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The Profession

US Radiation Oncologists (Re)Defined: An American Society for Radiation Oncology Scope of Practice Study



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Purpose: To assess US radiation oncologists' views on practice scope and the ideal role of the radiation oncologist (RO), the American Society for Radiation Oncology (ASTRO) conducted a scope of practice survey.

Methods and Materials: In spring 2019, ASTRO distributed an online survey to 3822 US RO members. The survey generated 984 complete responses (26% response rate) for analysis. Face validity testing confirmed respondents were representative of ASTRO's RO membership.

Results: Nearly all respondents agreed that "ROs should be leaders in oncologic care." Respondents indicated the ideal approach to patient care was to provide "an independent opinion on radiation therapy and other treatment options" (82.5%) or "an independent opinion on radiation therapy but not outside of it" (16.1%), with only 1.4% favoring provision of "radiation therapy at the request of the referring physician" as the ideal approach. Actual practice fully matched the ideal approach in 18.2% of respondents. For the remaining majority, actual practice did not *always* match the ideal and comprised a mix of approaches that included providing radiation at the referring physician's request 24.0% of the time on average. Reasons for the mismatch included fear of alienating referring physicians and concern for offering an unwelcome opinion. One-fifth of respondents expressed a desire to expand the scope of service though interspecialty politics and insufficient training

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were potential barriers. Respondents interested in expanding scope of practice were on average earlier in their career (average years in practice 13.3) than those who were not interested (average years in practice 17.2, $P < .001$). Radiopharmaceuticals administration, medical marijuana and anticancer medications prescribing, and RO inpatient service represented areas of interest for expansion but also knowledge gaps.

Conclusions: These results provide insight regarding US ROs' scope of practice and attitudes on the ideal role of the RO. For most ROs, to provide an independent opinion on treatment options represented the ideal approach to care, but barriers such as concern of alienating referring physicians prevented many from fully adhering to their ideal in practice. Actual practice commonly comprised a mixed approach, including the least favored scenario of delivering radiation at the referring physician's request one-quarter of the time, highlighting the influence of interspecialty politics on practice behavior. Advocacy for open communication and meaningful interdisciplinary collaboration presents an actionable solution toward a more balanced relationship with other specialties as ROs strive to better fulfill the vision of being leaders in oncologic care and being our best for our patients. The study also identified interest in expanding into nontraditional domains that offer opportunities to address unmet needs in the cancer patient's journey and elevate radiation oncology within the increasingly value-based US health care system. © 2020 Elsevier Inc. All rights reserved.

Introduction

The *Red Journal* 1975 inaugural issue featured an editorial by Dr Jerzy Einhorn entitled "The Future of Radiation therapy as a Discipline," in which he described therapeutic radiology's struggle to emerge from the shadow of diagnostic radiology to become a discipline in its own right and establish an oncologic identity distinct from and on equal footing to medical and surgical oncology.¹ Later that year, Dr J. A. Del Regato proudly proclaimed in his presidential address to the American Society of Therapeutic Radiologists, "You have come a long way...!"²; he noted, "There is more to cancer *surgery* than mere surgical skill.... There is more to cancer *chemotherapy* than protocols and mere pharmacology; and ... there is more to *radiotherapy* of cancer than costly equipment and mere dosimetry." He went on to say, "To achieve true expertise and leadership, every one of these specialists must be trained in an atmosphere of cancer work which makes them congenial companions rather than spiteful antagonists." However, Del Regato cautioned that a desire to simply "get along" could lead to a "therapeutic stratagem" not always in the patient's best interest, and that the ideal practice of oncology required "a genuine interest in the fate of the patients."

Now a half-century later, have we really come a long way? The field has successfully shed the mantle of therapeutic radiology—a name implying subservience to radiology—and rebranded as radiation oncology, a full-fledged discipline with its own training and board certification. Our practitioners no longer self-identify as radiotherapists but radiation oncologists (ROs) who can rightfully boast full standing in the multidisciplinary care of cancer patients. But are ROs living up to Del Regato's vision—achieving true expertise and leadership in oncology beyond the mere technical delivery of radiation therapy? In the eyes of some (both within and outside our specialty), ROs are service providers who defer to other specialists rather than care providers who co-manage patients.³ In this time of rapidly growing medical knowledge and capability, ROs can be

critical drivers of scientific advances and high-quality, patient-centered care and redefine our scope of practice to meet the needs of today's patients. To assess the views of US ROs on practice scope, the ideal role of the RO, and collective appetite for expanding services, in 2019 the American Society for Radiation Oncology (ASTRO) undertook a survey of member ROs' scope of practice. Survey results are presented here together with potential actionable solutions to identified concerns.

