

Guideline Familiarity Predicts Variation in Self-Reported Use of Routine Surveillance PET/CT by Physicians Who Treat Head and Neck Cancer

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Abstract

Background: Use of routine surveillance testing beyond guideline recommended levels is common in many oncologic disciplines, including head and neck cancer. The impact of guideline familiarity and other physician characteristics on surveillance imaging use are not well understood. **Methods:** A cross-sectional national survey was performed of physicians responsible for surveillance of patients with head and neck squamous cell carcinoma (HNSCC). The primary outcome was self-reported use of routine surveillance PET/CT in asymptomatic patients. A secondary outcome was familiarity with guideline recommendations. Using multivariable regression, the impact of guideline familiarity and other physician characteristics on PET/CT use was examined. **Results:** Of the 502 responders, 79% endorsed ever using PET/CT scans for routine surveillance imaging, and 39% were high imaging users (used PET/CT scans on more than half of their asymptomatic patients); 76% were familiar with the NCCN Clinical Practice Guidelines in Oncology for Head and Neck Cancers recommending against routine surveillance PET/CT scans. Although guideline familiarity was associated with being a low imaging user or a never-user, among those who were familiar with guidelines, 31% were nonetheless high imaging users and 73% endorsed ever using PET/CT scans. In multivariable analysis controlling for physician characteristics, guideline familiarity was the strongest predictor of PET/CT use. **Conclusions:** Familiarity with the NCCN Guidelines predicts self-reported routine surveillance PET/CT use among physicians who treat patients with HNSCC. However, given the observed variation and high levels of imaging even among physicians who are familiar with the guidelines, further research should examine the reasons physicians choose to use surveillance PET/CT scans. (*J Natl Compr Canc Netw* 2015;13:69–77)

Background

Routine surveillance imaging for asymptomatic patients who have completed initial treatment and had 1 negative baseline scan is not recommended in the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines) for Head and Neck Cancers, which recommend only “further reimaging as indicated based on signs/symptoms.”¹ Routine surveillance imaging for

asymptomatic patients in other cancer types has been identified as a target for reduction.^{2–5} Recently, PET/CT for surveillance has been specifically identified by ASCO in the ABIM (American Board of Internal Medicine) Choosing Wisely Campaign as a test that should be avoided by most patients with cancer because of a lack of data about prolonged life or increased well-being, and because false-positives may lead to unnecessary

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procedures, treatment, and radiation exposure.⁶ Despite these recommendations, use of surveillance imaging is common in oncology,⁷⁻¹¹ including in head and neck cancers.¹² However, physician-level factors related to the decision to use surveillance imaging are not well understood.

Several studies have found that physician demographic and practice characteristics correlate with surveillance testing use in breast and colon cancers.^{7,10,11} Studies outside of oncology have also suggested that guideline familiarity may influence use of medical services.^{13,14} Regarding cancer surveillance testing, physicians' confidence in their knowledge about the appropriateness of surveillance testing was found to correlate with levels of reported use.¹¹ However, no identified studies have queried physicians about guideline familiarity specifically and correlated this knowledge with surveillance imaging use.

The goal of this study, a national survey of surgeons and radiation oncologists who treat head and neck squamous cell carcinoma (HNSCC), was to understand the influence of guideline familiarity and other physician characteristics on variation in use of routine PET/CT surveillance imaging. Notably, the goal was not to accurately describe levels of imaging use among surgeons, radiation oncologists, or physician subgroups, because this was presumed to be high, but rather to examine the reasons for variation in reported practice. The hypothesis was that guideline familiarity has a significant effect on surveillance imaging use.

Materials and Methods

As part of a larger study, a survey was administered in 2013 to a cross-sectional national sample of physicians who treat HNSCC. Because surgeons and radiation oncologists share the burden of surveillance care for patients with HNSCC, the study population was derived from the membership lists of 2 medical societies. American Head and Neck Society (AHNS) members, who are mostly surgeons, were queried if they resided in the United States or Canada. Members of the American Society for Radiation Oncology (ASTRO) were queried if they resided in the United States and Canada and if they had noted an interest in head and neck cancer on their membership profile.

