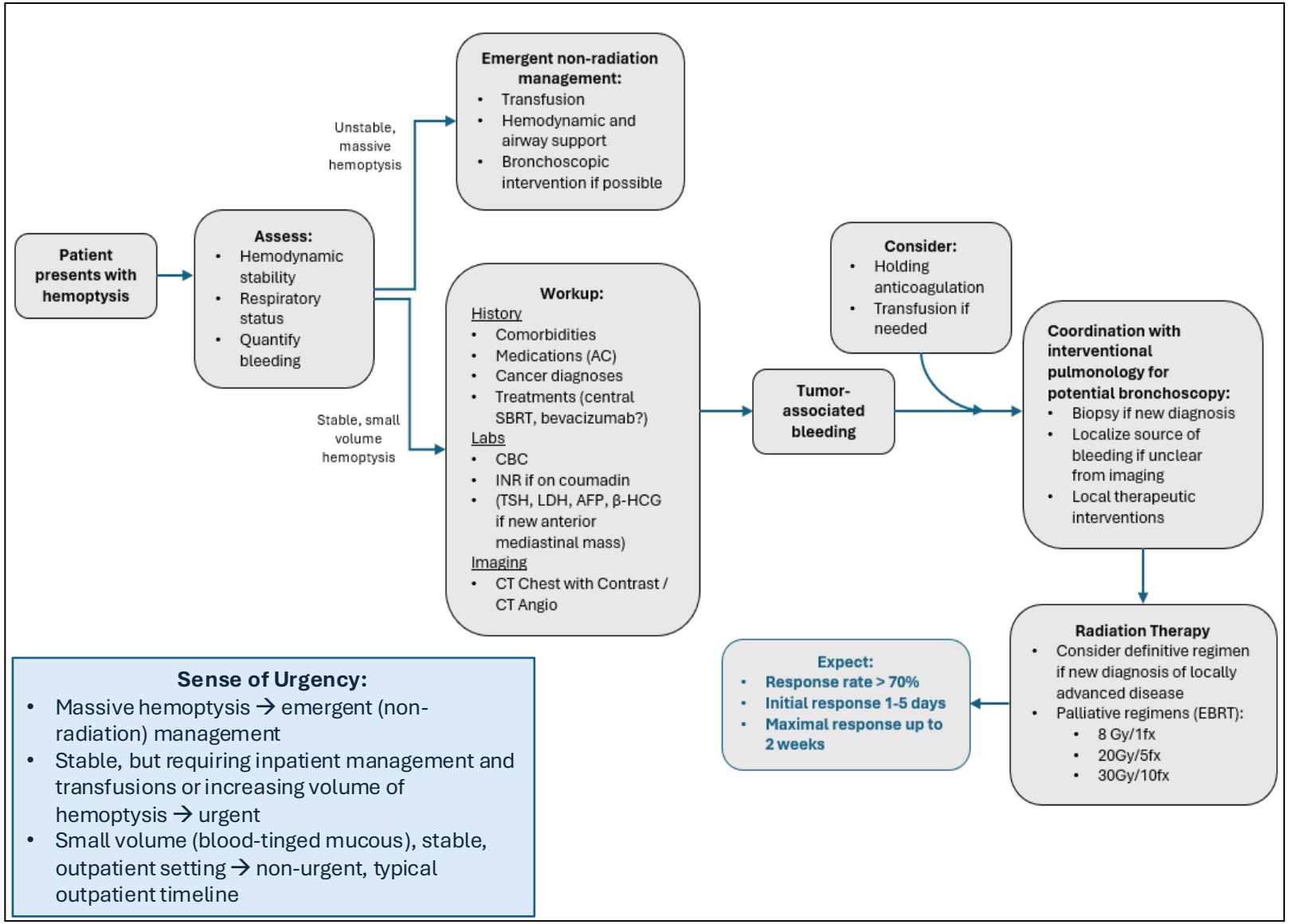
Hemoptysis

Arthur M, Doss VL, Kozono D. Radiation Oncology On-Call Handbook: Hemoptysis. Association of Residents in Radiation Oncology. January 23rd, 2026.

