How Does the Current Generation of Medical Students View the Radiology Match?:
An Analysis of the AuntMinnie and Student Doctor Network Online Forums

Paul H. Yi, MD, Sherwin Novin, BS, Taylor L. Vander Plas, BS, Eric Huh, MD, Donna Magid, MD, MEd

Abbreviations and Acronyms

AM
AuntMinnie

DR
diagnostic radiology

IR
interventional radiology

NRMP
National Resident Matching Program

SDN
Student Doctor Network

Rationale and Objectives: The AuntMinnie (AM) and the Student Doctor Network (SDN) online forums are popular resources for medical students applying for residency. The purpose of this study was to describe medical student radiology-related posts on AM and SDN to better understand the medical student perspective on the application and Match process.

Materials and Methods: We reviewed all posts made on the AM and SDN online forums over 5 consecutive academic years from July 2012 to July 2017. Each thread was organized into one of six major categories. We quantified forum utilization over the past 5 years by the total number of and the most frequently posted and viewed thread topics.

Results: We reviewed 2683 total threads with 5,723,909 views. Total number of threads posted and viewed fell by 46% and 63%, respectively, from 2013–2014 to 2014–2015, after which they returned near baseline by 2016–2017, along with an increase in interventional radiology-related posts between 2012–2013 (13%) and 2016–2017 (32%) ($P < .001$). The most common application-related topics were preapplication and program ranking advice (20% of all threads and views). Many posts were related to postinterview communication with residency programs (2% of all threads and views).

Conclusions: After a drop in 2013–2014, utilization of AM and SDN increased in 2016–2017, along with increased interest in interventional radiology. Addressing the student concerns identified in our study, especially in preparing residency applications, ranking programs, and navigating difficult situations, such as postinterview program communication, may improve the radiology application process for future medical students and their advisors.

Key Words: Education; Internet; medical students; radiology; residency.

INTRODUCTION

The competitiveness of diagnostic radiology (DR) residency waned in the early 2010s, with fewer US senior medical students applying to the field in spite of concomitant increases in the number of open positions each year

from 2009 to 2013 (1). However, there has been a recent uptick in competitiveness of the field, as seen in 2016 (2), perhaps in part because of the advent of and the increased interest in integrated interventional radiology (IR) residencies, and possibly in part because of the improved job market as the economy improved from 2008 to 2009. Most recently in 2016-17, DR's competitiveness has been high with 98.4% of postgraduate year 2 positions filled (3). Furthermore, integrated IR residency was the most competitive residency in 2017, the first year it was offered through the National Resident Matching Program (NRMP) Main Residency Match (3). In the most recent application cycles, DR has continued to attract talented medical school applicants with high average USMLE step 1 and step 2 scores and high percentage of Alpha Omega Alpha membership comparable to other competitive specialties, such as plastic surgery, dermatology,

and orthopedic surgery (4). Now more than ever, with both DR and IR on the rise in popularity and competitiveness among medical students, it is important that medical students applying to radiology be mentored and guided in a way that will help equip them for success and reassure them of current radiologists' interest in and attention to student concerns.

Prior studies have shown Internet-based resources to be important resources for medical students applying to radiology. One prior survey of 120 US medical students applying to a single radiology program revealed that program websites were among the most sought-after and highest-rated resources in choosing a program to rank (5). A second survey study of US medical students confirmed that medical students applying to radiology frequently utilized radiology residency websites to gather information in deciding to which programs they would apply (6). In this single-center study of 111 students, among social media sites, the AuntMinnie (AM) online forum was the most popular website utilized to seek information about residency programs, with 37% of students reporting that they use the site; Student Doctor Network (SDN) followed closely behind with 10% of students reporting usage (6). Although both the AM and SDN online forums represent a unique source of anonymous information about medical student concerns regarding the radiology residency application and Match process, no study has evaluated either forum for medical student concerns regarding applying to radiology.

The purpose of the present study was to describe posts made by medical students applying to radiology on AM and SDN over the past five consecutive application cycles to better understand the medical student perspective on applying for radiology residency.

MATERIALS AND METHODS

AM (7) and SDN (8) are free public websites containing information and news on radiology, its associated subspecialties (in the case of AM), and other medical specialties (in the case of SDN). Both websites contain online discussion forums (7,8) where users can anonymously make posts for discussion on a variety of topics. The present study focused on these two online discussion forums, which are organized in the standard hierarchical model of online forums, whereby users create discussion topics referred to as "threads," which are organized in list format; other users can then make replies to the original posting to engage in further discussion (9). Both forums keep track of the total number of "views" for each thread, which serves as a metric for the interest a particular topic has among users. Both websites require an anonymous profile and username to post; SDN allows browsing without a username, whereas AM requires a username to browse and make posts.

Based on prior methodology by Kozin et al., who performed a similar analysis of an online otolaryngology medical student forum (9), we reviewed the AM and SDN online forum archives over the most recent five consecutive application cycles starting with the 2012–2013 application cycle and ending with the 2016–2017 application cycle. We defined an application

cycle as 1 calendar year from the beginning of July of 1 year to the end of June of the following year to coincide with the academic calendar year used by US medical schools, as well as to coincide with the radiology residency application timeline, where applications are submitted in September of any given year and Match results are revealed in March of the following year. Although many postings posted after March likely pertain to the following Match cycle, we chose the abovementioned convention to both coincide with the academic calendar year applicable to medical students and residents and account for the likelihood that many postings would pertain to the previous Match cycle. The entire SDN "Radiology" forum and associated subforums of "Interventional Radiology" and "Nuclear Medicine" were reviewed, whereas only the "Medical Students" and the Interventional Radiology sections were reviewed on AM, as these represented the forums geared directly toward medical students. We chose to include Nuclear Medicine, given the growing demand for radiologists skilled in Nuclear Medicine and the recent introduction and interest in combined Diagnostic Radiology and Nuclear Medicine residency programs (10,11). With some medical students applying to DR considering these combined pathways, we felt it would be of interest to assess posts being made in the Nuclear Medicine thread.

We recorded the title of each thread posted during the study period and the total number of views for each thread. Given the recent start of integrated IR residencies in the 2016–2017 application cycle, we also assessed the number of IR-related threads to quantify the relative interest in IR over the past five application cycles; we reviewed each thread for relevance to IR, regardless of the original forum it was posted under. Each thread was then organized into 1 of 6 major categories, which were based on chronology of the residency application cycle, and 1 of 19 subcategories (defined in Table 1), which were based on those developed by Kozin et al. (9). These categorizations were performed by the first three authors. In the event of uncertainty regarding a thread's category or subcategory, the category was discussed among the first three authors and a category was assigned by consensus.

We quantified the utilization of AM and SDN over the past 5 years by way of the total number of threads and views, as well as by the number of threads and views per main thread category and subcategory, both of which provide measures of relative relevance of various topics to medical students. The total numbers of threads and views were quantified over 5 years to assess for temporal trends in interest in radiology application or Match-related discussion. Furthermore, these metrics were quantified by month of posting to better understand what topics are most relevant to students at a given time point during the application cycle. Percentages of IR-related threads were compared between years using chi-square tests. All statistical analysis was performed using Microsoft Excel 2017 (Microsoft, Redmond, WA) and VassarStats (12).

The present study was considered exempt by our institutional review board, which deemed it was nonhuman subject research. Additionally, at the suggestion of our institutional