Accuracy of Marketing Claims by Providers of Stereotactic Radiation Therapy

By Amol K. Narang, MD, Edwin Lam, Martin A. Makary, MD, MPH, Theodore L. DeWeese, MD, Timothy M. Pawlik, MD, MPH, Peter J. Pronovost, MD, PhD, and Joseph M. Herman, MD, MSc

Johns Hopkins University School of Medicine and Johns Hopkins Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD

Abstract

Purpose: Direct-to-consumer advertising by industry has been criticized for encouraging overuse of unproven therapies, but advertising by health care providers has not been as carefully scrutinized. Stereotactic radiation therapy is an emerging technology that has sparked controversy regarding the marketing campaigns of some manufacturers. Given that this technology is also being heavily advertised on the Web sites of health care providers, the accuracy of providers' marketing claims should be rigorously evaluated.

Methods: We reviewed the Web sites of all US hospitals and private practices that provide stereotactic radiation using two leading brands of stereotactic radiosurgery technology. Centers were identified by using data from the manufacturers. Centers without Web sites were excluded. The final study population consisted of 212 centers with online advertisements for stereotactic radiation. Web sites were evaluated for advertisements

that were inconsistent with advertising guidelines provided by the American Medical Association.

Results: Most centers (76%) had individual pages dedicated to the marketing of their brand of stereotactic technology that frequently contained manufacturer-authored images (50%) or text (55%). Advertising for the treatment of tumors that have not been endorsed by professional societies was present on 66% of Web sites. Centers commonly claimed improved survival (22%), disease control (20%), quality of life (17%), and toxicity (43%) with stereotactic radiation. Although 40% of Web sites championed the center's regional expertise in delivering stereotactic treatments, only 15% of Web sites provided data to support their claims.

Conclusion: Provider advertisements for stereotactic radiation were prominent and aggressive. Further investigation of provider advertising, its effects on quality of care, and potential oversight mechanisms is needed.

Introduction

Over the past decade, widespread adoption of the Internet has drastically changed the manner in which health information is obtained, with patients increasingly turning to Web sites as a trusted source of medical information.¹⁻³ A 2010 survey examining Internet use revealed that 80% of Internet users, which equates to 59% of American adults, gather their health information online.⁴ Although greater access to health information may lead to a more engaged patient population, concerns abound regarding the prevalence of misinformation on the Internet, particularly in the form of advertising.⁵⁻⁷ Furthermore, although direct-to-consumer advertising (DTCA) by pharmaceutical and medical device companies has long been strictly regulated by the US Food and Drug Administration (FDA), similar practices by health care providers have only recently been scrutinized.⁸ In 2009, the *New York Times* drew attention to hospital advertising with an article that exposed the often emotional and anecdotal nature of these ads.⁹ The article pointed out that the nonprofit status of many hospitals excludes them from the same FDA oversight as for-profit companies.

New technologies are particularly susceptible to controversial marketing campaigns, as it takes time to fully evaluate safety and efficacy while companies are eager to see returns on their investment. In radiation oncology, novel stereotactic radiosurgery (SRS) platforms have sparked considerable enthusiasm for

their ability to deliver large doses of radiation to precisely defined targets. Although SRS was first developed to treat intracranial lesions, advancements in target localization through continuous image guidance and increased robotic mobility have spurred interest in the application of stereotactic treatment to extracranial sites, a procedure known as stereotactic body radiation therapy (SBRT). Indeed, the use of SRS and SBRT has surged, with one manufacturer reporting worldwide growth rates for intracranial, lung, and prostate tumors of 42%, 80%, and 113% respectively over the past five years.¹⁰ Yet, whereas SRS has been well studied for intracranial lesions,¹¹⁻¹⁶ many clinicians still consider extracranial SBRT to be experimental in the absence of more robust, long-term data.¹⁷⁻²² As illustrated in Table 1, the most recent Clinical Practice Guidelines of the National Comprehensive Cancer Network (NCCN) designate inoperable lung and liver tumors as the only two approved first-line indications for SBRT.²³ In addition, a recent position statement on the use of SBRT for low-to-intermediate risk prostate cancer by the American Society for Radiation Oncologists concluded that "there is not sufficient or mature data at this time to demonstrate equivalency to existing standard treatment modalities."²⁴ In light of the uncertain role of SBRT, advertisements by manufacturers promoting the use of SBRT across multiple body sites have been controversial.²⁵

