

# Advanced Practitioners: Collaborators in Radiation Oncology

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## Abstract

Advanced practitioners (APs), including physician assistants (PAs) and nurse practitioners (NPs), are medical professionals with advanced training, degrees, and certifications that qualify them to diagnose and treat medical conditions in a wide variety of health-care settings. As such, APs have been collaborators in radiation oncology practice for decades to complement the role of radiation oncologists. In 1999, Kelvin and Moore-Higgs first reported data on how APs participated in radiation oncology practice. Over the 20 years since that publication, more articles have described how APs have been collaborators to varying degrees in nearly all aspects of radiation oncology practice. However, significant legislative, regulatory, and educational barriers may limit the optimal practice of APs in radiation oncology. In order to mitigate projected shortages of radiation oncology services while maintaining high levels of patient satisfaction, enhanced collaboration with APs in radiation oncology practice is needed.

According to the 2018 version of “Practice Parameter for Radiation Oncology” by the American College of Radiology (ACR) and the American Society of Radiation Oncology (ASTRO), the delivery of radiation therapy is a complex process and requires completion of 11 distinct but interrelated activities: (1) clinical evaluation, (2) establishing treatment goals, (3) informed consent, (4) patient education, (5) simulation of treatment, (6) treatment planning, (7) physics, (8) external beam treatment or brachytherapy,

(9) patient evaluation during treatment, (10) treatment summary, and (11) follow-up evaluation. A concerted team effort by well-trained health-care professionals is required for the safe, effective, and timely delivery of radiation therapy. Radiation oncology teams typically consist of radiation oncologists, medical physicists, dosimetrists, radiation therapists, and oncology nurses, but may also include APs and other health-care professionals (American College of Radiology and American Society for Radiation Oncology, 2018).

## NEED FOR COLLABORATION WITH ADVANCED PRACTITIONERS IN RADIATION ONCOLOGY

Yang and colleagues, in conjunction with the American Society of Clinical Oncology (ASCO), published a health policy article in 2014 that provided an original analysis of projected demand for and supply of radiation oncology services through the year 2025. The analysis reported that without the implementation of the Affordable Care Act (ACA), the demand for radiation oncology services will rise 40% by 2025, while the supply of said services will only rise 25%. It was also noted that implementation of the ACA would compound this shortage by demanding an additional 500,000 oncology visits in 2025 alone.

Two possible solutions to the projected radiation oncology service shortage were proposed by Yang and colleagues: (1) increasing residency and fellowship positions for training new radiation oncologists and/or (2) improving collaboration with APs. The ability to procure adequate funding to expand residencies and fellowships proportional to demand was described by Yang and colleagues as “uncertain.” Emphasis was placed on promoting collaboration with APs, as a prior study demonstrated that oncology practices that utilized APs may see significantly more new patients than practices that did not (Yang et al., 2014).

## SUPPORT FOR ENHANCED COLLABORATION

In 2014, the Advanced Practitioner Society for Hematology and Oncology (APSHO), a national organization representing APs in all subspecialties of clinical oncology, hosted a roundtable discussion to promote collaborative practice with APs in oncology. Prominent members of ASCO, ASTRO, the National Comprehensive Cancer Network (NCCN), and the American Society of Hematology (ASH) participated. During the discussion, Louis B. Harrison, MD, FASTRO, Past President and Past Chairman of ASTRO, stated, “All of us on the panel are on the same page regarding the value of collaborative practice [with APs], but our professional organizations may be at different levels of maturation in this area.” Robert W. Carlson, MD, of the NCCN stated, “It may be a matter of finding ‘the sweet spot’ for how best to use the skill set

of an AP within the team model.” Recognizing the radiation oncology community had lagged behind in collaborating with APs, it was reported during the round table discussion that a partnership had been formed between ASTRO and ASCO to address this problem (Reckling, 2014).

In 2013, the Institute of Medicine (IOM) identified APs as key stakeholders in solving the broader cancer care crisis and recommended federal and state governments take steps to eliminate scope-of-practice and reimbursement barriers to optimal team-based practice (Institute of Medicine, 2013). Similarly to the recommendations of the IOM, the Federal Trade Commission, American Association of Nurse Practitioners, and American Academy of Physician Assistants have supported legislation to advance the practice authority of advanced practitioners (Federal Trade Commission, 2014, 2016, 2017).

## LITERATURE ON COLLABORATION WITH ADVANCED PRACTITIONERS

Data from four surveys of APs working in radiation oncology were published between 1999 and 2008 that demonstrate that AP collaborators have made broad and meaningful contributions to radiation oncology teams for decades.

