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Advanced Practice Provider–Led Trials in Radiation Oncology: Are We Missing the Opportunity?

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Abstract

Advanced practice providers (APPs) are integral members of radiation oncology care teams yet remain underrepresented in clinical research leadership. This article explores the barriers, opportunities, and strategic pathways for expanding APP-led research, particularly in patient-reported outcomes (PROs) and health services research. Despite APPs' daily proximity to symptom management, patient communication, and care delivery workflows, systemic challenges such as limited protected time, inconsistent credentialing policies, and lack of mentorship inhibit broader scholarly engagement. National initiatives like The Patient-Reported Outcomes Tools: Engaging Users and Stakeholders (PROTEUS) Consortium offer accessible tools and funding opportunities to promote rigorous, patient-centered PRO integration in trials and clinical practice. By aligning APP strengths with national research priorities and supporting protected time, mentorship, and clearer principal investigator pathways, institutions can unlock a critical avenue for innovation. Advancing APP-led research is not just an investment in professional development but also a strategic imperative to ensure radiation oncology research is as patient-centered, inclusive, and impactful as the care it aims to improve.

Advanced practice providers (APPs), including nurse practitioners (NPs) and physician assistants (PAs), are essential members of radiation oncology teams, contributing to acute toxicity management, longitudinal patient education, workflow optimization, and survivorship care. Their proximity to the patient experience and clinical expertise places them at the forefront of care delivery with unique opportunities to inform and lead practice-based research. While APPs increasingly support clinical trials, they remain underrepresented in research leadership roles. In a field where trials often prioritize tumor control or technical precision, questions centered on

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quality of life, patient navigation, and care delivery are often underexplored. This gap is not due to a lack of insight or relevance but rather a complex interplay of historical norms, unclear pathways, and institutional inertia. This article highlights practical, collaborative strategies to expand APP-led research in radiation oncology. While not all APPs will pursue scholarly work, creating accessible pathways for those interested is essential to fostering a more inclusive and innovative research culture.

WHY THIS MATTERS IN RADIATION ONCOLOGY

Radiation oncology exists at the intersection of high-precision technology and high-touch patient care, and APPs sit squarely at that interface. While the field continues to evolve through innovations in imaging, adaptive radiotherapy, and machine learning, APPs routinely manage the day-to-day human impact of these treatments, supporting patients through managing acute toxicities, coordinating care logistics, and addressing psychosocial stressors.

At the same time, research participation remains limited across the oncology landscape. Between 2013 and 2017, only 7.1% of U.S. adults with cancer enrolled in treatment trials, with even lower participation in studies focused on quality of life (2.8%), diagnostics (2.5%), and genetics (3.6%; Unger et al., 2024). These underrepresented areas mirror domains where APPs possess valuable insight, such as symptom burden, care delivery, and patient navigation. However, a national survey by Braun-Inglis and colleagues (2022) revealed that although 97% of oncology APPs recognize the value of clinical trials, fewer than 30% felt equipped to participate beyond supportive roles, and even fewer had served as investigators.

While radiation oncology is making strides in incorporating patient-centered endpoints, such studies often receive less prominence in traditional trial portfolios. Meanwhile, APP-led or APP-partnered trials, common in other oncology subspecialties, remain underleveraged in radiation oncology. Expanding research leadership opportunities for APPs is not about shifting responsibilities but tapping into a wellspring of underrecognized expertise. With the proper support, APPs can help shape a more responsive research agenda where patient experience and operational realities are integrated alongside technical innovation.

BARRIERS TO APP-LED TRIALS

Despite expanded clinical scope, APPs face persistent structural and cultural barriers to leading research in radiation oncology. Chief among these is the challenge of time. Radiation oncology clinics are high-volume and tightly scheduled, and the breadth of APP responsibilities, spanning acute care, education, documentation, and coordination, leaves little bandwidth for protocol development, data analysis, or scholarly writing. Even highly motivated APPs may find their most innovative ideas sidelined without formal support. Academic medical centers that employ APPs often reference the importance of protected time for research, yet few departments provide structured release time to support their engagement in scholarly activity. Incorporating even modest dedicated time can transform research from extracurricular ambition into a viable part of the APP role. This investment fosters academic engagement and may improve retention, satisfaction, and visibility of APP contributions.

In parallel, inconsistent credentialing policies present a significant hurdle. Although many APPs complete required research certifications, such as Good Clinical Practice and human subjects training, they often encounter unclear or restrictive policies when seeking principal investigator (PI) or co-investigator status. The lack of standardized institutional pathways contributes to the underutilization of APP research capacity, even in settings where they are deeply embedded in clinical workflows and have generated feasible, relevant questions. Some institutions exclude APPs from formal protocol authorship or leadership, even when they are key in operationalizing the study. Providing more precise definitions of eligibility criteria for research leadership roles, including pathways for APPs to co-lead quality improvement (QI) projects or prospective studies, would promote equitable participation and more accurately reflect the interpersonal nature of radiation oncology care.