Table 1. National Comprehensive Cancer Network indications for SRS/SBRT

Cancer Type	Indication
Brain	Brain metastases Limited metastatic disease (1-3 metastases) in patients with either limited systemic disease or for whom reasonable systemic treatment option exists. For resectable lesions, options include surgery or SRS. SRS may be used for a limited number of small (< 2 cm), deep, nonsymptomatic lesions. Surgery may be more appropriate for larger, symptomatic lesions. For unresectable disease, WBRT and/or SRS can be used. Recurrent limited metastatic disease is additional indication. Primary malignant tumors Small WHO grade 1 meningiomas and recurrent adult ependymoma, medulloblastoma, supratentorial PNET
Lung	Inoperable stage I non-small-cell lung carcinoma
Hepatobiliary	For patients with unresectable/inoperable disease consisting of 1-3 tumors with cumulative diameter < 6 cm or larger lesions if volume of uninvolved liver is > 800 cm ³
Spine	Recurrent spinal metastases that have undergone prior surgery and/or conventional radiotherapy
Pancreas	May be considered for LAPC as part of a clinical trial
Colon/rectal	May be considered for limited liver/lung metastases in context of clinical trial
Head and neck	No mention of SRS/SBRT
Prostate	No mention of SRS/SBRT
Cervical/ovarian/uterine	No mention of SRS/SBRT
Kidney	No mention of SRS/SBRT
Sarcoma	No mention of SRS/SBRT

Abbreviations: LAPC, locally advanced pancreatic cancer; PNET, primitive neuroectodermal tumor; SBRT, stereotactic body radiation therapy; SRS, stereotactic radiosurgery; WBRT, whole brain radiation therapy.

Notably absent from this discussion has been the role that hospitals and/or individual providers might play in propagating such inaccuracies through their own marketing campaigns. We therefore sought to systematically examine the online advertising for stereotactic radiation by providers to assess its educational benefit and explore the prevalence of potentially misleading information. Given the absence of formal regulation for determining the bounds of acceptable marketing, we evaluated the Web site advertising of SRS/SBRT by using the American Medical Association (AMA) Code of Ethics, which includes an Opinion on Advertising and Publicity (Appendix, online only).²⁶ These guidelines provide a framework for determining whether online provider advertising for stereotactic radiation is being conducted in a manner consistent with our profession's ethical standards.

Methods

Study Population

We identified two leading manufacturers of stereotactic radiosurgery technology that produce machines primarily designed

to administer SRS/SBRT treatments and that have been the subject of criticism for aggressive advertising campaigns. Using the manufacturer Web sites, we identified all academic hospitals, community hospitals, and private practices in the United States that provide either of these two brands of stereotactic technology, counting organizations that had multiple locations only once (N = 215). We excluded two centers that had recently purchased stereotactic equipment and had yet to include advertisements on their Web sites. We also excluded the Web site of a large multicenter organization that lacked advertising because only one of its locations had invested in a stereotactic radiosurgery system. Our final study population consisted of 212 centers.

Data Collection and Study End Points

All pages of each center's Web site were fully reviewed using a predefined scoring sheet designed for prior studies of hospital advertising.²⁷ Web sites were scored on the basis of prominence of advertising, which was assessed by measuring the navigation depth needed to reach stereotactic radiosurgery-related material and by noting the presence of a unique webpage dedicated to the center's brand of stereotactic technology. Navigation depth was defined as the number of mouse clicks required to arrive at a Web page that mentioned the center's brand of stereotactic technology, beginning with the Web page of the hospital or practice where the stereotactic system was located. In addition, the presence of a link to the manufacturer's Web site and the use of manufacturer-provided stock material, as defined by images or text from the manufacturer Web site, were tracked.