The survey instrument included physician demographic and practice characteristics items, report-

ed use of surveillance PET/CT scans after a clinical scenario, and familiarity with guideline recommendations for surveillance imaging. Survey items were developed from a literature review, clinician interviews, and input from experts in survey methodology. Iterative pilot testing was performed to refine items developed for this instrument and to determine optimal ordering.

Study data were collected and managed using REDCap (research electronic data capture) tools hosted by the University of Pennsylvania School of Medicine.¹⁵ AHNS members received an e-mail invitation directing them to an electronic version of the survey. ASTRO members were mailed paper invitations because of society rules against electronic contact. Nonresponders received a second invitation approximately 1 month after the first. Participants were incentivized with a conditional lottery for an iPad mini.

The primary outcome variable was derived from self-reported use of surveillance PET/CT scans following a single clinical scenario. Physicians were asked to consider their patients with the following criteria: advanced stage (stage III or IV) HNSCC of any subsite, treated with any modality, previously had a negative 12-week baseline posttreatment PET/CT scan, were within 2 years of treatment, and were asymptomatic without concern for recurrence. A range of time up to 2 years was specified because physicians may choose to perform additional imaging at various time points but may be less likely to perform imaging when patients are farther from treatment. It should be noted that the scenario specifically distinguished between the first posttreatment scan, usually performed at 12 weeks, and subsequent surveillance imaging. Physicians were then asked, "In what percentage of your patients do you order PET/CT scans?" Choices were discrete ranges: 0%; 1% to 25%; 26% to 50%; 51% to 70%; 71% to 90%; and 91% to 100%.

Physicians who use PET/CT scans more than 50% of the time were classified as "high imaging users," and those who use PET/CT scans 50% or less of the time were classified as "low imaging users." A cutoff of 50% was used to allow comparison between relatively even-sized groups. As a sensitivity analysis to examine the outcome of PET/CT use, physicians were classified as never-users if they answered 0%, and were considered ever-users otherwise.

A secondary outcome measure using the same clinical scenario was familiarity with NCCN Guide-

Predictors of Surveillance PET/CT Use

line recommendations. No guidelines specific to head and neck cancer that include recommendations for surveillance imaging have been published by other organizations in the United States. Physicians were asked, “Routine surveillance imaging is recommended in the current NCCN Guidelines using the following modalities [check as many as applicable]:” Answer choices were: PET/CT; MRI; CT; None of the above; Not sure. Because PET/CT use was the modality of the primary outcome, physicians were classified as either unfamiliar with NCCN Guidelines recommendations regarding PET/CT scan if they checked “PET/CT scan,” or familiar if they did not.

Chi-square statistic, Fisher exact test, and *t* test were performed to describe variation in imaging use according to physician characteristics and guideline familiarity, and the secondary outcome of guideline familiarity according to physician characteristics. Multivariable logistic regression was performed to examine which factors, including physician characteristics and guideline familiarity, were most predictive of high imaging use. All available physician characteristics except age, which is collinear with years in practice, were used in the model. *P* values of .05 or less were considered significant. Analyses were conducted using Stata Statistical Software (Release 12.1; Stata Inc., College Station, TX). This study was approved by the University of Pennsylvania Institutional Review Board.