Additionally, implicit cultural norms often frame APPs as implementers rather than

innovators, limiting their perceived legitimacy in scholarly roles. This perception discourages APP-led investigation and reinforces a hierarchy that undervalues the clinical expertise and operational insight APPs bring. These strengths uniquely position them to lead research grounded in the realities of radiation oncology practice. Findings from the 2022 National Cancer Institute's (NCI) Community Oncology Research Program (NCORP) Landscape Assessment Survey underscore this gap by revealing that only 5% of participating sites reported APPs serving as PIs on trials, and just 3% indicated APP involvement in protocol development (Braun-Inglis et al., 2024). These figures highlight the underutilization of APPs in research leadership and the opportunity to align research participation with the collaborative, team-based model that advances oncology care.

Mentorship remains another significant gap. In a national survey of over 900 APPs, only 19.8% reported having a mentor. Those who did were significantly more likely to hold academic titles, report greater career satisfaction, and feel confident in their ability to engage in scholarly activity (Herndon et al., 2024). However, mentorship for APPs often remains informal or unavailable, especially for those outside major academic centers. Without structured mentorship models, particularly those that pair early-career APPs with experienced investigators or faculty, translating clinical observations into publishable research remains an uphill climb. Initiatives that normalize mentorship as a component of APP onboarding and professional development could create the scaffolding needed for suitable engagement in research. Moreover, leveraging cross-disciplinary mentorship, connecting APPs with MDs, PhDs, pharmacists, and other researchers, can strengthen the trial design, broaden visibility, and accelerate APP scholarship.

OPPORTUNITIES AND SOLUTIONS: ADVANCING APP-LED RESEARCH IN RADIATION ONCOLOGY

Radiation oncology offers fertile ground for APP-led research, particularly in symptom management, care delivery models, patient-reported outcomes (PROs), and QI projects. These domains align directly with both daily APP practice and national priorities. The 2025 American Society for Radiation Oncology (ASTRO) Research Agenda (Figure 1) identifies PROs and health services research as critical areas for advancement, both highly suitable for APP leadership. Patient-reported outcomes enhance the sensitivity and relevance of outcome measurement and are foundational to patient-centered research. However, their implementation in radiation oncology trials remains inconsistent. A cross-sectional analysis of National Clinical Trials Network (NCTN) radiation trials revealed that although 56.4% incorporated PROs, few designated them as primary endpoints, and PRO data publication often lagged behind survival data (Howell et al., 2021). This gap underscores a missed opportunity to center patient experience in trial design. Advanced practice providers, who manage real-time symptom burden, toxicity trends, and psychosocial needs, are uniquely positioned to close this gap by leading studies that elevate the patient's voice and enhance clinical relevance. To support this, national initiatives such as The Patient-Reported Outcomes Tools: Engaging Users and Stakeholders (PROTEUS) Consortium offer step-by-step, noncommercial guidance and curated tools for integrating PROs into clinical trials and practice. Endorsed by key organizations, including ASTRO and the American Society of Clinical Oncology (ASCO), PROTEUS provides training resources, implementation checklists, and funding opportunities explicitly targeting PRO-focused projects (The PROTEUS Consortium, 2025). These resources offer a tangible starting point for APPs interested in patient-centered outcomes and could serve as a bridge between clinical observations and formal research initiatives.

Similarly, health services research focuses on access, equity, cost-effectiveness, and system efficiency, all of which present a natural extension of the APP role. Advanced practice providers often serve as care navigators, workflow architects, and frontline problem-solvers. Investigating disparities in radiation therapy access, evaluating the financial burden of treatment, or streamlining transitions in care are examples of questions APPs are well equipped to explore. These topics align with ASTRO's 2025 research priorities and reflect the operational lens APPs bring to patient care.

Figure 1. American Society for Radiation Oncology's (ASTRO's) 2025 research agenda.

Institutions can foster APP-led scholarship by embedding research expectations into promotion pathways, providing modest protected time, and encouraging APPs to participate in departmental research forums. Establishing structured mentorship pipelines can offer critical guidance for navigating study design, institutional review board processes, and authorship. As APPs increasingly take on responsibilities such as reconsent conversations, eligibility reviews, and early-phase trial logistics, there is growing recognition that their involvement should extend beyond supportive roles to include trial planning, scientific review committees, and protocol development (Lewis, 2022). Empowering APPs to lead improves research inclusivity and strengthens the operational fidelity and patient-centeredness of trial conduct across the field.

CONCLUSION

As radiation oncology advances in technological precision and personalized care, it must also evolve regarding whom it empowers to lead the scholarly inquiry. Advanced practice providers offer a unique combination of clinical acumen, operational fluency, and trusted patient relationships. These attributes align directly with the field's emerging research priorities. With the right mentorship, time, and policy support, they can transform everyday observations into meaningful contributions that advance care. The question is no longer whether APPs can lead research but whether institutions are ready to support them. Elevating APP scholarship is more than professional development. It is a strategic investment in the future of oncology that is inclusive, innovative, and grounded in the lived experiences of patients.

Disclosure

The author has no conflicts of interest to disclose.

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