Web sites were also scored on the extent to which the advertising material was consistent with the AMA guidelines on advertising and publicity, as outlined in Code of Ethics Opinion 5.02.²⁶ These guidelines state that "objective claims regarding experience, competence, and the quality of physicians and the services they provide may be made only if they are factually supportable." The guidelines also suggest that "it is unlikely that a physician will have a truly exclusive or unique skill or remedy. Claims that imply such a skill or remedy therefore can be deceptive." Thus, we focused on whether centers made factually insupportable or unsubstantiated claims regarding (1) the center's own expertise in using stereotactic technology or (2) the quality of stereotactic radiation services that the center provided.

To analyze whether centers made claims of unique institutional expertise, we tracked those centers that labeled themselves as either the regional leader in stereotactic technology or the region's first center to implement its use. We also recorded whether centers supported these claims by detailing the number of years that they had been offering SRS/SBRT. To analyze whether centers made unsubstantiated claims regarding the quality of their stereotactic radiation services, we examined whether Web sites made statements of improved efficacy, morbidity, and quality of life without providing clinical data or referencing peer-reviewed publications to support these assertions. Claims of efficacy included implications that SRS/SBRT represents the standard of care for treatment of certain tumors

(ie, “gold standard,” “most effective,” and so on) or provides a benefit in either survival (ie, “saves lives,” “cures,” and so on) or disease control (ie, “more complete eradication of cancer,” “better disease control,” and so on). Assertions of decreased morbidity included implications that stereotactic treatment reduces toxicity (ie, “less complications,” “less risk of infection,” and so on) or recovery time (ie, “immediate return,” “get back to your life faster,” and so on). Statements that stereotactic radiation improves quality of life were also noted. In addition, Web sites that directly compared outcomes or toxicity with stereotactic treatment versus with alternative surgical or radiation treatment options were documented.

Furthermore, we compared the specific tumors that Web sites advertised as amenable to stereotactic treatment with those tumors listed by the NCCN as indications for SRS/SBRT. We chose the NCCN guidelines, which are outlined in Table 1, as our reference standard because they were the most robust statement from a professional society regarding use of stereotactic radiation. Thus, we documented whether advertisements for non-NCCN–endorsed disease sites were characterized as investigational or as part of a clinical trial. All data were summarized with simple proportions.

In order to explore the potential impact of practice type on outcomes, we divided our cohort into academic centers, defined as the primary center affiliated with a medical school, and non-academic centers. Outcomes were compared between both groups by using the two-sample z-test.

Results

Of the 212 centers that constituted our study, 43 (20%) were academic institutions, and 169 (80%) were community-based hospitals or private practices. Seventy-five percent of facilities were operated out of a nonprofit hospital or center. Table 2 summarizes data regarding characteristics of Web site advertising for SRS/SBRT. One in five centers (19%) highlighted their brand of stereotactic technology on their Web site’s homepage, and 39% of centers mentioned their stereotactic technology within two clicks of the homepage. Most centers (76%) had a unique Web page dedicated to their stereotactic equipment, and roughly half of Web sites contained manufacturer-provided stock images (50%) or stock text (55%). Of the Web sites that used manufacturer-provided material, only 30% listed the source. Furthermore, 26% of all Web sites supplied a direct link to the manufacturer’s homepage.

