

Radiation Oncology Education Collaborative Study Group (ROECSG) Core Curriculum Content Domains and Entrustable Professional Activities

Select tables and figures from:

Jeans EB, Brower JV, Burmeister JW, Deville C Jr, Fields E, Kavanagh BD, Suh JH, Tekian A, Vapiwala N, Zeman EM, Golden DW. **Development of a United States Radiation Oncology Curricular Framework: A Stakeholder Delphi Consensus.** Int J Radiat Oncol Biol Phys. 2023 Apr 1;115(5):1030-1040. doi: 10.1016/j.ijrobp.2022.12.009. PMID: 36549345.

Table 3: Final Radiation Oncology Education Collaborative Study Group (ROECSG) Consensus Curriculum Content Domains, Applied Science Subdomains and Percent Time Allocated

Content Domain/Subdomain	Percentage Time Allocated**
Clinical Oncology	63
Applied Sciences	16
Radiation Physics	40
Radiation and Cancer Biology	33
Biostatistics and Research Methods	27
Professionalism, Leadership, and Interpersonal Communication Skills	8
Quality and Safety*	7
Bioethical and Legal Issues*	2
Diversity, Equity, and Inclusion*	2
Personal Wellness	2

*These content domains should also be integrated within other content domains. This represents additional dedicated curricular hours, independent of other content domains.

**Percent Time Allocated of total residency curricular hours.

Figure 1: Competence by Design Model showing fluidity in training as compared to standard time-based training approach by post-graduate year (PGY) (Adapted from Taylor et al., 2018 [23]).

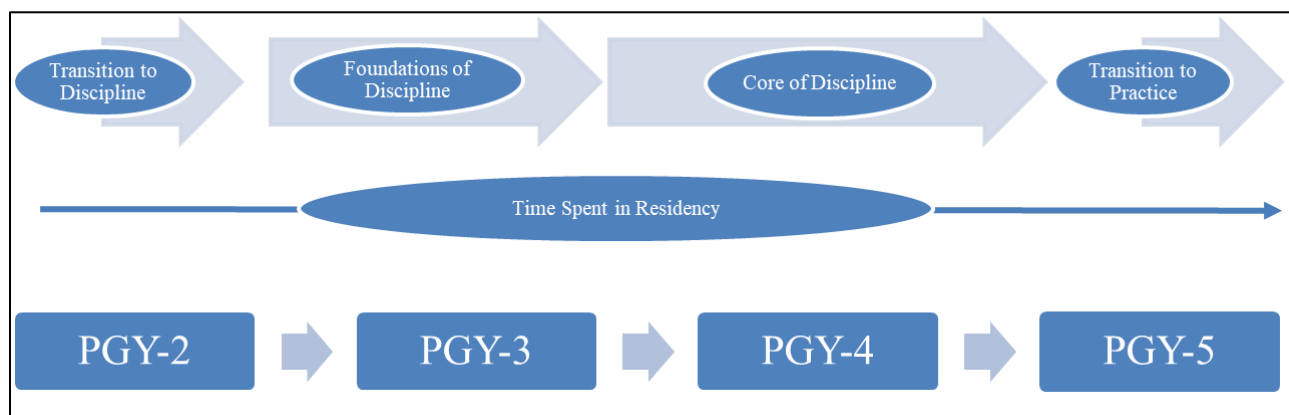


Table 4: Final Radiation Oncology Education Collaborative Study Group (ROECSG) Consensus Curriculum United States Entrustable Professional Activities (EPAs) and assigned Competence by Design (CBD) phases. (EPAs in parentheses are related to the EPA).

*next to EPA# denotes adapted from Taylor et al, 2018 [23].

EPA#	Entrustable Professional Activity	CBD category
1	Triaging medically unstable patients.	Transition to Discipline
2	Establishing a professional relationship with patients, families, and caregivers from diverse backgrounds.	Transition to Discipline
3	Obtaining a disease-site focused patient history.	Transition to Discipline
4	Performing basic radiation oncology physical exam techniques. (EPA24)	Transition to Discipline
5	Accurately, clearly, and concisely documenting radiation oncology clinical care. (EPA49)	Transition to Discipline
6	Assessing patient capacity for medical decision making.	Transition to Discipline
7*	Identifying and addressing knowledge deficits during routine patient care. (EPA52)	Transition to Discipline
8*	Discussing and establishing patients' goals of care to ensure shared decision making.	Foundations of Discipline
9	Counseling patients about lifestyle management to reduce long term cancer risk and improve overall health.	Foundations of Discipline
10	Recommending and interpreting basic diagnostic studies. (EPA25)	Foundations of Discipline
11	Providing evidence-based treatment recommendations for patients with simple radiation oncology clinical presentations. (EPA26)	Foundations of Discipline
12	Educating patients, families, and caregivers about the radiotherapy experience and the radiobiologic rationale.	Foundations of Discipline
13	Presenting an oncologically-focused clinical history.	Foundations of Discipline
14	Determining appropriate simulation techniques and ensuring appropriate execution of simulation for simple cases. (EPA31)	Foundations of Discipline
15	Contouring simple target volumes and organs at risk using appropriate imaging modalities. (EPA32)	Foundations of Discipline
16	Interpreting a radiotherapy treatment plan. (EPA42, EPA50)	Foundations of Discipline
17	Providing education, counseling, and management for patients regarding common acute and late treatment toxicities. (EPA39)	Foundations of Discipline
18	Facilitating communication across professions within a radiation oncology department. (EPA48)	Foundations of Discipline
19	Delivering oncologic care with cultural awareness and cultural humility. (EPA46)	Foundations of Discipline