Chief complaint: coughing up blood



Sense of Urgency:

- Massive hemoptysis → emergent (non-radiation) management
- Stable, but requiring inpatient management and transfusions or increasing volume of hemoptysis → urgent
- Small volume (blood-tinged mucous), stable, outpatient setting → non-urgent, typical outpatient timeline

Triage:
Assess hemodynamic stability and respiratory status (pulse ox, blood pressure, ability to clear airway on own).

Massive hemoptysis typically involves tumor invasion of a major vessel and is often dramatic and quickly fatal.

More frequently, seen as a small amount of bleeding in mucous or with coughing, representing tumor eroding into small intrapleural vessel or friable endobronchial tumor.

Workup:
History with attention to comorbidities, anti-coagulation (AC), cancer history, treatment history (central SBRT?, bevacizumab?), recent interventions (bronchoscopic biopsy). Quantify amount of bleeding, duration, progression. Lab work with CBC. CT Chest with contrast / CT Angio. Focused clinical exam.

Management:

Medical: Transfusion > fluids if anemic or hemodynamically unstable, consider holding AC.

Non-Radiation Intervention: If non-life-threatening hemoptysis, then bronchoscopy (coordinate with interventional pulmonology team) is often required to establish diagnosis and exact location of bleeding.

- Able to obtain path if new diagnosis
- Local therapeutic interventions available during bronchoscopy

Radiation Treatment:
Once acute bleeding is stabilized, RT can offer more durable control with aim of reducing risk of future bleeding.

Dose and Fractionation: Definitive regimens if appropriate. Consider palliative regimens such as 8 Gy in 1 fx, 20 Gy in 5 fx, 30 Gy in 10 fx.

Expected Response and Durability: Response rates > 70% within period of days to weeks.