A majority (66%) of Web sites advertised SBRT as a treatment modality for non-NCCN–designated indications without stating that the use of stereotactic radiation in these instances is unproven or being conducted on a clinical trial. These included endorsements of SBRT for spinal (58%), prostate (50%), pancreatic (39%), head and neck (19%), and renal (15%) cancers, as illustrated in Table 3. Literature supporting SBRT for these tumor sites was rarely provided, with clinical data referenced in only 9% of Web sites. In addition to listing indications for SRS/SBRT, Web sites frequently included a separate section purporting improved clinical outcomes with stereotactic treatment. However these sections rarely stipulated

Table 2. Characteristics of Center Web Site Information

Characteristic	Web Sites (N = 212)	
	No.	%
Navigation depth		
Hospital or practice homepage	40	19
One click	38	18
Two clicks	45	21
Unique page		
Yes	161	76
Use of stock material		
Images	106	50
Text	117	55
Direct link to manufacturer Web site		
Yes	55	26

the specific tumors to which these claims applied. Table 3 illustrates the prevalence of these claims of clinical benefit, which included language suggesting that stereotactic radiation improves survival (22%), disease control (20%), and quality of life (17%). Nineteen percent implied that stereotactic radiation is the standard of care for certain tumor sites. Claims of shorter recovery time (77%) and decreased toxicity (43%) were also common, although specific adverse effects were mentioned in only 8% of Web sites. Although comparisons to alternative forms of radiation therapy were rare, a number of Web sites noted better outcomes with SRS/SBRT versus surgery, particularly with respect to toxicity (22%). Furthermore, although 40% of centers labeled themselves as the region’s “leader” in stereotactic services, and 35% claimed to be the first in the region to acquire stereotactic technology, only 15% of Web sites provided the actual length of time the center had been treating patients. This information is summarized in Table 3.

When the data were stratified by academic status, there were no significant differences in the proportion of center Web sites in each group that had a dedicated stereotactic radiation page ($P = .078$), stock images ($P = .2062$), stock text ($P = .3472$), or a direct link to the manufacturer ($P = .206$). In addition, average navigation depth was not significantly different ($P = .134$) between academic and nonacademic centers. There were also no significant differences in the proportion of centers claiming to be the regional leader in delivering radiation or the first to acquire stereotactic technology ($P = .295$). Also, academic centers did not differ from nonacademic centers in the proportion of Web sites that maintained advertisements for non-NCCN–designated indications (data not shown) or that provided supporting literature or references for their claims ($P = .652$).

Discussion

Our analysis of health care providers’ advertisements for stereotactic services raises serious questions regarding the transparency and accuracy of provider DTCA for stereotactic radiation. Indeed, many of the centers in our study used marketing that

Table 3. Prevalence of Center Web Sites Endorsing Non-NCCN-Designated Indications for Stereotactic Treatment, Claiming Clinical Benefits With Stereotactic Radiation, and Describing Their Expertise in Delivering Stereotactic Radiation

	Web Sites (N = 212)	
	No.	%
Non-NCCN-designated indications for stereotactic radiation endorsed by center websites		
Spine	123	58
Prostate	106	50
Pancreas	83	39
Head and neck	40	19
Kidney	32	15
Efficacy		
Survival benefit	47	22
Improved disease control	42	20
Standard of care	40	19
Morbidity		
Decreased recovery time	163	77
Decreased toxicity	91	43
Description of specific side effects	17	8
Improved quality of life	36	17
Comparison to surgery		
Efficacy	11	5
Toxicity	47	22
Comparison to alternative radiation therapy modalities		
Efficacy	2	1
Toxicity	4	2
Provision of data		
Unreferenced study data	6	3
Referenced study data	19	9
Region's leader in stereotactic radiation	85	40
First in region to acquire stereotactic technology	74	35
No. of years treating patients with stereotactic radiation	32	15

Abbreviation: NCCN, National Comprehensive Cancer Network.

prominently displayed stock industry images and text without proper attribution. More concerning was the prevalence of unsubstantiated statements and misleading language, which frequently promoted the benefits of SRS/SBRT without providing evidence to support these claims while also failing to describe potential risks. In addition, centers commonly labeled themselves as the region's leader in stereotactic services or the first to offer stereotactic technology, which, even if true, runs counter to AMA guidelines by implying an ability to offer unique or exclusive services. Interestingly, these findings seem to apply to both academic and nonacademic institutions equally. Given the absence of clinical data, emphasis on institutional expertise, and claims of improved outcomes compared with alternative treatment options, we found that the advertising campaigns for stereotactic technology appear to be largely shaped by the competitive market for radiosurgical services rather than a specific interest in patient education.

