in safely resuming anal sexual activity after treatment for anal or rectal cancers.

Materials/Methods: A comprehensive review of the literature on the effects of radiation and chemotherapy on the pelvic organs and sexual function was conducted. Within a single institution, a multidisciplinary approach, integrating expertise from oncology, urology, and patient advocacy groups informed guideline development. Additionally, input from patients who have undergone pelvic radiation informed the recommendations. Key focus areas included the impact of radiation on tissue integrity, psychological considerations, pain management, and strategies for safely resuming receptive anal sex.

Results: Although the literature on anal sexual health in cancer treatment is limited, existing literature on sexual health in prostate cancer and insights from vaginal health practices post-pelvic radiotherapy informed our guidelines. Our resulting guidelines provide detailed recommendations for patients and healthcare providers to navigate anal sexual health challenges related to anal and rectal cancer treatment. Key recommendations include: informational characterization of the effects of chemotherapy/radiation on pelvic organs; avoidance of receptive anal sex during and immediately after radiation therapy to prevent pain, bleeding, and infection; use of anal dilators, pelvic floor therapy, and NSAIDs to improve tissue flexibility and reduce discomfort post-treatment; psychological support, including sex therapy and couples counseling, to address changes in sexual desire and intimacy; practical strategies such as lubrication, lidocaine cream, warm baths, and dietary adjustments to ease the transition back to sexual activity; emergency guidance for managing complications such as excessive bleeding.

Conclusion: These guidelines provide a structured, multidisciplinary, evidence-based approach to addressing anal sexual health concerns for individuals undergoing and recovering from anal or rectal cancer treatment. They aim to support patients in maintaining intimacy and sexual wellness while ensuring safe and gradual recovery. Enhancing provider engagement and patient education is essential for improving sexual health outcomes and overall quality of life for cancer survivors. Future efforts will focus on patient feedback, validation, and dissemination within the oncological community.

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Characterizing the Clinical Role of Radiation Oncology Advanced Practice Providers Using Clinical Entrustable Professional Activities

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Purpose/Objective(s): Advanced Practice Providers (APPs), including Physician Associates/Assistants (PAs) and Nurse Practitioners (NPs), are being increasingly utilized in radiation oncology. However, radiation oncology-specific training for APPs is not standardized. This study aims to elucidate the current role of United States radiation oncology APPs, assess clinical responsibilities, and identify areas where formalized training can ensure APPs are practicing at their full scope of practice.

Materials/Methods: A survey was distributed to radiation oncology APPs in North America collecting data on demographics, practice structure, training, and clinical tasks using the framework of the 52 Entrustable Professional Activities (EPAs) developed by the Radiation Oncology Education Collaborative Study Group (ROECSG). Participants rated their level of independence for each EPA and provided free-text responses on additional responsibilities not covered by the EPAs.

Results: The response rate was 121/204 (59%). 37 PAs and 84 NPs participated. 53.7% practiced a different specialty before working in radiation oncology. 63.6% had three or more APPs in the department and 71.9% covered multiple physicians. 65.3% worked in a practice that utilized radiation oncology residents and 79.7% of these APPs reported working directly with the residents. 74.4% do not perform any procedures. 115/121 (95%) complete follow-up and survivorship visits, 86/121 (71%) complete unscheduled acute symptom visits, 79/121 (65%) complete out-patient consults, 55/121 (45%) complete in-patient consults, and 46/121 (38%) complete weekly on-treatment visits. 21.5% specialized in one disease site, 40.0% covered more than one disease site, and 38.8% covered all disease sites. >90% perform 37/52 ROECSG EPAs in some capacity. >90% complete EPAs 2, 4, 7, 18, and 19 independently. >90% do not complete EPAs 15, 32, 33, 38, and 40. Only 2.5% of APPs received formal radiation oncology training during their APP education. Significant differences were not observed between PA and NP responsibilities.

Conclusion: APPs are performing many of the ROECSG EPAs, primarily during follow-up and survivorship visits. However, job responsibilities vary widely across radiation oncology clinics nationwide, underscoring the need for formalized education. Bridging these educational gaps is essential to empower APPs to meet the growing demands of cancer care, support the evolving field of radiation oncology, and enhance the overall quality of patient care.

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Evaluating an Interactive Online Contouring Education Platform for Radiation Oncology Residents: Results of an International Longitudinal Randomized Controlled Trial

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Purpose/Objective(s): Variability in contouring practices can negatively impact patient outcomes. Traditional residency education relies on an apprenticeship model and published guidelines, which may lack accessibility, standardization, and personalized feedback. We hypothesized that iContour, an interactive online educational platform, would improve contouring accuracy among radiation oncology residents over the course of a clinical rotation.

Materials/Methods: iContour is a web-based platform that displays anonymized DICOM images with standard contouring functionalities. Two forms of disease site-specific educational priming content were available: short form providing a brief case overview, and long form which had in-depth instructional videos. After the priming content, users practiced contouring a case and received feedback including visual comparisons with expert contours and Dice Similarity Coefficient (DSC) measurements. All

participants were completing a clinical rotation in either the Head/Neck (HN), Gynecologic (Gyn), or Gastrointestinal (GI) disease sites for the first time. They were randomly assigned in a 1:1:1 ratio to receive access to long form iContour cases, short form iContour cases, or no access (control arm) during their rotation. Each resident completed a pre and post-rotation contouring assessment consisting of three tasks from their respective disease site. The primary outcome was improvement in overlap with expert contours (measured by DSC scores) from the pre-test to the post-test across study arms. Subgroup analyses compared short vs long interventions and performance across disease sites.