Results

Invitations were sent to 2125 physicians, including 767 AHNS and 1358 ASTRO members. A total of 520 physicians responded (192 from AHNS and 328 from ASTRO) for a response rate of 24.5%. A total of 117 total invitations were returned to sender or had e-mail delivery failure, for a cooperation rate of 25.9%. The mean age of all AHNS members to whom the survey was sent, including nonresponders, was 52.9 years, whereas the mean age of all ASTRO members sent the survey was 51.0 years. Responses were excluded if they were nonphysicians, physicians other than radiation oncologists and surgeons, still in training, or reported not seeing any patients with head and neck cancer in their practice (total excluded, *n*=18). Table 1 describes demographic and practice characteristics of the 502 remaining physi-

cians. Some of these physicians had incomplete surveys and therefore could not be subsequently analyzed for the outcomes of PET/CT use and guideline knowledge.

Figure 1 describes variation among 484 physicians who responded to the question about PET/CT use. Most responders (79%) were ever-users (ie, endorsed using PET/CT scans for surveillance at least some of the time), and 39% of physicians answered that they used PET/CT scans more than 50% of the time. Several demographic features were associated with the level of imaging use (Table 2). High imaging users had been in practice for more years, were more likely to be in private practice and less likely to be in academic settings, and saw a smaller volume of patients with HNSCC in their practice than low imaging users. On sensitivity analysis, no demographic differences were seen between ever-users and never-users.

Table 1 Demographic Characteristics of Survey Responders

	Total	Radiation Oncologists	Surgeons
Responders	502	326 (65%)	176 (35%)
Completed fellowship			
Yes	248 (51%)	124 (38%)	124 (76%)
No	239 (49%)	199 (62%)	40 (24%)
Gender			
Male	401 (82%)	260 (80%)	141 (87%)
Female	86 (18%)	64 (20%)	22 (13%)
Age, mean (SD), y	49.8 (11)	50.2 (12)	49.0 (10)
Years in practice			
1–5 y	103 (21%)	62 (19%)	41 (26%)
6–15 y	133 (28%)	87 (27%)	46 (30%)
16–25 y	125 (26%)	86 (27%)	39 (25%)
≥26 y	116 (24%)	87 (27%)	29 (19%)
Practice setting			
Academic tertiary	192 (40%)	78 (24%)	114 (70%)
Academic affiliate	84 (17%)	58 (18%)	26 (16%)
Community hospital	105 (22%)	95 (30%)	10 (6%)
Private practice	103 (21%)	91 (28%)	12 (7%)
Volume of head and neck cancer seen in practice			
1%–25%	246 (50%)	230 (80%)	16 (10%)
26%–50%	69 (14%)	50 (15%)	19 (12%)
>50%	173 (35%)	44 (14%)	129 (79%)

Numbers do not always sum to total for column because of occasional missing data. Percentages may not sum to 100% because of rounding.

Roman et al

Table 3 describes NCCN Guideline familiarity according to physician demographic and practice characteristics among the 455 physicians who responded to the guideline familiarity question. Of these, 76% were familiar with NCCN Guidelines. Although only 24% of responders believed that NCCN Guidelines recommend surveillance PET/CT scans, 41% of responders overall believed that surveillance imaging with some modality was recommended (PET/CT, MRI, or CT; data not shown). Physicians who believed that NCCN Guidelines recommended PET/CT surveillance had been in practice for more years than those who were correct ($P=.02$). There were no differences in guideline familiarity according to physician medical specialty, fellowship training, gender, practice setting, or practice volume characteristics.

Table 4 describes variation in PET/CT imaging use according to familiarity with the guideline among the 454 physicians who responded to both of these questions. Among physicians unfamiliar with NCCN Guidelines, 66% were high imaging users and 98% were ever-users. Among physicians familiar with the NCCN Guidelines, 31% were nonetheless high imaging users and 73% were nonetheless ever-users ($P<.0001$, for both).

Table 5 describes the results of multivariable logistic regression to determine predictors of high imaging use and ever-use. Guideline familiarity was the only significant predictor (high vs low odds ratio [OR], 4.47; CI, 2.72–7.34; $P<.0001$; ever vs never

OR, 39.24; CI, 5.34–288.53; $P<.0001$). Physician characteristics that correlated with high imaging use on bivariate analysis, including years in practice, practice setting, and case volume, were not predictive on multivariable analysis.