Methods

Survey development and distribution

The ASTRO Board of Directors and Workforce Subcommittee commissioned a survey study of ROs' scope of practice in 2018. The 5-minute questionnaire was tested for operative and quality purposes, programmed in Qualtrics (Provo, UT), and approved by the ASTRO Board of Directors. The majority of questions were closed-ended, that is, the respondents were asked to select a single choice or "all that apply" among predesigned answers. For example, the question on the ideal approach offered the selection of 1 of 3 choices, and the question on why the actual approach did not match the ideal provided multiple reasons with instruction to "select all that apply." Some questions included a "free text" response option. For the actual approach to care, the respondents were provided the identical 3 choices as for the ideal approach and asked the percent time each option reflected their actual practice. The web-based survey (shown in [Appendix E1](#)) was released March 1, 2019. Individual survey links were electronically distributed to 3822 US active or affiliate RO ASTRO members. Four email reminders were distributed during the 6-week data collection period, which closed April 15, 2019. In total, 984 respondents completed the survey, for a response rate of 26%.

Data analysis

The analysis included only currently practicing US ROs. Responses were kept confidential and analyzed only in the aggregate. Face validity testing was performed, comparing respondents to ASTRO’s 2019 RO membership database with regard to age, sex, practice location, primary employer, and US region (Table 1). Comparability in all categories indicated that the respondents provided credible representation of ASTRO’s general RO membership, which comprises approximately 86% of US ROs according to internal data.

Descriptive statistics and frequencies were produced for categorical and scaled variables. Additional analysis was conducted using cross-tabulations, linear regression, and χ^2 testing, including both univariate and bivariate analyses to detect differences across subgroups. *P* values <.05 were deemed statistically significant. Data analysis was conducted using IBM SPSS Statistics for Windows, version 22.0 (IBM Corp, released 2013, Armonk, NY).

Results

Demographics and practice characteristics

The respondents were a median of 15 years from the completion of residency training (range, 1-55 years). Nearly all respondents (97.3%) were board-certified in radiation oncology, and a small fraction held 2 or more board certifications (5.9%). The majority of respondents worked full-time, with only 7.7% working part-time (30 hours or less per week). See Table 1 for distribution by primary employer, practice location, community type, and other parameters, and comparison with ASTRO’s general RO members.

Among private practitioners, 61.0% were in radiation oncology—only practices and 39.0% in multidisciplinary group practices comprised of 3 (median) other disciplines (range, 1-15). Forty-four percent of respondents self-identified as medical/clinical directors of their practice.

Time spent in patient care was less for ROs in the academic/university system (73.5%) compared with those in private practice (90.9%, *P* < .001) or nonacademic hospital (89.4%, *P* < .001). The number of on-treatment patients was 20.6 (average) among all respondents, and higher in private practice (26.6) than in nonacademic hospitals (20.7, *P* < .001) and academic practices (16.8, *P* < .001). Stratification by community type showed that urban ROs carried the lowest number of patients (18.9) compared with suburban (21.9, *P* < .001) and rural (22.4, *P* = .004) practitioners.

Forty-seven (47.4) percent of respondents self-reported a clinical subspecialty. Subspecialization was more common among academics (74.4%) than ROs in private practice (24.0%, *P* < .001) and nonacademic hospital (26.3%, *P* < .001), and more common in urban (65.6%) than suburban

Table 1 Demographics and practice characteristics of survey respondents and ASTRO US radiation oncologist members

Demographics and practice characteristics	Survey respondents	ASTRO membership (US radiation oncologists)
Primary employer	(n = 983)	(n = 4039)
Academic/ university system	45.8%	38.0%
Private practice	29.3%	53.8%*
Nonacademic hospital	19.7%	N/A
Other	5.2%	N/A
Practice location	(n = 982)	(n = 4039)
Hospital	73.1%	65.9%
Free-standing	26.3%	31.3%
Other	0.6%	N/A
Community type	(n = 983)	
Urban	45.3%	N/A
Suburban	40.2%	N/A
Rural	14.5%	N/A
Medical/clinical director	(n = 983)	
Medical/clinical director	44.4%	N/A
Not a medical/ clinical director	55.6%	N/A
US region	(n = 983)	(n = 4031)
West	19.8%	22.2%
Midwest	25.8%	22.8%
South	32.2%	34.3%
Northeast	22.1%	20.8%
Sex	(n = 760)	(n = 3254)
Male	68.7%	70.8%
Female	31.3%	29.2%
Age generation† (birth year)	(n = 823)	(n = 3472)
Millennials (1981-1998)	15.4%	8.7%
Generation X (1955-1980)	44.3%	40.0%
Baby boomers (1946-1964)	38.2%	47.6%
Silent (1928-1945)	2.1%	3.7%
Specialist	(n = 983)	
Subspecialist	47.4%	N/A
Generalist	52.6%	N/A
Full-time/part-time	(n = 983)	
Full-time	92.3%	N/A
Part-time	7.7%	N/A

Abbreviation: N/A = not available.

