

# A Descriptive Analysis of the Use of Twitter by Emergency Medicine Residency Programs

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## ABSTRACT

**Background** Twitter is increasingly recognized as an instructional tool by the emergency medicine (EM) community. In 2012, the Council of Residency Directors in Emergency Medicine (CORD) recommended that EM residency programs' Twitter accounts be managed solely by faculty. To date, little has been published regarding the patterns of Twitter use by EM residency programs.

**Objective** We analyzed current patterns in Twitter use among EM residency programs with accounts and assessed conformance with CORD recommendations.

**Methods** In this mixed methods study, a 6-question, anonymous survey was distributed via e-mail using SurveyMonkey. In addition, a Twitter-based search was conducted, and the public profiles of EM residency programs' Twitter accounts were analyzed. We calculated descriptive statistics and performed a qualitative analysis on the data.

**Results** Of 168 Accreditation Council for Graduate Medical Education–accredited EM programs, 88 programs (52%) responded. Of those programs, 58% (51 of 88) reported having a program-level Twitter account. Residents served as content managers for those accounts in the majority of survey respondents (61%, 28 of 46). Most programs did not publicly disclose the identity or position of their Twitter content manager. We found a wide variety of applications for Twitter, with EM programs most frequently using Twitter for educational and promotional purposes. There is significant variability in the numbers of followers for EM programs' Twitter accounts.

**Conclusions** Applications and usage among EM residency programs are varied, and are frequently not consistent with current CORD recommendations.

## Introduction

There is evidence of increased use of Twitter (Twitter Inc, San Francisco, CA) within academic emergency medicine (EM) education. Over the past 2 years, the number of Twitter accounts affiliated with EM residency programs accredited by the Accreditation Council for Graduate Medical Education (ACGME) has nearly doubled, with more than 60% of programs currently active on Twitter.<sup>1,2</sup> The value of this growing use of social media is supported through van der Vleuten and Driessen's<sup>3</sup> conceptual framework on aligning educational practice with research. Twitter can serve as an instructional tool that supports the learning process through elaboration, cooperative learning, feedback, mentoring, and engagement, all within a social context.<sup>3</sup> A number of examples of the use of Twitter in resident recruitment, communication, and education have been published.<sup>2,4-8</sup>

While little is known about the educational effectiveness of Twitter, much has been published about its potential inherent legal, personal, and professional risks.<sup>7</sup> In 2012, the Council of Residency Directors in Emergency Medicine (CORD) strongly recommended that each residency program develop a social media policy, and that the content manager of a residency program's social media site should be a staff member, not a resident.<sup>9</sup> The Council's rationale was that content managers may not only be held personally liable for information posted to programs' social media sites, but also are responsible for ensuring compliance with the Health Insurance Portability and Accountability Act of 1996 (HIPAA), having postings use an appropriate professional tone, and portraying an accurate representation of the brand and public image of the programs and institutions they represent.<sup>10,11</sup> However, a recent survey of 14 EM residency programs showed that a number of them did not adhere to these guidelines, by either not having a social media policy in place or having residents serve as content managers for social media accounts.<sup>7</sup>

We conducted a descriptive analysis of EM residency programs' use of Twitter, and explored whether current practices are consistent with CORD recommendations.

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*Editor's Note: The online version of this article contains the survey questions used in the study and the results of a Twitter-based search of ACGME-accredited emergency medicine residency programs' Twitter accounts.*

**Methods**

This multicenter, cross-sectional analysis was based on a voluntary, anonymous, 6-question survey distributed by a series of e-mail requests between September 2015 and February 2016, via an online survey tool (SurveyMonkey, Palo Alto, CA). The e-mailed survey invitations were distributed to directors of ACGME-accredited EM residency programs, who had the option to complete the study or distribute it to a faculty member, resident, or administrator, at their discretion.

We targeted a 50% response rate (approximately 84 programs), and follow-up e-mails were sent at 6-week intervals in an attempt to increase participation.

Survey questions (provided as online supplemental material) were developed by both authors, and were piloted for content and response process validity with a group of local content experts on education research and survey design. Questions addressed the use of Twitter by EM programs, content managers of the Twitter account, specific applications using Twitter, and measures to protect academic integrity and professionalism.

We also conducted a Twitter-based search of ACGME-accredited EM residency programs' Twitter accounts (provided as online supplemental material). The search was conducted on February 26, 2016, and the EM Residency Programs List, managed by the Emergency Medicine Residents' Association Twitter account (@emresidents), was used to identify ACGME-accredited EM residency programs with affiliated Twitter accounts. If a program was not listed, we manually searched for it on Twitter, using the program's name and/or abbreviation. Data collected from the program's Twitter account included the number of followers, the frequency of tweets, and the information from the "Twitter Bio" section of its Twitter home page.