Discussion

This survey describes variation in the use of routine surveillance PET/CT scans for head and neck cancer survivors according to physician demographics and familiarity with NCCN Guidelines. Most responders endorsed using routine surveillance PET/CT scans for asymptomatic patients after an initial negative 12-week posttreatment scan, and many reported using PET/CT for most of their patients. Although most physicians surveyed were familiar with guidelines recommending against routine surveillance imaging in asymptomatic patients, reported rates of high use even among this group suggest that imaging use was not deterred by this consensus recommendation. Conversely, physicians unfamiliar with NCCN Guidelines were significantly more likely to report frequent PET/CT use in this setting.

The fact that familiarity with NCCN Guidelines correlates with use of PET/CT may be expected but, to the authors' knowledge, the relationship and its strength have not been previously demonstrated in the setting of cancer surveillance. The findings have important implications in all oncologic disciplines in which surveillance imaging is used beyond levels recommended in guidelines, and may be viewed from at least 2 perspectives.

On the one hand, those who write guidelines may view the findings as supportive of their efforts, namely that physicians' practice may be influenced by familiarity with guidelines.¹⁶ Most guideline recommendations and quality measures currently address what should be done.¹⁷ Guideline recommendations against certain practices may be of particular interest in the future. This study concerns the latter and may confirm the role of guideline development in addressing overuse. In this context, increased education and dissemination efforts could focus on physicians who are unfamiliar with the NCCN Guidelines. The finding of demographic differences in surveillance practice patterns in this study, not dissimilar to findings in the settings of cancer screening and surveillance,^{7,11,18} suggests areas of emphasis for these efforts.

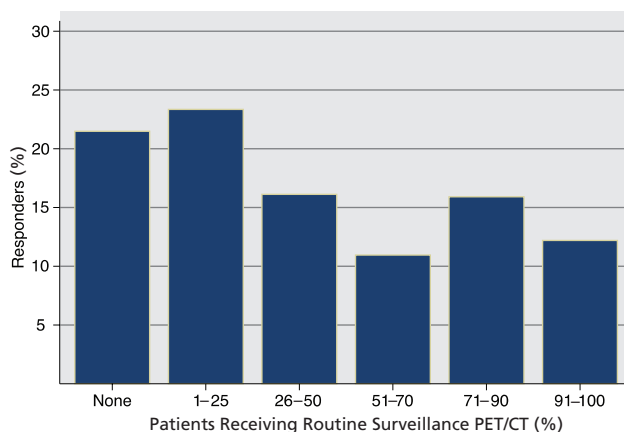


Figure 1 Self-reported use of PET/CT for routine surveillance imaging in asymptomatic patients. After a single clinical scenario, physicians were asked, "What percentage of your patients with head and neck cancer received routine surveillance PET/CT scans?" Those who answered more than "none" were ever-users. Those who answered $\geq 51\%$ were high-imaging users. There were 484 responses to this question.