* ASTRO membership data do not include nonacademic hospital as an employer category.

† Generation is defined by the Pew Research Center (https://www.pewresearch.org/fact-tank/2019/01/17/where-millennials-end-and-generation-z-begins/ft_19-01-17_generations_2019/).

(38.8%, *P* < .001) and rural ROs (14.0%, *P* < .001). Common subspecialization sites were genitourinary (31.1%), breast (30.0%), head and neck (25.5%), central

Table 2 Length of follow-up for various radiation indications stratified by primary employer

Radiation indications by primary employer	Follow-up duration		
	<1 y	1-5 y	>5 y
Curative—Definitive radiation therapy			
Academic/university system	8.9%	47.1%	43.3%
Private practice	14.7%*	57.5%*	26.0% [†]
Nonacademic hospital	10.8%	63.4% [†]	25.3% [†]
Curative—Adjunctive radiation therapy			
Academic/university system	22.4%	45.6%	28.6%
Private practice	32.2%*	48.3%	16.1% [†]
Nonacademic hospital	30.9%*	56.7%*	10.8% [†]
Palliative—Radiation therapy			
Academic/university system	41.6%	16.0%	28.0%
Private practice	39.7%	14.6%	35.2%*
Nonacademic hospital	47.4%	17.5%	26.3%

Statistically significant comparisons of private practice and nonacademic hospitals to academic/university system are marked by asterisks (* $P < .05$ and [†] $P < .001$).

nervous system (24.0%), thoracic (20.0%), gastrointestinal (18.7%), and gynecologic cancer (17.2%). Less than 10% of respondents subspecialized in each of the following: palliative care, sarcomas, skin, lymphoma/leukemia, and pediatric malignancies. Participation in multidisciplinary tumor boards was nearly universal (94.9% among all respondents), though more common in academic/university systems than private practice (98.4% vs 90.2%, $P < .001$), with nonacademic hospitals at 96.4%.

Respondents saw an average of 21.8 follow-up patients in a 2-week period. This varied by employer: private practice, 25.3; nonacademic hospital, 22.4; and academic/university system, 20.1, with $P < .001$ between private practice and academic/university system. Table 2 shows the follow-up duration for curative and palliative treatments by employer type, with asterisks noting differences between academic versus other practices. There was no difference across community type.

Scope of services

Respondents were presented with a wide range of services and asked to indicate the services in which they had knowledge, as well as the frequency that they provided each of the services (routinely, occasionally, rarely, never). ROs who provided a service routinely and occasionally were scored as providers of the particular service. A majority of ROs provided management of radiation-related symptoms (99.3%), management of cancer-related symptoms (97.2%), narcotic analgesic prescriptions (92.3%), palliative care (87.9%), survivorship care (71.9%), end-of-life counseling (69.7%), administration of intravenous (IV) fluids (50%), management of systemic treatment-related

symptoms (52.8%), and cancer screening (52.8%) (Fig. 1). Between one-quarter to one-third of respondents provided cancer-related genetic counseling (33.4%), administered radiopharmaceuticals/theranostics (31.0%), or prescribed certain anticancer medications, for example, hormonal, targeted systemic therapy (28.1%). One in 10 provided primary care services (10.9%) or medical marijuana prescriptions (10.0%).

Several notable patterns emerged from subgroup analysis of the scope of services. Radiopharmaceuticals/theranostics administration was more common in private practice (40.0%, $P < .001$) and nonacademic hospital settings (35.6%, $P = .0023$) than academic practices (23.9%), and more common among generalists than ROs with a subspecialty (34.4% vs 27.2%, $P = .019$). The prescribing of anticancer medications such as hormonal or systemic targeted therapy was most common among genitourinary subspecialists (64.1%, presumably in reference to hormonal therapy though the questionnaire considered the 2 in aggregate) compared with breast subspecialists (17.6%, $P < .001$), other subspecialists (15.5%, $P < .001$) or generalists (25.7%, $P < .001$). IV fluid administration was more common among ROs subspecializing in head and neck/thoracic/gastrointestinal cancers (68.4%) relative to other subspecialists (43.9%, $P < .001$) and to generalists (43.8%, $P < .001$).