In a 1999 study, Kelvin and Moore-Higgs reported the results of a nationwide survey of 86 APs working in radiation oncology in both private practice and academic settings. To varying degrees the surveyed APs reported obtaining histories and performing physical exams during consultations, on-treatment visits, and follow-up appointments. Some of the study participants also reported ordering diagnostic studies and prescribing medications. The results of the survey also suggested that some APs regularly participated in simulation and/or radiation treatment planning by administering IV contrast, drawing initial target volumes, reviewing and signing cone beam films for physician co-signature, and even writing treatment prescriptions for physician co-signature (Kelvin & Moore-Higgs, 1999).

Carper and Haas in 2006 reported results from two Oncology Nursing Society (ONS) surveys of advance practice nurses (APNs) working in radiation oncology. A 2001 survey of 22 APNs working in radiation oncology docu-

mented that they participated most frequently in direct patient care followed by patient education. Other reported functions of the study participants included performing consultations and coordinating support groups in addition to other professional responsibilities such as participating in research and teaching students. Results of a 2005 cross-sectional survey of 28 APNs working in radiation oncology reported APNs being involved in varying degrees of direct patient care by completing histories and physical exams, managing symptoms, conducting follow-up visits, and performing hospital admissions. These APNs also reported participation in simulations, weekly treatment visits, inpatient care, and research (Carper & Haas, 2006).

Similarly, 35 PAs working in radiation oncology were surveyed by Polansky, Ross, Gould, Parker, and Palmer in 2008. This cross-sectional survey demonstrated that many PAs participated in direct patient care in ambulatory and inpatient settings by taking histories and performing physical exams, formulating assessments and plans, communicating disease progression, providing patient education, obtaining informed consent, and participating in delivering radiation therapy. PAs who reported involvement in delivering radiation therapy endorsed to varying degrees participation in simulation, contouring target volumes, completing radiation prescriptions in preparation for physician signature, verifying patient set up, reviewing and approving port films for physician signature, presenting treatment plans at quality assurance meetings, and documenting external beam summaries (Polansky et al., 2008).

Complementing these four surveys, Moote and colleagues published a 2012 workload analysis of five AP collaborators in an academic medical center radiation oncology practice. These APs spent 32% of their time on direct patient care activities, defined as “touch-time” tasks performed directly with patients, which included consult appointments, follow-up appointments, and on-treatment visits. Of these direct patient care activities, APs primarily collaborated in performing follow-up visits. The remainder of AP time was allocated to carrying out “non-touch time tasks,” such as dictation, ordering and interpreting diagnostic studies, scheduling, preparing for upcoming clinics,

patient phone calls, and discussing patient care with physicians (Moote et al., 2012).

A successful integration of NPs into another academic medical center radiation oncology practice to accommodate increased patient volumes was reported by Hollis and McMnamin in 2014. The authors reported the development of six unique, robust, and increasingly independent NP roles to meet the needs of a diverse patient population. Essential to accomplishing this task was discussing and evolving shared expectations of the NPs in the context of the department's academic mission and taking into consideration the functions that solely a radiation oncologist could perform and those necessary for resident training. An orientation curriculum was created by the lead NP that included, but was not limited to, physician/NP preceptor relationships and formal onsite lectures. Ongoing training was also a key aspect of the development plan. Productivity, quality, and financial metrics were devised and followed to ensure objective feasibility and sustainability of the roles. As NPs displayed growth and competency in their individual roles, their ability to clinically collaborate and pursue professional opportunities increased. It was reported that patients, colleagues, and administrators endorsed high levels of satisfaction in regards to the NPs at the radiation oncology practice (Hollis & McMnamin, 2014).

Of note, other surveys have reported high levels of satisfaction for all APs in oncology. Buswell, Ponte, and Shulman reported in 2009 that oncology practice models utilizing APs earned high levels of patient and provider satisfaction while maintaining similar levels of productivity and visits fees compared to practice models that did not utilize advanced practitioners (Buswell et al., 2009).

In 2019, ASTRO made a formal effort to clarify the roles and responsibilities of health-care professionals involved in the delivery of radiation therapy through an updated version of their book, *Safety is No Accident: A Framework for Quality Radiation Oncology Care*. In its pages, the primary role of nonphysician providers (NPPs)—a term referring to NPs, PAs, and clinical nurse specialists (CNSs)—was assisting radiation oncologists in delivering patient care. Specifically, NPPs were reported to function in radiation oncology prac-

tice by participating in clinical evaluation, ongoing psychosocial evaluation, patient and family education, coordination of care, weekly evaluation, follow-up, and survivorship.