The study protocol was approved by the Institutional Review Board of Oregon Health & Science University.

We used Microsoft Excel (Microsoft Corp, Redmond, WA) for statistical analysis.

**Results**

Of 168 ACGME-accredited EM programs, 88 (52%) responded to the survey. Fifty-one of the responding programs (58%) had Twitter accounts and could continue filling out the survey; 46 of them (90%) completed the remainder of the survey. Response rates are shown in FIGURE 1. Respondents were primarily program directors (63%, 29 of 46). The composition of survey respondents by title is shown in the TABLE (A).

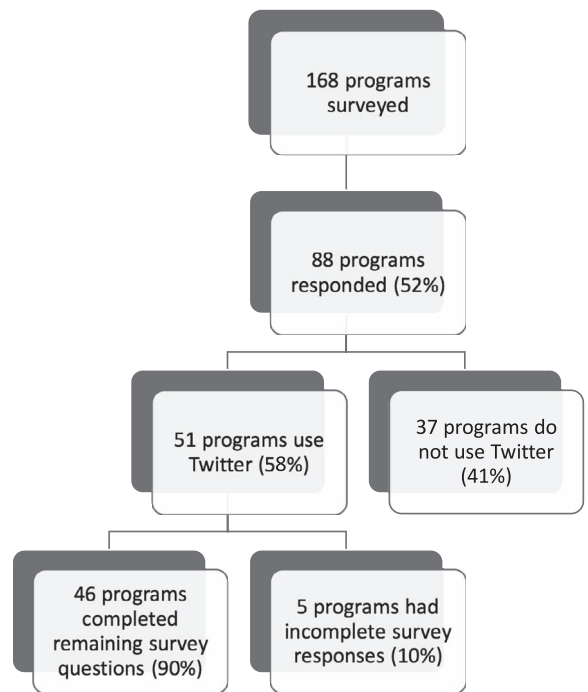
**What was known and gap**  
Use of Twitter by residency programs for recruitment, education, and communication is common, yet there are risks.

**What is new**  
A study assessed use of Twitter in emergency medicine programs, and whether it conformed to guidelines by the specialty's program director organization.

**Limitations**  
Social desirability responding; potential that respondents lacked awareness of current social media guidelines.

**Bottom line**  
Use of Twitter among emergency medicine programs is common and varied, and often does not conform to program director organization guidance.

We found variability in the content managers for EM programs' Twitter accounts. More Twitter accounts were managed by residents compared to faculty members (28 accounts versus 24 accounts; TABLE [B]). Responses regarding who can contribute to the programs' Twitter account varied, from any resident or faculty member to only specifically appointed residents and/or faculty (such as a resident-level director of social media education) to contributions from residents and faculty members of the social media committee. Of resident content managers, the majority were chief residents (64%, 18 of 28).



**FIGURE 1**  
Flow Chart of Survey Response Rate

**TABLE**  
Responses to Selected Survey Questions

(A) Position of Survey Respondents	Survey Respondents <sup>a,b</sup> , No. (%)
Program director	29 (63)
Faculty	8 (17)
Resident	8 (17)
Administrator	1 (2)
<b>(B) Individual(s) Responsible for Posting Tweets on EM Programs' Twitter Account</b>	
Resident(s)	28
Faculty	24
Administration/staff	6
Mixed faculty and residents	4
Not reported	3
<b>(C) Type(s) of Content Posted to the Twitter Account</b>	
Educational conference content	38
Residency/departmental promotional content	31
Educational nonconference content	28
Asynchronous curriculum for resident training	10
Online journal club commentary	10
<b>(D) Measures Taken to Protect Academic Integrity and Professionalism of Department and Institution Represented by Program's Twitter Account</b>	
Adherence to an institutional social media policy	38 (83)
Policies on who is allowed to tweet	34 (74)

<sup>a</sup> N = 46.