Twenty-one (21.4) percent of respondents were interested in expanding their scope of practice; this was consistent across employer, practice location, and clinical subspecialization (subspecialist vs generalist). Respondents interested in expanding scope of practice were on average earlier in their career (average years in practice, 13.3) than those who were not interested (average years in practice, 17.2, $P < .001$) (Fig. 2). Among the respondents with desire to expand ($n = 198$), 34.3% were interested in adding medical marijuana prescribing, 28.3% radiopharmaceuticals/theranostics administration, 25.3% prescription of certain anticancer medications (eg, hormonal or targeted systemic therapies), 22.7% other, 19.7% admitting patients to a RO inpatient service, 12.6% IV fluid administration, 8.1% management of inpatients, and 6.1% cancer-related genetic screening-counseling (Fig. 1). Of note, less than 40% of all participants believed that they had the knowledge to provide these particular services (Fig. 1). Few respondents indicated interest in expanding into cancer screening (2.0%) or primary care (2.0%). The top challenges participants believed that they would face to expanding services included: political infeasibility (49.0%), insufficient training (39.0%) or time to acquire expertise in that area (28.6%), lack of support from leadership (19.5%), lack of nursing support (12.9%), lack of financial resources (10.0%), insufficient patient volume (7.1%), or other reasons (11.0%). Among respondents who were not interested in expanding the scope of services, the reasons were insufficient time (59.4%), belief that this was not within a RO's role (28.8%), insufficient training (27.9%), lack of interest (27.2%), and political infeasibility (10.1%).

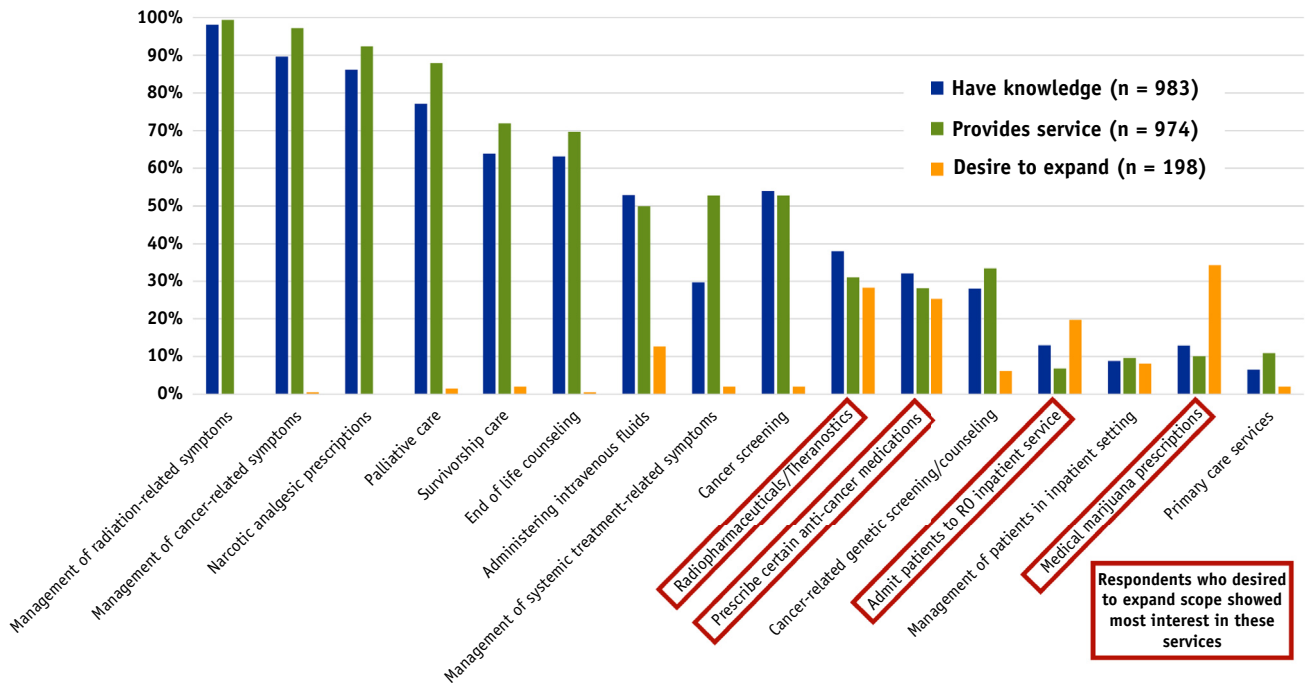


Fig. 1. Knowledge and provision of services and desire to expand. Blue = percent of respondents with knowledge in the service (n = 983). Green = percent of respondents providing the service (routinely + occasionally) (n = 974). Orange = breakdown of desired services among respondents who expressed interest in expanding their scope of service (n = 198). Respondents who desired to expand scope showed most interest in services highlighted in red boxes. *Abbreviation:* RO = radiation oncologist. (A color version of this figure is available at <https://doi.org/10.1016/j.ijrobp.2020.09.029>.)