We selected stereotactic radiosurgery as the focus of the current study because of its expanding role in radiation oncology and the preliminary nature of the data supporting its use, particularly for extracranial applications. With advanced operational capabilities, newer stereotactic radiation platforms have garnered considerable enthusiasm among radiation oncologists, and studies across multiple body sites have suggested favorable survival, toxicity, and quality of life, particularly for brain, lung, and liver lesions.¹¹⁻¹⁸ However, most published work to date has consisted of nonrandomized analyses of small cohorts of patients without significant follow-up, and some reports have described unacceptably high toxicity levels, underscoring the need for caution when advocating the benefits of stereotactic radiation.¹⁹⁻²² Without more robust, long-term data, controversy has centered on the promotional language that some manufacturers of stereotactic radiation platforms have used in their DTCA.²⁵

Rather than focusing on manufacturer DTCA, which has long been controversial, we instead sought to explore DTCA by the hospitals and centers that provide stereotactic radiation services. Aggressive marketing by health care providers has become an increasingly recognized phenomenon that threatens the fiduciary duty of providers to offer nonbiased assessments of medical interventions.²⁸⁻³⁰ Indeed, a 2005 study of the advertising of 17 leading medical centers revealed that marketing strategies were frequently based on exploiting emotional appeals and institutional reputation, with rare quantification of potential benefits or mention of potential harms.³¹ The study also exposed the lack of internal or external measures to regulate the content of hospital advertisements, a topic more recently discussed in the popular press.^{8,9,32} Although patients generally exhibit a healthy skepticism of private industry, misleading DTCA by providers may be particularly worrisome given that patients often perceive these advertisements to be representative of the physician perspective.^{33,34}

Our study suggests that providers need to better ensure that their advertisements contain accurate and valid information regarding the risks and benefits of therapies. Furthermore, providers should seek to distance themselves from medical device companies by removing links to manufacturer Web sites and eliminating manufacturer-provided material, or at the very least acknowledging the source of such material. Providers should also institute formalized internal processes for evaluating and approving advertisements. Whereas the institutional review boards of medical centers are required to approve marketing materials aimed at recruiting research participants, it is striking that similar oversight does not exist for advertisements targeted towards the general population. Recent discussion of these issues at both the Association of American Medical College's 2010 Group on Institutional Advancement annual meeting and the NCCN's 2010 annual meeting is encouraging.⁸

A number of important limitations of our study must be acknowledged. First, our analysis was primarily rooted in ethics using the AMA guidelines to define end points, but future studies should expand on the possible implications of provider advertising by examining the effect of this advertising on more

patient-centric end points such as patient education, quality of care, cost of care, and use of services. Considerable literature exists on the effect of DTCA by industry on patient education, patient-physician communication, patient adherence to treatments, and overuse of treatments, and future analysis on provider advertising should parallel this work.³⁵ Second, we examined the advertisements of providers for two brands of stereotactic technology, and so our results may not be representative of provider marketing in general. We also included both hospitals and private practices when assessing the prominence of advertising, despite the disparity in range of services provided. In addition, by examining only Web sites, we excluded other forms of advertising such as print, radio, and television. Furthermore, our methodology for interpreting and classifying Web site language was subjective and was constrained by the fact that Web sites often did not specify tumor sites or differentiate between SRS and SBRT when expounding on the clinical benefits of stereotactic radiation, prohibiting stratification of our results. Moreover, we used the clinical guidelines of a single professional society in defining our reference for appropriate use of SRS/SBRT. We recognize that the NCCN guidelines do not represent a legal standard of care and that use of SRS/SBRT for non-NCCN-endorsed indications may be legally and/or ethically justifiable given the specific clinical context. Finally, because the NCCN does endorse SBRT for patients with recurrent spinal metastases who have undergone prior surgery and/or conventional radiotherapy, but Web sites rarely clarified the specific patient or tumor characteristics that would qualified a patient with spinal disease for SBRT, the percentage of Web sites deemed as advertising a non-NCCN-designated indication may represent an overestimate.