20	Delivering bad news and facilitating difficult conversations.	Core of Discipline
21	Managing appropriate disclosure and care for patients who have experienced a patient safety incident or severe adverse event.	Core of Discipline
22	Identifying and managing patients that require emergent radiotherapy.	Core of Discipline
23	Providing appropriate radiotherapy and palliative care for patients at the end of life.	Core of Discipline
24	Performing advanced radiation oncology exam techniques. (EPA4)	Core of Discipline
25	Recommending and interpreting advanced diagnostic studies. (EPA10)	Core of Discipline
26	Providing evidence-based treatment recommendations for patients with complex or atypical radiation oncology clinical presentations or complex medical issues. (EPA11)	Core of Discipline
27	Assessing for the use of appropriate local and/or systemic management prior to, concurrent with, or adjuvant to radiotherapy.	Core of Discipline
28	Discussing outcomes of different cancers and treatment paradigms with patients, families, and caregivers.	Core of Discipline
29	Critically appraising evidence including study design, statistical methods, and generalizability as it applies to patient care.	Core of Discipline
30	Collaborating with other medical disciplines and other health professionals, synthesizing recommendations, and integrating these into the oncology care plan.	Core of Discipline
31	Determining appropriate simulation techniques and ensuring appropriate execution of simulation for complex or atypical cases. (EPA14)	Core of Discipline
32	Contouring complex target volumes and organs at risk using appropriate imaging modalities. (EPA15)	Core of Discipline
33	Prescribing target volume doses, selecting dose constraints for organs at risk, and calculating biological dose conversions.	Core of Discipline
34	Participating in a radiotherapy quality and safety program. (EPA51)	Core of Discipline
35	Reviewing pre-, intra-, and post-fraction imaging and recommending appropriate patient shifts.	Core of Discipline
36	Determining appropriate clinical indications for and treating with unsealed sources.	Core of Discipline
37	Performing simple brachytherapy procedures.	Core of Discipline
38	Supervising stereotactic radiotherapy treatments.	Core of Discipline
39	Providing education, counseling, and management for patients regarding uncommon acute and late treatment toxicities. (EPA17)	Core of Discipline



40	Formulating a plan, performing emergency monitor unit calculations, and supervising radiotherapy in an emergency clinical setup.	Core of Discipline
41	Formulating a long-term oncologic / survivorship care plan for patients.	Core of Discipline
42	Evaluating a radiotherapy treatment plan. (EPA16, EPA50)	Core of Discipline
46	Advocating for patients to receive appropriate oncologic care taking into account health disparities and inequities. (EPA 19)	Core of Discipline
43*	Facilitating transfers of care through the health care system.	Transition to Practice
44	Advocating for appropriate use of radiotherapy as a treatment modality at multidisciplinary tumor board and educating other physicians and allied health professionals about the role of radiotherapy.	Transition to Practice
45	Performing complex brachytherapy procedures.	Transition to Practice
47	Identifying bias and harassment in the professional environment and utilizing appropriate mitigation strategies.	Transition to Practice
48	Managing patient care across professions within a radiation oncology department. (EPA18)	Transition to Practice
49	Appropriately documenting to convey management plan to patient and care team and to support billing charges. (EPA5)	Transition to Practice
50	Providing feedback on a radiotherapy treatment plan to planning staff or peers. (EPA16, EPA42)	Transition to Practice
51*	Identifying and analyzing system-level safety, quality, or resource stewardship concerns in radiotherapy delivery. (EPA34)	Transition to Practice
52*	Identifying continuing education needs in clinical practice and addressing them with a learning plan. (EPA7)	Transition to Practice

Table 5: Entrustability Scale (Adapted from Taylor et al., 2018 [23])

Level of Entrustment	Resident Role
1	Observe
2	Resident performs EPA with direct supervision
3	Resident performs EPA with indirect supervision
4	Resident performs EPA without any supervision
5	Resident can oversee other residents performing the EPA

EPA = Entrustable professional activity