Nonphysician providers were also described as being able to effectively participate in assisting physicians in managing side effects related to radiation therapy. They were noted to be able to perform care during follow-up visits that would otherwise be performed by radiation oncologists. Highlighting the value of NPPs, it was stated that treatment follow-up visits are ideally “performed by the treating radiation oncologist or a nonphysician provider to obtain the most accurate information regarding treatment tolerance, side effects, and disease status.” It was concluded that an evolving role of NPPs in radiation oncology centers on coordinating patient care within a multidisciplinary team (ASTRO, 2019).

## BARRIERS TO COLLABORATION

In *Safety is No Accident*, ASTRO identified that legal and regulatory restrictions are barriers to enhanced collaboration with APs in radiation oncology practice (ASTRO, 2019). These legal and regulatory restrictions are intimately tied to financial barriers as well.

Centers for Medicare & Medicaid Services (CMS) has established regulations regarding the billing and delivery of radiation therapy services. In hospital outpatient settings and freestanding radiation therapy centers, CMS requires radiation therapy services be directly supervised by a physician or NPP in order for reimbursement to occur. Most states and health-care institutions currently bar NPPs from providing supervision of radiation therapy services with exceptions in critical access hospitals and small rural hospitals. In addition, NPPs are not able to supervise or review imaging studies for diagnostic or treatment radiation field verification purposes. A radiation oncologist, per CMS regulations, is required to personally perform weekly on-treatment visits to assess for medical toxicities and review the technical details of each radiation therapy patient case (ASTRO, 2018).

Another barrier identified by ASTRO in *Safety is No Accident* is that APs may lack knowledge on evolving radiation oncology technologies and

systemic cancer treatment agents (ASTRO, 2019). Moote and colleagues reported that 33% of physicians and 40% of APs thought providing additional specialized training to APs would help enhance collaborative practice (Moote et al., 2012).

## CONCLUSIONS

Enhancing collaboration with radiation oncology teams and APs is arguably the most viable solution to mitigate projected shortages of radiation oncology services by the year 2025 (Yang et al., 2014) while preserving productivity and visit fees, and achieving high levels of patient and provider satisfaction (Buswell et al., 2009).

Discrepancies exist between the somewhat limited and ambiguous roles of APs in radiation oncology as described by professional organizations such as ASTRO and the broader and more robust responsibilities that APs report they can and do perform in practice. A comprehensive statement by any professional organization defining the roles and responsibilities of APs in radiation oncology is currently nonexistent. It has been suggested that role clarification at a radiation oncology practice level would enhance AP utilization (Moote et al., 2012). Establishing and evolving role expectations at the practice level was a key component of integrating APs into an academic radiation oncology practice (Hollis & McMenamin, 2014).

Furthermore, a variety of barriers to enhanced collaborative practice with APs in radiation oncology exist, including legislative, regulatory, financial, and educational barriers (ASTRO, 2018, 2019; Moote et al., 2012). Some data suggest that educational barriers can be addressed collaboratively at a practice level (Hollis & McMenamin, 2014); however, legislative, regulatory, and financial barriers can only be addressed at state and national levels with the alignment of key stakeholders.

A multidisciplinary, collaborative approach between APs and physicians is essential to address these barriers and enhance AP collaborative practice at a practice level. An article from the 2013 ASCO Annual Meeting reported building successful working relationships between APs and physicians includes focusing on establishing trust, open communication, mutual respect, role expectations, inclusiveness, and working with mutual purpose (Polansky, 2013).



The practicality of these skills is well displayed in a recent *APSHO Empowered* video which presents dialogue between former Johns Hopkins radiation oncology colleagues Joseph Herman, MD, and Amy Hacker-Prietz, MS, PA-C. Dr. Herman and Ms. Hacker-Prietz explain that their highly successful collaborative practice of almost 7 years was also built on a foundation of mutual purpose, shared responsibility, trust, continual communication, and defined roles involving unique contributions. With apparent deep appreciation for his former AP collaborator, Dr. Herman states, “I can honestly say I couldn’t have done my job without you...I hope to increase the importance and utilization [of APs in radiation oncology].” (Hacker-Prietz & Herman, 2016). While practice-level barriers can be overcome with successful AP and physician commitment, legislative, regulatory, financial, and educational barriers will require a similar commitment from AP and physician professional organizations. ●

## Disclosure

The authors have no conflicts of interest to disclose.

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