Nevertheless, by selecting an emerging, expensive technology with limited definitive data and using the profession's ethical code to define end points, we believe our study methods are sufficient for highlighting an important issue that merits the

attention of providers. Given the extensive literature on the relative merits of industry DTCA, we believe that similar attention should also be given to the marketing practices of providers.

In summary, we found that more than 20% of provider Web sites advertising stereotactic radiation made unsupported claims of clinical benefit, 40% championed their own expertise in delivering stereotactic radiation treatments, and more than 60% endorsed the use of stereotactic radiation for indications not supported by professional societies. Although the FDA provides protections against exaggerated advertising by manufacturers, consumers have no such protections against aggressive marketing campaigns by providers. Greater oversight is needed to ensure that the claims made by providers regarding the benefits of therapies are accurate.

Authors' Disclosures of Potential Conflicts of Interest

The author(s) indicated no potential conflicts of interest.

Author Contributions

Conception and design: All authors

Administrative support: Joseph M. Herman

Provision of study materials or patients: Edwin Lam, Joseph M. Herman

Collection and assembly of data: Amol K. Narang, Edwin Lam, Joseph M. Herman

Data analysis and interpretation: All authors

Manuscript writing: All authors

Final approval of manuscript: All authors

Corresponding author: Joseph M. Herman, MD, MSc, Department of Radiation Oncology, 410 North Broadway, Suite 1440, Baltimore, MD 21231-2410; e-mail: jherma15@jhmi.edu.

DOI: 10.1200/JOP.2012.000693; published online ahead of print at jop.ascopubs.org on November 20, 2012.

References

- Wald HS, Dube CE, Anthony DC: Untangling the web—The impact of internet use on healthcare and the physician-patient relationship. *Patient Educ Couns* 68:218-224, 2007
- Johnson PT, Chen JK, Eng J, et al: A comparison of world wide web resources for identifying medical information. *Acad Radiol* 15:1165-1172, 2008
- Hartzband P, Groopman J: Untangling the web—Patients, doctors, and the Internet. *N Engl J Med* 362:1063-1066, 2010
- Macready, N: Cancer patients connect on the Internet. *J Natl Cancer Inst* 104:267-268, 2012
- Lee CJ, Graw SW, Lewis N: Internet use leads cancer patients to be active health consumers. *Patient Educ Couns* 81:S63-S69, 2010 (suppl)
- Donohue JM, Cevalco M, Rosenthal MB: A decade of direct-to-consumer advertising of prescription drugs. *N Engl J Med* 357:673-681, 2007
- Mitka M: Direct-to-consumer advertising of medical devices under scrutiny. *JAMA* 300:1985-1986, 2008
- Rosenthal E: Some cancer centers seem reluctant to advertise their advertising efforts: Part 1. *Oncology Times* 32:38-39, 2010
- Singer N: Cancer center ads use emotion more than fact. *New York Times*, December 19, 2009, p A1
- Accuray: 100,000th patient treated with Accuray's CyberKnife robotic radiosurgery system. Press release, October 6, 2010. <http://www accuray.com/PressReleases.aspx?release=3982>
- Linskey ME, Andrews DW, Asher AL, et al: The role of stereotactic radiosurgery in the management of patients with newly diagnosed brain metastases: A