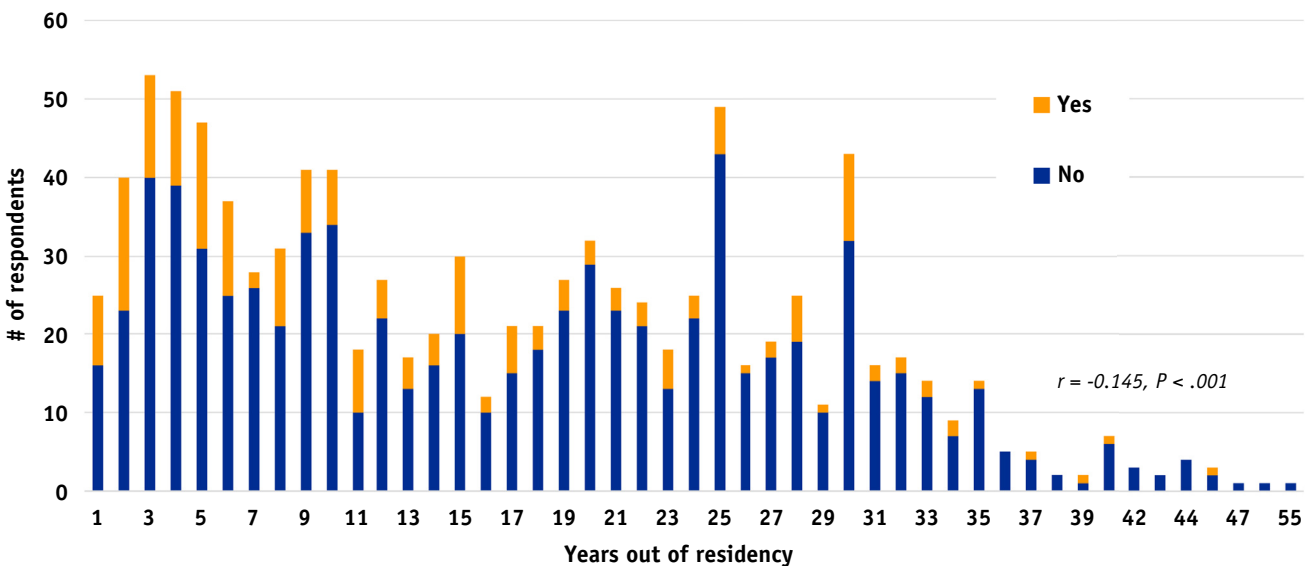


Fig. 2. Desire to expand scope of service by years out of residency. Orange = respondents interested in expanding scope of service (Yes). Blue = respondents not interested in expanding scope of service (No). (A color version of this figure is available at <https://doi.org/10.1016/j.ijrobp.2020.09.029>.)

Leadership and approach to care

When asked whether “ROs should be leaders in oncologic care,” the majority of respondents answered in the affirmative, with only 4% disagreeing. Stratification by employer showed no difference, but ROs <10 years out of

residency were more likely to agree (99.2%) compared with those ≥10 years out of residency (94.1%, *P* < .001). The 39 respondents who disagreed with the statement “ROs should be leaders in oncologic care” believed that (1) medical oncology was the leader (30.8%), (2) oncologic care should be a noncompetitive team approach in which each

subspecialty including RO serves as a leader but not *the* leader (28.2%), or (3) ROs did not have sufficient breath of training/knowledge (20.5%) or time (2.6%) to be leaders.

Respondents were asked about their ideal approach to patient care. The majority (82.5%) indicated their ideal was “to provide an independent opinion on radiation therapy and other treatment options (ideal = comprehensive opinion),” and 16.1% indicated it was “to provide an independent opinion on radiation therapy but not outside of it (ideal = RT-only opinion),” and 1.4% (14 respondents) thought that it was “to provide radiation therapy at the request of referring physicians (ideal = RT on request).” By employer type, 85.3% of academics selected “comprehensive opinion” as their ideal, similar to nonacademic hospital respondents (83.5%) but significantly more likely than private practitioners (78.4%, $P = .016$). Subspecialists were more likely to select “comprehensive opinion” than generalists (86.9% vs 78.3%, $P < .001$).

Respondents were additionally asked how their actual practice compared with their ideal approach. The actual practice *completely* matched the ideal approach in 18.2% of respondents (match group). For the other 81.8%, actual practice did not *always* match their ideal approach (mismatch group). Stratification by employer, practice location, or subspecialist versus generalists showed no difference.