Predictors of Surveillance PET/CT Use

Table 2 PET/CT Imaging Use According to Demographic and Practice Characteristics

	Total (Column %)	Low vs High Users			Never- vs Ever-Users		
		Low Users ^a (Row %)	High Users ^b (Row %)	P Value	Never-Users ^c (Row %)	Ever-Users ^d (Row %)	P Value
Responders	484	295 (61%)	189 (39%)		104 (21%)	380 (79%)	
Medical specialty				.139			.427
Surgery ^e	160 (33%)	105 (63%)	55 (34%)		31 (19%)	129 (81%)	
Radiation oncology	324 (67%)	190 (59%)	134 (41%)		73 (23%)	251 (77%)	
Completed surgical or radiation oncology fellowship				.073			.248
Yes	242 (50%)	157 (64%)	85 (35%)		47 (19%)	195 (81%)	
No	239 (50%)	136 (57%)	103 (43%)		56 (23%)	183 (77%)	
Sex				.472			.736
Male	396 (83%)	243 (61%)	153 (39%)		83 (21%)	313 (79%)	
Female	84 (18%)	48 (57%)	36 (43%)		19 (23%)	65 (77%)	
Years in practice				.017			.666
1–5 y	103 (22%)	73 (71%)	30 (29%)		25 (24%)	78 (76%)	
6–15 y	131 (28%)	76 (58%)	55 (42%)		24 (18%)	107 (82%)	
16–25 y	123 (26%)	78 (63%)	45 (37%)		26 (21%)	97 (79%)	
≥26 y	113 (24%)	57 (50%)	56 (50%)		21 (19%)	92 (81%)	
Practice setting				.001			.073
Academic tertiary	188 (39%)	126 (67%)	62 (33%)		41 (22%)	147 (78%)	
Academic affiliate	82 (17%)	58 (71%)	24 (29%)		23 (28%)	59 (72%)	
Community hospital	105 (22%)	59 (56%)	46 (44%)		23 (22%)	82 (78%)	
Private practice	103 (22%)	47 (46%)	56 (54%)		13 (13%)	90 (87%)	
Volume of head and neck cancer seen in practice				.013			.963
1%–25%	246 (51%)	136 (55%)	110 (45%)		54 (22%)	192 (78%)	
26%–50%	69 (14%)	42 (61%)	27 (39%)		15 (22%)	54 (78%)	
>50% of practice	167 (35%)	117 (70%)	51 (30%)		35 (21%)	133 (79%)	

Numbers do not always sum to total for column because of occasional missing data.

^a“Low users” order surveillance PET/CT scans ≤50% of the time for asymptomatic patients.

^b“High users” order surveillance PET/CT scans >50% of the time for asymptomatic patients.

^c“Never-users” never order surveillance PET/CT scans for asymptomatic patients.

^d“Ever-users” order surveillance PET/CT scans on at least some of their asymptomatic patients.

^eSurgery includes ear, nose, and throat surgeons, general surgeons, and oral and maxillofacial surgeons.

However, the findings may be viewed from the perspective of uncertainty about the true benefit of routine surveillance imaging and concern about the validity of the guideline recommendation. This view is supported by the fact that many physicians familiar with the guidelines are nonetheless high imaging users.

This perspective necessitates a brief review of the literature regarding the benefits of routine surveillance PET/CT scans for head and neck cancer. The authors again distinguish between routine surveillance scans performed well after treatment and the first posttreatment scan, usually performed at 12 weeks, which has been shown to impact decision-making, predict prognosis, and be a cost-effective strategy that can decrease planned neck dissections.^{19–23} Subsequent PET or PET/CT scans in most studies have moderate specificity and positive pre-

dictive value, very good sensitivity and negative predictive value, and a yield of recurrent disease in asymptomatic patients between 5% and 36%, and may lead to changes in management in approximately 1 of 3 cases.^{21,24–33} These statistics may be beneficial to the patient, especially the high negative predictive value.^{21,33} In addition, PET positivity may be an important prognosticator of survival.²¹

However, only 2 identified studies examined clinical outcomes related to the provision of PET/CT scans. These studies found no difference in survival in patients with metastases detected by PET/CT compared with other imaging modalities,³⁴ and no difference in survival in patients whose recurrences were detected by PET/CT versus clinical examination.³⁵ These studies are limited by their retrospective nature, but because of the overall poor outcomes even for patients with surgically resectable recurrent

Roman et al

Table 3 Guideline Knowledge According to Demographic and Practice Characteristics