- systematic review and evidence-based clinical practice guideline. *J Neurooncol* 96:45-68, 2010
- Andrews DW, Scott CB, Sperduto PW, et al: Whole brain radiation therapy with or without stereotactic radiosurgery boost for patients with one to three brain metastases: Phase III results of the RTOG 9508 randomized trial. *Lancet* 363:1665-1672, 2004
- Aoyama H, Shirato H, Tago M, et al: Stereotactic radiosurgery plus whole-brain radiation therapy versus stereotactic radiosurgery alone for treatment of brain metastases: A randomized controlled trial. *JAMA* 295:2483-2491, 2006
- O'Neill BP, Iturria NJ, Link MJ, et al: A comparison of surgical resection and stereotactic radiosurgery in the treatment of solitary brain metastases. *Int J Radiat Oncol Biol Phys* 55:1169-1176, 2003
- Rades D, Kueter JD, Veninga T, et al: Whole brain radiotherapy plus stereotactic radiosurgery (WBRT+SRS) versus surgery plus whole brain radiotherapy (OP+WBRT) for 1-3 brain metastases: Results of a matched paired analysis. *Eur J Cancer* 45:400-404, 2009
- Kondziolka D, Mathieu D, Lunsford LD, et al: Radiosurgery as definitive management of intracranial meningiomas. *Neurosurgery* 62:53-58, 2008
- Timmerman R, Paulus R, Galvin J, et al: Stereotactic radiosurgery body radiation therapy for inoperable early stage lung cancer. *JAMA* 303:1070-1076, 2010
- Tse RV, Hawkins M, Lockwood G, et al: Phase I study of individualized stereotactic body radiotherapy for hepatocellular carcinoma and intrahepatic cholangiocarcinoma. *J Clin Oncol* 26:657-664, 2008

19. Chang EL, Shiu AS, Mendel E, et al: Phase I/II study of stereotactic body radiotherapy for spinal metastasis and its pattern of failure. *J Neurosurg Spine* 7:151-160, 2007
20. Freeman DE, King CR: Stereotactic body radiotherapy for low-risk prostate cancer: First five-year outcomes. *Radiat Oncol* 6:3, 2011
21. Koong AC, Christofferson E, Le QT, et al: Phase II trial to assess the efficacy of conventionally fractionated radiotherapy followed by a stereotactic radiosurgery boost in patients with locally advanced pancreatic cancer. *Int J Radiat Oncol Biol Phys* 63:320-323, 2005
22. Schellenberg D, Goodman KA, Lee F, et al: Gemcitabine chemotherapy and single-fraction stereotactic body radiotherapy for locally advanced pancreatic cancer. *Int J Radiat Oncol Biol Phys* 72:678-686, 2008
23. National Comprehensive Care Network: Clinical Practice Guidelines in Oncology. <http://www.nccn.org>
24. Association of Therapeutic Radiation Oncology: Evaluation Projects: Stereotactic Body Radiation Therapy (Prostate Cancer). <http://www.astro.org/HealthPolicy/EmergingTechnology/EvaluationProjects/documents/SBRTPosit.pdf>
25. Bentzen SM, Wasserman TH: Balancing on a knife's edge: Evidence-based medicine and the marketing of health technology. *Int J Radiat Oncol Biol Phys* 72:12-18, 2008
26. American Medical Association Code of Ethics. Opinion 5.02 – Advertising and Publicity. <http://www.ama-assn.org/ama/pub/physician-resources/medical-ethics/code-medical-ethics/opinion502.shtml>.
27. Jin LX, Ibrahim AM, Newman NA, et al: Robotic surgery claims on United States hospital websites. *J Healthcare Qual* doi: 10.1111/j. 1945-1474.2011.00148.x
28. Frosch DL, Grande D, Tarn DM, et al: A decade of controversy: Balancing policy with evidence in the regulation of prescription drug advertising. *Am J Public Health* 100:24-32, 2010
29. Liang BA, Mackey T: Direct-to-consumer advertising with interactive Internet media. *JAMA* 305:824-825, 2011
30. Mulhall JP, Rojatz-Cruz C, Müller A: An analysis of sexual health information on radical prostatectomy websites. *BJU Int* 105:68-72, 2010
31. Larson RJ, Schwartz LM, Woloshin S, et al: Advertising by academic medical centers. *Arch Intern Med* 165:645-651, 2005
32. Rosenthal E: Some cancer centers seem reluctant to advertise their advertising efforts: Part 2. *Oncology Times* 32:13-15, 2010
33. Pompitakpan C: The persuasiveness of source credibility: A critical review of five decades of evidence. *J Appl Soc Psychol* 34:243-281, 2004
34. Pronovost PJ, Miller M, Wachter RM: The GAAP in quality measurement and reporting. *JAMA* 298:1800-1802, 2007
35. Dominick L, Frosch DG, Derjung TM, et al: A decade of controversy: Balancing policy with evidence in the regulation of prescription drug advertising. *Am J Public Health* 100:24-32, 2010

