

I. Fundamentals of Radiation Oncology - 8%

- A. Principles of radiation therapy
- B. Radiobiology
- C. Radiosensitivity
- D. Dose and fractionation
- E. Indications
- F. Purpose in oncology

II. Radiation Safety - 5%

- A. Sources of radiation exposure (e.g. environmental, medical)
- B. Health effects of radiation exposure
- C. Principles of radiation contamination
- D. Principles of protection (e.g., radiation monitoring, restricted areas)

III. Radiation Treatment Modalities - 12%

- A. Treatment planning
- B. Internal radiation therapy
 - 1. Intraoperative
 - 2. Brachytherapy (e.g., GYN, prostate, breast, sarcoma, skin)
- C. External radiation therapy
 - 1. Photon beam therapy
 - a. Volumetric modulated arc therapy (VMAT)
 - b. Stereotactic body radiation therapy (SBRT)
 - c. Stereotactic radiosurgery (SRS)
 - d. Intensity modulated radiation therapy (IMRT)
 - e. Image guided radiation therapy (IGRT)
 - f. Conformal radiation therapy (e.g. two dimensional, three dimensional)
 - 2. Electron beam therapy
 - 3. Proton beam therapy
- D. Radiopharmaceuticals
- E. Other types of radiation therapy procedures (e.g., hyperthermia, coronary brachytherapy, TBI)

IV. Multi-Modality Therapies (e.g. concurrent, adjuvant, neoadjuvant) - 9%

- A. Immunotherapy
- B. Chemotherapy
- C. Hormone therapy (e.g. endocrine, ADT)
- D. Surgery
- E. Targeted therapy

V. Treatment-Related Side Effects and Nursing Management - 40%

- A. Site-specific management
 - 1. Brain/CNS
 - 2. Head and neck
 - 3. Musculoskeletal
 - 4. Thorax
 - 5. Gastrointestinal/upper abdomen
 - 6. Breast
 - 7. Bladder
 - 8. Male pelvis and prostate
 - 9. Female pelvis
 - 10. Re-irradiation (e.g. comorbidities, toxicity)
- B. Disease-specific conditions of radiation treatment
 - 1. Benign conditions (e.g., Dupuytren's contracture, Trigeminal neuralgia, keloid, arthritis)
 - 2. Benign tumors (e.g. meningioma, acoustic neuroma)
- C. Generalized side effects
 - 1. Fatigue
 - 2. Distress (e.g., physiological, psychological)
 - 3. Sexual health
 - 4. Nutrition
 - 5. Pain
 - 6. Radiation dermatitis

VI. Continuum of Care and Survivorship - 12%

- A. Ongoing health assessment
 - 1. History and physical
 - 2. Disease state (e.g., diagnostic testing, physical exam findings, performance status)
 - 3. Psychosocial needs
 - 4. Acute toxicities of treatment
 - 5. Late and long-term toxicities of treatment
 - 6. Interprofessional collaboration
- B. Planning
 - 1. Coordination of care
 - 2. Disease trajectory (e.g., definitive, palliative, end-of-life)
- C. Oncologic emergencies
 - 1. Emergencies treated with radiation
 - 2. Other oncologic emergencies (e.g., sepsis, intracranial pressure, DVT)

VII. Specific Population - 8%

- A. Pediatric
- B. Adolescent and young adult
- C. Adult and Geriatric
- D. High risk populations (e.g., incarcerated, lack of resources, multiple comorbidities)
- E. Culturally congruent care

VIII. Professional Practice and Roles - 6%

- A. Ethical and legal issues in radiation oncology
- B. Education and collaboration
 - 1. Patient/Caregiver
 - 2. Interprofessional team
 - 3. Community outreach
- C. Advocacy
- D. Accreditation
- E. Practice improvement (e.g., quality improvement, research, evidence-based practice)
- F. Professional development