	Total (Column %)	PET/CT Not Recommended (Row %)	PET/CT Recommended (Row %)	P Value
Responders	455	344 (76%)	111 (24%)	
Medical specialty				.119
Surgery ^a	141 (31%)	100 (71%)	41 (29%)	
Radiation oncologist	314 (69%)	244 (78%)	70 (22%)	
Completed surgical or radiation oncology fellowship				.229
Yes	226 (50%)	165 (73%)	61 (27%)	
No	226 (50%)	176 (78%)	50 (22%)	
Sex				.328
Male	376 (83%)	282 (75%)	94 (25%)	
Female	76 (17%)	61 (80%)	15 (20%)	
Years in practice				.002
1–5 y	97 (22%)	79 (81%)	18 (19%)	
6–15 y	126 (28%)	95 (75%)	31 (25%)	
16–25 y	116 (28%)	96 (83%)	20 (17%)	
≥26 y	107 (24%)	67 (63%)	40 (37%)	
Practice setting				.461
Academic tertiary	175 (39%)	136 (78%)	39 (22%)	
Academic affiliate	76 (17%)	60 (79%)	16 (21%)	
Community hospital	101 (22%)	74 (73%)	27 (27%)	
Private practice	98 (22%)	69 (70%)	29 (30%)	
Volume of head and neck cancer seen in practice				.271
1%–25%	235 (52%)	171 (73%)	64 (37%)	
26%–50%	65 (14%)	50 (77%)	15 (23%)	
>50%	154 (34%)	123 (80%)	31 (20%)	

Numbers do not always sum to total for column because of occasional missing data.

^aSurgery includes ear, nose, and throat surgeons, general surgeons, and oral and maxillofacial surgeons.

HNSCC^{36–38} and the low yield of these recurrences detected in asymptomatic patients,^{21,26,28,29,31,32} whether a survival advantage for occasional earlier detection could be found is unclear. Notably, although not reviewed in depth here, similar doubts exist about the impact of surveillance imaging on survival in many other oncologic disciplines.^{2,3,5} Even in colorectal and breast cancer, in which some evidence suggests a benefit,^{39–43} other data are less certain,^{44–50} leading some authors to argue that a rational scientific approach is to assume that intensifying follow-up does not improve survival.⁴

Nonetheless, the level of variation in use suggests that other reasons exist for ordering surveillance PET/CT scans in asymptomatic patients. For example, physicians may not be aware of the lack of supportive survival data, or may remain optimistic about improved outcomes based on their personal

experience. This belief about expected outcomes has been cited as a reason that physicians may not follow guidelines¹³ or may have a difficult time changing health care practices that are already in use.⁵¹ Other attitudes, beliefs, and pressures may play a role in the decision to use surveillance PET/CT scans, such as patient expectations or beliefs about the importance of reassurance provided by negative scans.^{52,53}

This study has several important limitations. First, the response rate inhibits the generalizability of the results to the entire population of clinicians who treat HNSCC. However, a response rate of 25.9% is within the range of responses to other surveys of physicians in this field (2.8%–46.0%),^{52–55} and slightly higher than for one previous survey of both head and neck surgeons and radiation oncologists (22.0%).⁵⁶ In addition, limited data were available about nonresponders, but the responders seem well matched with the overall population of AHNS and ASTRO members in terms of age. Finally, because of the levels of both imaging and unfamiliarity with the NCCN Guidelines, the authors contend that somewhat different levels would not detract from the significance of their interaction, which was the key finding.

A second and related limitation is that the survey relies on self-reported use of imaging, which is subject to recall error and social desirability bias. Recall error might be magnified if responders conflated scans performed for asymptomatic patients without any concern for recurrence with scans performed for patients in whom there was some concern for recurrence, even if they were asymptomatic. Nonetheless, even if such recall errors were occasionally made, the authors again contend that this would not detract from the noted interaction between guideline familiarity and use. Self-reported response to clinical vignettes has been shown to correlate to actual use in other scenarios,^{57,58} and although used in cancer surveillance,¹¹ it has not yet been validated. However, regardless of errors in the reported amount of imaging in this study, the true level would still likely be high compared with the amount recommended by guidelines.