Attend the 2013 Gastrointestinal Cancers Symposium

The 2013 Gastrointestinal Cancers Symposium (January 24-26, 2013, in San Francisco, California) is celebrating its 10th year. This high-profile, specialized oncology event is designed for the exchange of the latest research and science in cancers of the esophagus and stomach; pancreas, small bowel, and hepatobiliary tract; and colon and rectum. Cosponsors: AGA Institute, ASCO, ASTRO, SSO. Bookmark gicasym.org and visit regularly for meeting updates.

American Society of Clinical Oncology

Appendix

American Medical Association Code of Ethics

Opinion 5.02 on Advertising and Publicity

There are no restrictions on advertising by physicians except those that can be specifically justified to protect the public from deceptive practices. A physician may publicize him or herself as a physician through any commercial publicity or other form of public communication (including any newspaper, magazine, telephone directory, radio, television, direct mail, or other advertising) provided that the communication shall not be misleading because of the omission of necessary material information, shall not contain any false or misleading statement, or shall not otherwise operate to deceive.

Because the public can sometimes be deceived by the use of medical terms or illustrations that are difficult to understand, physicians should design the form of communication to communicate the information contained therein to the public in a readily comprehensible manner. Aggressive, high-pressure advertising and publicity should be avoided if they create unjustified medical expectations or are accompanied by deceptive claims. The key issue, however, is whether advertising or publicity, regardless of format or content, is true and not materially misleading. The communication may include (1) the educational background of the physician, (2) the basis on which fees are determined (including charges for specific services), (3) available credit or other methods of payment, and (4) any other nondeceptive information.

Nothing in this opinion is intended to discourage or to limit advertising and representations which are not false or deceptive within the meaning of Section 5 of the Federal Trade Commission Act. At the same time, however, physicians are advised that certain types of communications have a significant potential for deception and should therefore receive special attention. For example, testimonials of patients as to the physician's skill or the

quality of the physician's professional services tend to be deceptive when they do not reflect the results that patients with conditions comparable to the testiment's condition generally receive.

Objective claims regarding experience, competence, and the quality of physicians and the services they provide may be made only if they are factually supportable. Similarly, generalized statements of satisfaction with a physician's services may be made if they are representative of the experiences of that physician's patients.

Because physicians have an ethical obligation to share medical advances, it is unlikely that a physician will have a truly exclusive or unique skill or remedy. Claims that imply such a skill or remedy therefore can be deceptive. Statements that a physician has an exclusive or unique skill or remedy in a particular geographic area, if true, however, are permissible. Similarly, a statement that a physician has cured or successfully treated a large number of cases involving a particular serious ailment is deceptive if it implies a certainty of result and creates unjustified and misleading expectations in prospective patients.

Consistent with federal regulatory standards which apply to commercial advertising, a physician who is considering the placement of an advertisement or publicity release, whether in print, radio, or television, should determine in advance that the communication or message is explicitly and implicitly truthful and not misleading. These standards require the advertiser to have a reasonable basis for claims before they are used in advertising. The reasonable basis must be established by those facts known to the advertiser, and those which a reasonable, prudent advertiser should have discovered. Inclusion of the physician's name in advertising may help to assure that these guidelines are being met.