The mismatch group ($n = 805$) reported that their actual practice was a mix of the various approaches: providing a “comprehensive opinion” 39.0% of the time on average, a “RT-only opinion” 37.0% of the time, and “RT on request” 24.0% of the time. The actual practice mix varied across respondents with different ideal approaches (Fig. 3). In essence, within this mismatch group, respondents most commonly practiced according to the approach they

previously identified as their ideal, but all subgroups provided radiation on request though at varying frequencies.

Reasons for the mismatch between actual practice and ideal approach included the following: concern that a potential disagreement with the referring physician about treatment would cause alienation and change in referral patterns (26.6%), concern that the referring physician is not receptive to an independent opinion (14.8%), insufficient time for a comprehensive discussion of options (9.7%), and practice’s philosophy differs from personal view of ideal approach (9.2%). Note 51% selected “referring physicians rely on me for a comprehensive review of treatment options,” an inconsistent response that likely reflects an inadvertent survey design flaw though unlikely to influence the validity of the other responses given the multiple choice/select all that apply nature of the question.

Discussion

Although it is clear that most surveyed respondents (>95%) believe that ROs should be leaders in oncologic care, it is less clear what leadership means within the US oncology landscape. Is it related more to intellectual expertise, clinical influence, or scope of practice? There was a near unanimous view that the ideal approach to patient care would be to provide an independent opinion on either all treatment options (83%) or radiation therapy (16%); practically no one (1%) regarded radiation delivery at the referrer’s request as the ideal. This sentiment would make Del Regato proud. It is thus sobering that only 1 in 5 respondents practiced in a manner that fully mirrored their ideal approach. For the remaining majority, not only did actual practice not always measure up to their ideal

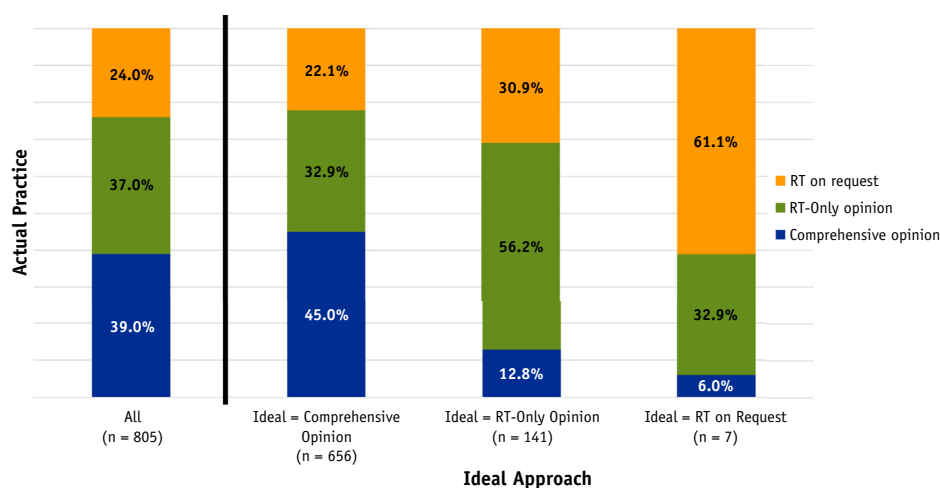


Fig. 3. Percent of respondents experiencing mismatch of their actual practice to their ideal approach. Respondents’ actual practice comprised of a mix of the 3 approaches, and the color-coded bars denote the percent time spent providing a comprehensive opinion (blue), a RT-only opinion (green), and RT on request (orange). Far left column represents the entire mismatch group ($n = 805$, 81.8% of the entire cohort) and the other 3 columns show variations across respondents with different ideal approaches. *Abbreviation:* RT = radiation therapy. (A color version of this figure is available at <https://doi.org/10.1016/j.ijrobp.2020.09.029>.)

approach, but one-quarter of their actual practice was characterized by the least favored scenario of providing radiation at the referring physician's request. Why would ROs feel obligated to service the request of referring physicians who presumably would not have nearly the same level of expertise in our specialty? What are the barriers to ROs expressing their real opinions?

Top reasons that emerged from the survey were concern of alienating the referring physician or offering an unwelcome opinion, reflecting the power dynamic in practice behavior. In this context, power is a function of who controls the patient flow (ie, referral chain) and also, in part, who first gains the patient's trust. In the US, a newly diagnosed cancer patient's first point of contact in the oncologic care path is frequently the surgeon or medical oncologist, but rarely the RO. Within this framework, radiation oncology is commonly regarded as a downstream specialty without much political influence.⁴ It is easy to imagine then why the RO may feel vulnerable to the referring physician's preferences and choose wholesale agreement with the referring physician (hopefully as long as the recommendation is not egregious) as the path of least resistance.