A third limitation is that this survey pooled an uneven sample of surgeons and radiation oncologists. However, pooling the 2 specialty groups is justified to support the aim of the study—describe the interaction between guideline familiarity, physician demographics, and imaging use among all physicians responsible for the follow-up of patients with

Predictors of Surveillance PET/CT Use

	Total	Low Users ^a (Row %)	High Users ^b (Row %)	P Value	Never-Users ^c (Row %)	Ever-Users ^d (Row %)	P Value
Believe NCCN recommends PET/CT surveillance imaging	454	276 (61%)	178 (39%)		96 (21%)	358 (79%)	
Yes (incorrect)	111 (24%)	38 (34%)	73 (66%)	<.0001	2 (2%)	109 (98%)	<.0001
No (correct)	343 (76%)	238 (69%)	105 (31%)		94 (27%)	249 (73%)	

Numbers do not always sum to total for column because of occasional missing data.

^a"Low users" order PET/CT scans ≤50% of the time for asymptomatic patients.

^b"High users" order surveillance PET/CT scans >50% of the time for asymptomatic patients.

^c"Never-users" never order surveillance PET/CT scans for asymptomatic patients.

^d"Ever-users" order surveillance PET/CT scans on at least some of their asymptomatic patients.

HNSCC—especially because no physician demographic characteristics except age correlated with guideline familiarity. Moreover, multivariable regression accounted for these demographic differences and still found guideline familiarity to be the strongest predictor of imaging use.

Conclusions

This study shows that although familiarity with the NCCN Guidelines is associated with lower imag-

ing use, variation in use persists despite this familiarity. Further research on clinical outcomes such as survival is certainly warranted to understand the impact of routine surveillance imaging in head and neck cancer. However, randomized controlled trials for diagnostic tests have significant obstacles,⁵⁹ making the question about survival difficult to answer concretely. In the absence of these data, further research should also explore the attitudes and beliefs that drive physician decision-making in this setting.

	High Imaging Users ^a		Ever-Users ^b	
	Odds Ratio (95% CI)	P Value	Odds Ratio (95% CI)	P Value
Guideline Familiarity				
Believe NCCN recommends PET/CT surveillance imaging	4.47 (2.72–7.34)	<.0001	39.24 (5.34–288.53)	<.0001
Physician Characteristics				
Surgeon (vs radiation oncologist)	0.91 (0.48–1.72)	.766	0.77 (0.34–1.72)	.521
Fellowship trained	0.77 (0.49–1.21)	.258	1.14 (0.65–2.01)	.649
Female	1.63 (0.94–2.83)	.083	1.10 (0.56–2.15)	.777
Years in practice				
1–5 y	1 [reference]		1 [reference]	
6–15 y	1.27 (0.69–2.31)	.445	1.18 (0.59–2.38)	.639
16–25 y	1.13 (0.61–2.11)	.690	1.19 (0.59–2.40)	.623
≥26 y	1.81 (0.94–3.50)	.074	1.21 (0.56–2.63)	.630
Practice setting				
Academic tertiary	1 [reference]		1 [reference]	
Academic affiliate	0.62 (0.31–1.24)	.181	0.73 (0.36–1.49)	.385
Community hospital	1.26 (0.64–2.47)	.501	1.40 (0.64–3.06)	.401
Private practice	1.83 (0.93–3.59)	.081	2.35 (1.00–5.52)	.051
Volume of head and neck cancer seen in practice				
1%–25%	1 [reference]		1 [reference]	
26%–50%	1.17 (0.61–2.23)	.636	1.81 (0.80–4.14)	.157
>50%	1.08 (0.52–2.25)	.841	2.11 (0.88–5.10)	.876

^a"High imaging users" are those who order surveillance PET/CT scans >50% of the time on their asymptomatic patients

^b"Ever-users" order surveillance PET/CT scans on at least some of their asymptomatic patients.

Roman et al

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Predictors of Surveillance PET/CT Use

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