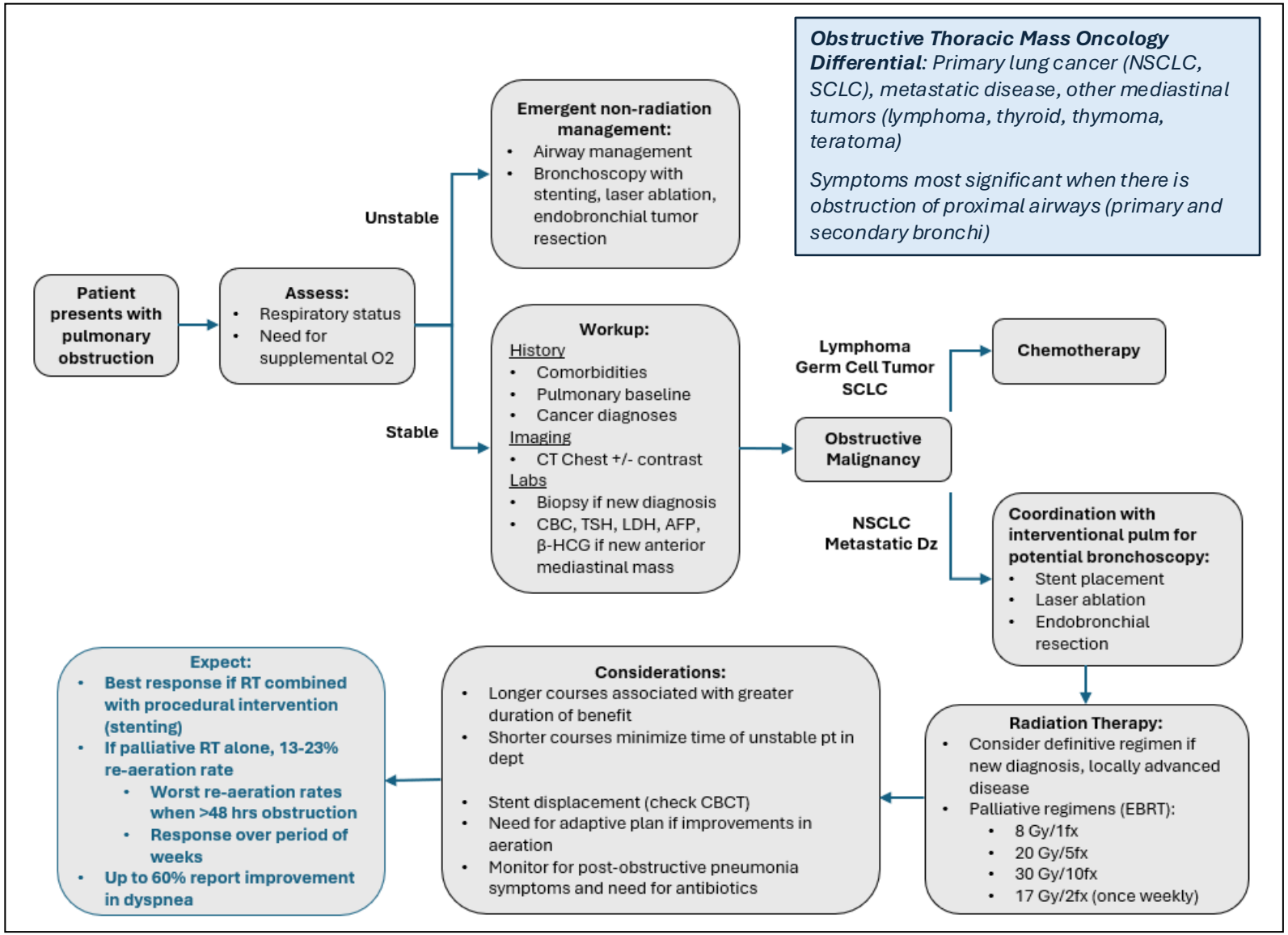
Airway Obstruction

ASSOCIATION OF RESIDENTS IN RADIATION ONCOLOGY

Arthur M, Doss VL, Kozono D. Radiation Oncology On-Call Handbook: Airway Obstruction. Association of Residents in Radiation Oncology. January 23rd, 2026.

RADIATION ONCOLOGY ON-CALL HANDBOOK

Chief complaint: shortness of breath, dyspnea with exertion, increased supplemental oxygen requirements, chest pain, post-obstructive pneumonia



Triage:
Assess respiratory status (need for supplemental oxygen).

Workup:
History with attention to comorbidities and baseline pulmonary status, cancer history. Imaging with CT Chest +/- contrast. Focused physical exam. If new diagnosis, then (bronchoscopic) biopsy, consider lab work (CBC, LDH, AFP, β-HCG) if anterior mediastinal mass.

Management:
Medical:
- Chemotherapy is the primary initial treatment for lymphomas, germ cell tumors, and SCLC.

Non-Radiation Intervention:
- Patients with unstable respiratory status often require initial procedural intervention, such as bronchoscopy with stenting or laser ablation as a faster means of intervention.
- In non-emergent airway situations, discuss multidisciplinary care with interventional pulmonology for possible airway stenting, endobronchial tumor resection/laser ablation prior to RT.

Radiation Treatment:
Most effective after primary intervention (stenting, laser ablation) for reducing risk of re-obstruction from tumor progression.

Dose and Fractionation: Definitive regimens if appropriate (new diagnosis, localized). Consider palliative regimens such as 8 Gy in 1 fx, 20 Gy in 5 fx, 30 Gy in 10 fx, 17 Gy in 2 fx (once weekly).

Additional considerations: Monitor for change in positioning of stent throughout treatment (seen on CBCT), consider adaptive plan if improvement in aeration during treatment.

Expected Response and Durability: Palliative interventions without stenting/laser ablation have low rates of re-aeration (13 – 23%), especially if obstruction >48 hours. However, up to 60% experience improvement in dyspnea.