It is also useful to acknowledge historic cultural patterns of behavior that can undermine the RO's influence. As Oureilidis-DeVivo recently remarked, tumor boards aim to bring multidisciplinary specialists together to devise the best treatment plan for patients, but treatment decision-making is influenced by the social hierarchy.⁵ Historically, surgeons sit at the top of the hierarchy, followed by the medical oncologists; ROs and radiologists in contrast are "status-neutral or disadvantaged" in this social order.⁵ These cultural norms play out in interactions between specialties with surgeons speaking confidently and expecting their views to dominate, and others acquiesce even if they quietly disagree to avoid confrontation or only diffidently express a contrary opinion even when the alternative is evidence-based. The author added that these patterns of behavior, once established, are self-perpetuating and subtly taught to trainees of the respective fields as they observe the interactions among the more senior physicians. The phenomenon of the hidden curriculum⁶ is by definition hard to detect, and the prevalence of the highly polarized dynamics portrayed by Oureilidis-DeVivo is not well studied. To be sure, the field of medicine has made huge strides in building a culture of teamwork and collegiality,⁷ and no doubt many surgeons exemplify humility and collaboration and some ROs come across as arrogant and domineering. There is room for improvement, and broader awareness among all stakeholders of these undercurrents will help move the needle.

One strategy to improve these relationships is through respectful, candid dialogue. For ROs to be true leaders of oncologic care, effective communication on unbiased management recommendations is essential but by itself insufficient. ROs must also work with colleagues outside the specialty to promote a *culture* of meaningful

multidisciplinary teamwork. The goal is not to dominate but to encourage a milieu in which disciplines appreciate each other's value, collaborate with mutual respect and trust, and share the common goal of consistently upholding the patient's best interest. The ultimate objective is a partnership among medical, radiation, and surgical oncologists, each serving as a co-leader in cancer care. As Lee and Boissy suggested, advocating for open communication among colleagues for the benefit of patients can be transformative,⁸ and developing the interpersonal skills to promote these interactions takes training and practice. To support members on this front, ASTRO will present at the 2020 Annual Meeting a masterclass on leadership skills and emotionally intelligent communication.

Another way to enhance relationships is to offer upstream physicians value that they cannot get elsewhere. This includes offering expertise that enhances the referring physicians' practice directly (eg, advise them in ways that improves their care of the patient) or indirectly (eg, provide expertise such that collaboration creates a market differentiator, appeals to patients, and improves their care). Another route to adding value is to assume portions of potentially burdensome patient care that the referring physician may reluctantly provide out of obligation to serve an unmet need. An example could be to compile the survivorship care plan and review the plan with the patient and primary care physician, responsibilities that often fall on the medical oncologist. Taking on such aspects of care can help build a more balanced relationship.

An additional consideration is radiation oncology's time-honored emphasis on evidence-based practice and the currency of medical literature. Whether in a group forum such as tumor board or 1 on 1 with a referring colleague, the voice of a RO who demonstrates mastery of the peer-reviewed literature as the basis for a particular recommendation earns credibility and trust. Furthermore, sharing knowledge with (and simultaneously learning from) colleagues of other specialties encourages team-learning and blurs interdisciplinary boundaries to ensure the team does its collective best for the patient.⁹ With evidence over anecdotes exerting increasing influence on the practice of modern medicine, continued attention to literature-supported best practices will serve ROs well in not only patient care but also interdisciplinary interactions.

Beyond these foundational aspects of navigating inter-professional dynamics, a study of RO scope of practice is incomplete without an analysis of the services rendered, beyond the evaluation for and delivery of radiation therapy. That merely 1 in 5 respondents expressed interest in expanding the scope of service may be interpreted as a general satisfaction with the status quo. However, examination of the reasons behind the lack of interest suggests the situation may be more nuanced. Many respondents indicated a lack of interest in expanding services due to insufficient time or insufficient training, implying that time-saving resources and/or training may influence their perspective. Topping the list of desired service expansions

were prescribing privileges for a host of therapeutic and supportive agents, including medical marijuana, radiopharmaceuticals/theranostics, and anticancer medicines such as hormonal or targeted systemic therapies, as well as admitting patients to a RO inpatient service. Interestingly, these services represent emerging and evolving areas in which respondents admitted to lacking knowledge. Further, the stronger interest among early-career respondents to expand services may point to a generational difference in outlook and aspirations. This may also signal an eagerness for means to boost radiation oncology utilization among early-career physicians, who are more likely to find the job market difficult and have concerns regarding workforce oversupply relative to later-career physicians.¹⁰ This presents an actionable opportunity for radiation oncology training programs and professional societies, such as educational content development to bridge knowledge gaps. Building on the success of the radiopharmaceuticals class at the 2019 Annual Meeting, ASTRO will be offering a masterclass on radiopharmaceutical therapies at the 2020 Annual Meeting, as well as a new masterclass on medical marijuana prescribing.