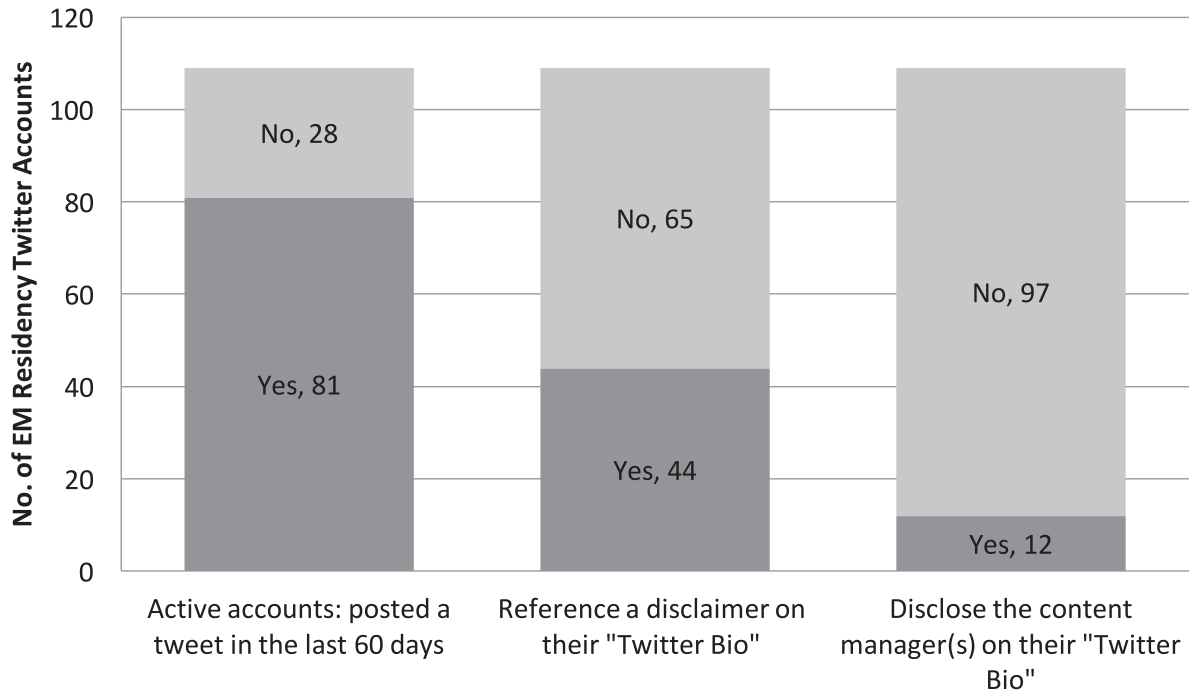
<sup>b</sup> Percentages not reported in (B) and (C) as the number of respondents differed by question.

The majority of respondents reported that their EM programs' Twitter accounts posted educational conference content (83%, 38 of 46), educational content not related to conferences (61%, 28 of 46), as well as program and departmental promotional content (67%, 31 of 46). Ten respondents reported using Twitter as an aid for the program's asynchronous curriculum for resident education, and 10 respondents reported they used Twitter to assist in online journal club discussions (TABLE [C]). Individual programs also used Twitter to post wellness content, interesting cases, electrocardiography and x-ray findings, social events within the university and around the city, and information for board review; to provide postshift feedback; to deliver an ultrasound curriculum; to offer recognition and awards; and to deliver announcements.

In response to the question about measures to protect the academic integrity and professionalism of the institution and department represented by the EM residency program's Twitter account, 38 of 46 respondents (83%) noted adherence to an institutional social media policy, and 34 of 46 respondents (74%) reported there are regulations on who is allowed to tweet (TABLE [D]). Other notable responses included programs posting a disclaimer on their

Twitter account and providing training for Twitter content managers.

The Twitter-based search yielded 109 ACGME-accredited EM residency programs with Twitter accounts (provided as online supplemental material). Of those, 81 programs (74%) had active accounts, as defined by a tweet posted within 60 days prior to the search date. A total of 44 programs (40%) had a medicolegal disclaimer in their "Twitter Bio" (the introductory section of their Twitter homepage). Twelve programs (11%) disclosed the position (eg, faculty, chief resident) of their content manager for their account, yet only 5 programs (5%) acknowledged the specific individual(s) responsible for posting tweets and administrating the account (ie, the content manager; FIGURE 2). Using the programs' number of Twitter followers as a surrogate for how influential the programs were in the social media domain, the 6 programs with the most followers (6% of the 109 programs) represented 21% of the aggregate Twitter follower pool. In other words, one-fifth of all people following EM residency programs' Twitter accounts followed those 6 programs, and the top 24 programs accounted for 51% of all Twitter followers (FIGURE 3).

