Practical Radiation Oncology (2015) **xx**, xxx–xxx

practical radiation oncology
pro
www.practicalradonc.org

Original Report

Accessibility, availability, and quality of online information for US radiation oncology residencies

Daniel V. Wakefield BS [a], Bogdan A. Manole BS [a], Amit Jethanandani MPH [a], Michael E. May Jr. MD [a], Samuel R. Marcrom MD [b], Michael R. Farmer MD [c], Matthew T. Ballo MD [c], Noam A. VanderWalde MD [c,*]

[a]*University of Tennessee College of Medicine, Memphis, Tennessee*
[b]*Department of Radiation Oncology, University of Alabama, Birmingham, Alabama*
[c]*Department of Radiation Oncology, University of Tennessee West Cancer Center, Memphis, Tennessee*

Received 12 September 2015; revised 17 October 2015; accepted 26 October 2015

Abstract

Purpose: Radiation oncology (RO) residency applicants commonly use Internet resources for information on residency programs. The purpose of this study is to assess the accessibility, availability, and quality of online information for RO graduate medical education.

Methods and materials: Accessibility of online information was determined by surveying databases for RO residency programs within the Fellowship Residency Electronic Interactive Data Access System (FREIDA) of the American Medical Association, the Accreditation Council for Graduate Medical Education (ACGME), and Google search. As of June 30, 2015, websites were assessed for presence, accessibility, and overall content availability based on a 55-item list of desired features based on 13 program features important to previously surveyed applicants. Quality scoring of available content was performed based on previously published Likert scale variables deemed desirable to RO applicants. Quality score labels were given based on percentage of desired information presented.

Results: FREIDA and ACGME databases listed 89% and 98% of program websites, respectively, but only 56% and 52% of links routed to a RO department-specific website, respectively. Google search obtained websites for 98% of programs and 95% of links routed to RO department-specific websites. The majority of websites had program descriptions (98%) and information on staff. However, resident information was more limited (total number [42%], education [47%], previous residents [28%], positions available [35%], contact information [13%]). Based on quality scoring, program websites contained only 47% of desired information on average. Only 13% of programs had superior websites containing 80% or more of desired information.

Conflicts of interest: None.

* Corresponding author. Department of Radiation Oncology, University of Tennessee West Cancer Center, 1265 Union Avenue, Thomas Basement, Memphis, TN 38104.

E-mail address: nvanderw@westclinic.com (N.A. VanderWalde).

http://dx.doi.org/10.1016/j.prro.2015.10.016

Conclusions: Compared with Google, the FREIDA and ACGME program databases provide limited access to RO residency websites. The overall information availability and quality of information within RO residency websites varies widely. Applicants and programs may benefit from improved content accessibility and quality from US RO program websites in the residency application process.

Introduction

Radiation oncology is a field based in scientific advancement and experiences constant change via technological innovation. The rise of the Internet in the past 3 decades has transformed the way information is presented about the field as a whole. Fourth-year medical students often lack substantial experience in radiation oncology and therefore turn to the online resources for information about the field. The Fellowship Residency Electronic Interactive Data Access System (FREIDA) of the American Medical Association and the Accreditation Council for Graduate Medical Education (ACGME) have both been established in an effort to centralize and standardize online information available on medical residencies in the United States, including radiation oncology.

The FREIDA and ACGME databases provide information on residency programs including program name, location, number of approved residency positions, number of filled positions, program director, and program coordinator contact information. They also both contain links to program websites, participating institutions, and accreditation status. These resources are freely available to prospective applicants and stand as the most official online means of assessing residency program information.

But what information is actually available from program websites, and is it of value to applicants? Online information analysis has been performed for residencies and fellowships of many specialties.[1–5] To our knowledge, general surgery, orthopedics, and plastic surgery residencies and fellowships have been assessed. Studies have shown limited accessibility and quality of available information and have concluded that the Internet is being underused as an educational and recruitment tool across multiple specialties.[1-3,5]

As to the value of information provided, applicants to other specialties, including internal medicine, neurosurgery, and orthopedics, have been surveyed to assess what information is valuable to them in choosing a residency program.[6-8] It has been reported that not all information of equal value to applicants.[6-8] These studies show that with minimal variability across specialties, applicants rate programs' resident morale, geographic location, academic rigor, and work volume most highly in their residency selection process.[6-8] Analysis has been performed on factors considered valuable to radiation oncology residency applicants in choosing a residency; however, there has never been a study investigating availability and quality of the online information regarding these factors presented by radiation oncology residency programs.[9] The purpose of this study is to analyze the accessibility, availability, and quality of online resources for radiation oncology graduate medical education in the United States.

Methods and materials

Accessibility

Accessibility of online information was determined by surveying databases for radiation oncology programs within FREIDA (freida.ama-assn.org), the ACGME (www.acgme.org), and Google search as of June 30, 2015. Google search was performed by entering "[program name]" + "radiation oncology residency" (google.com). We performed searches for each program and evaluated the first page of results (10 results) for direct links to program websites.

Websites were assessed for FREIDA and ACGME link presence and website accessibility. Accessibility was determined by the functionality of the link provided and direction to a radiation oncology program-specific website. Two independent, blinded reviewers recorded data using binary variables describing the presence or absence of content. Presence was defined as the existence of a link within the previously mentioned databases and Google search. Analysis was performed using Microsoft Excel.

Availability and quality

A checklist of website content was created based on factors previously reported to be important to applicants.[9] Websites were analyzed for the availability of 55 content features grouped by contact information, patient services, resident education, recruitment information, and miscellaneous "other" items, as described in Table 1. An interrater reliability analysis using the Cohen's Kappa statistic was performed to determine the consistency of availability assessment among raters. Quality was evaluated by the presence of data reported to be desirable by radiation oncology applicants, as defined by a Likert scale survey of 70 radiation oncology fourth-year medical student applicants and postgraduate year 1 level trainees by Brower and colleagues in 2014.[9] Qualities of programs including resident happiness, geographic location, clinical research