There are other avenues to broadening services beyond those specifically involving radiation therapy delivery. For example, a RO might offer primary care physicians the assumption of the care of patients with suspicious pulmonary nodules. The RO could coordinate the evaluation (imaging, biopsies, etc) and provide care such as stereotactic ablative radiation therapy or refer to other specialists as appropriate. A similar paradigm could be envisioned for a patient with an abnormal PSA. Such care is easily within reach, if not already occurring, for many ROs. Once embedded in the provider referral network earlier in the care path, more completely, and *bidirectionally*, our specialty would evolve to more equal footing.

It should not be surprising then that within the multidisciplinary practice environment, the lines between different specialties would blur, attesting to the vision we hereby paint, namely a radiation oncologist true to the name—a health care practitioner who cares for the cancer patient as a whole person in addition to providing medical and technical expertise in radiation therapy. As to what to call such a professional, Del Regato's comment that "*no one is as deserving of the title of oncologist as you are ... [original in italics]*"² comes to mind, but certainly some of this is a matter of semantics.¹¹ The symbolic and poetic parallel of radiation oncologist with medical, surgical, and gynecologic oncologists and so on is also an important factor.

As Vapiwala et al articulated, expanding radiation oncology's domain into innovative and nontraditional paths "should be a key part of the strategy to maintain our relevance and proactively address transformational changes in health care delivery models, medical science, and information technology."¹² This may be particularly relevant as ROs face new value-based payment models¹³ and growing concerns regarding a future workforce oversupply¹⁴, scope

of practice can be one demand-side variable in a balanced supply-demand equation. However, even if knowledge gaps are addressed, a key barrier to expanding services is the political interplay, which brings us full circle. Realistically, interprofessional dynamics will always be part of the backdrop in the practice of medicine, highlighting the importance of an awareness of this facet of clinical practice. Advocacy for interdisciplinary collaboration will enhance control over our own destiny and, most importantly, the care that we provide to our patients.

Our study has limitations. The survey queried ASTRO US RO membership, which is an imperfect surrogate for the US RO workforce as a whole, though ASTRO membership includes 86% of US board-certified ROs. The 26% response rate was slightly lower than the 29% to 31% in the 2012¹⁵ and 2017¹⁴ ASTRO Workforce Studies but rather typical considering the 18% to 45% range reported for web-based surveys of a similar nature.^{10,16-19} The high proportion of respondents self-identifying as medical clinical/directors may be a manifestation of selection biases. The survey was limited to US ROs and did not include ROs from other countries, physicians from other disciplines, residents, advanced practice providers, nurses, or patients, whose perspectives would enhance our understanding of the subject matter. The closed-ended question structure facilitates the response process, response consistency, and data analysis, but carries disadvantages. Predesigned answers may impart bias by proposing ideas to the respondent and may not capture the respondent's exact opinion. Respondents who do not understand the question or lack an opinion may randomly select an answer anyway, thereby confounding the data. In addition, the coronavirus disease 2019 pandemic has drastically changed the world, radiation oncology included, and conclusions drawn from a pre-coronavirus survey must be interpreted with caution. Furthermore, the views expressed are solely those of the authors and do not represent ASTRO's official position.

Nevertheless, these results provide insight regarding US ROs' scope of practice and attitudes on the ideal role of the RO. For most ROs, to provide an independent opinion on treatment options represented the ideal approach to care, but barriers such as concern about alienating referring physicians prevented many from fully adhering to their ideal in practice. Actual practice commonly comprised a mixed approach, including the least favored scenario of delivering radiation at the referring physician's request one-quarter of the time, highlighting the influence of interspecialty politics on practice behavior. Advocacy for open communication and meaningful interdisciplinary collaboration presents an actionable solution toward a more balanced relationship with other specialties as ROs strive to better fulfill the vision of being leaders in oncologic care and being our best for our patients. The study also identified interest, particularly among early-career ROs, in expanding scope of service into radiopharmaceuticals administration, marijuana and anticancer medications prescribing, and RO-specific inpatient service. These

nontraditional domains offer opportunities to address unmet needs in the cancer patient's journey and elevate radiation oncology within the increasingly value-based US health care system.

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