Results: The trial enrolled 31 resident physicians, primarily from the US (n=27), with experience ranging from PGY-1 to PGY-5 (median PGY-2). Participants rotated in GI (n=5), GYN (n=14) or HN (n=12). Pre-rotation contouring scores were higher for GYN rotators (mean DSC 0.74 +/- standard deviation (SD) 0.19) than GI (mean 0.46 +/- 0.23) or HN (mean 0.58 +/- 0.22), p<0.001. Changes in DSC scores from pre- to post-rotation varied across study arms (Table 1). The differences in contouring improvement between iContour and control arms were not statistically significant (p=0.5624). A linear mixed effects model showed that iContour usage, module type (short/long), and disease site did not significantly impact contouring improvement. Table 1. Change in DSC from pre to post-rotation test by study arm (mean +/- SD).

Conclusion: The interactive iContour platform did not significantly improve contouring accuracy compared to standard clinical education. Resident contouring remained highly variable with only small improvements even after a dedicated disease site rotation. These findings underscore the need for continued efforts to enhance contouring education and standardization.

Abstract 1022 — Table 1

	Control	iContour
GI	0.09 +/- 0.24 (n=3)	0.11 +/- 0.14 (n=2)
GYN	0.00 +/- 0.14 (n=4)	0.08 +/- 0.16 (n=10)
HN	-0.08 +/- 0.12 (n=4)	0.03 +/- 0.15 (n=8)

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Experimental Index Fund Investment vs. Historical NIH Grant Application Strategy to Fund Clinical Radiation Oncology Research

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Purpose/Objective(s): Academic radiation oncologists are encouraged to obtain NIH grant funding to maintain salary-protected research time. Given the low likelihood of funding, small amount funded, and time spent writing unfunded grants, it is unknown if physicians could more efficiently cover protected research time by an alternative approach using passive income index fund investing from short-duration clinical patient volume. We hypothesize that an experimental index fund investment strategy would outperform the historical NIH grant approach in maintaining funding at 5, 10, and 20 years.

Materials/Methods: We assumed both physician sets were hired at 0.6 FTE clinically (3/5 weekdays), 0.4 FTE protected (2/5 weekdays), and expectation to have 0.2 FTE protected by year 5. For the historical approach, we assumed 2 grant submissions/year to the NIH/NCI x 4 years, NCI funding success of 8%/application, 7.8% of funding to clinicians, $449,000 average funding amount, from published work. For the experimental approach, we assumed the physician taking an extra 0.2 FTE x 5 years (total 0.8 FTE/year), total charges of $2.5M/year, subtract 40% for hospital overhead, proceeds in 90% VTSAX + 10% VBTLX or equivalent, dividends reinvested, 0.07% fees, $100K/year withdrawal, using Monte Carlo simulations with random historical cycles in the USA during 1871-2023, 0% capital gains tax, inflation-adjusted. 100 simulations were run with each strategy.

Results: The success rate of the historical strategy was 5/100 simulations by 5 years, with awardees having $449,000. This resultant funding was only sufficient to cover 0.04 FTE over 5 years, nothing after. 0 physicians had funding by 10+ years, all were shifted back to 0.8 clinical FTE. Using the experimental strategy, at year 5, 100/100 of simulations resulted in physicians obtaining >$1M, median of $1.8M (interquartile range $1.6M to $2.1M). Based on Monte Carlo analysis, at 10 years, 100% of portfolios were successful to continuously fund salary at $100,000/year, without additional clinical FTE, median balance $2.1M (interquartile range $1.2M to $3.0M). At 20 y, 83/100 (83%) of physicians (111/133 cycles) were successful, median balance $2.2M (interquartile range $0.7M to $4.1M). Both strategies struggled during 20/152 years (e.g., depressions, wars, shutdowns). Funding generated by the historical strategy was payable only to the university; that from the experimental strategy was payable to any party (university, hospital, investigator, etc.). To equal the experimental success funding rate just at 5 years, the historical strategy physician would have to submit >40 grants/year.

Conclusion: The experimental approach was vastly superior to the historical approach in obtaining research funding and building a long-term capital-driven research program. If the NIH and NCI intend to improve funding of academic radiation oncologists, they should increase grant size, funding success rate, clinician funding, salary covered, duration, and broaden payable parties.

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Phase I Study of Hypofractionated Whole Pelvis Radiation in Endometrial Cancer Using a Novel Patient-Reported Outcomes Continual Reassessment Method (PRO-CRM)

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Purpose/Objective(s): Treatment of stage III endometrial cancer after surgery includes adjuvant chemotherapy ± Whole Pelvis Radiation (WPRT). WPRT has historically been delivered to 45-50.4 Gy at 1.8 Gy per fraction. Hypofractionation can offer greater convenience to patients with condensed treatment package time, however the tolerance of hypofractionated WPRT regimens for gynecologic cancers is not well described. Clinician reported toxicity often underestimates patient reported toxicity during pelvic RT. This phase I study aimed to identify the maximum tolerated dose per fraction for hypofractionated WPRT using a novel patient-reported outcomes-CRM design incorporating both acute clinician and patient reported Dose-Limiting-Toxicity (DLT) criteria.

Materials/Methods: Tumor and normal tissue BED & EQD2 calculations were utilized to select 2 hypofractionated regimens most