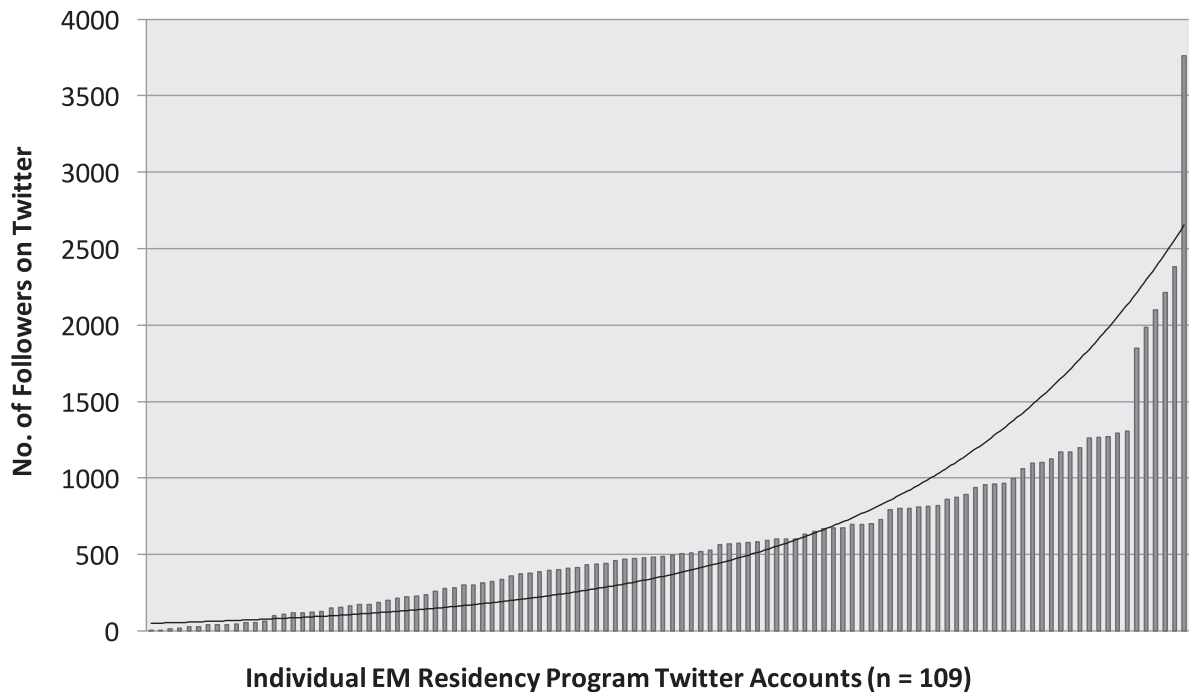


**FIGURE 2**  
Information in Emergency Medicine (EM) Residency Programs' "Twitter Bio" Data

**Discussion**

Our survey indicates that the majority of content managers for EM residency programs' Twitter

accounts are residents, and most programs do not publically disclose the identities or positions of their content managers. There is variability in how EM residency programs use Twitter (with both



**FIGURE 3**  
Number of Followers per Emergency Medicine (EM) Residency Program Twitter Account

educational and noneducational uses prevalent), and there is significant variance in the number of Twitter followers among EM residency training programs.

As the medical education community continues to embrace Twitter as an instructional tool,<sup>2,4-6,12-14</sup> it will benefit from strategies for successful implementation and overcoming possible inherent risks. Our study revealed several novel strategies for use of Twitter in EM programs, beyond the already established approaches of summarizing didactic pearls and promoting departmental accomplishments. The concept of delivering ultrasound, electrocardiography, or clinical findings curriculum raises HIPAA-related concerns, but, done appropriately, it has the potential to provide situated, contextualized learning through socialization. Similarly, privacy issues arise when delivering postshift feedback via Twitter; however, the details of these applications were beyond the scope of this study. As the medical education community continues to embrace technology, HIPAA-compliant team communication applications may offer a means to provide asynchronous educational dialogue within a program, while keeping these conversations from being shared with the larger social media world.

We were surprised to learn that almost 90% of programs do not publicly disclose the positions or identities of their content managers in their public Twitter profile. Identifying content managers is important for informing consumers about who provides the educational content and opinions posted. Finally, content managers deserve recognition for their service in advancing social media use in the academic community.

This study has limitations. Social desirability bias, which is inherent in self-reported surveys, may have resulted in underreporting of resident content managers and overreporting of adherence to social media policies. Survey respondents also may not have been fully aware of the policies and usages surrounding their program's use of Twitter (although they were encouraged to forward the study link to a knowledgeable party during study enrollment). The validity evidence for our survey is limited; it was not piloted with Twitter "experts" or individuals outside the EM community. There may be selection bias, both from nonresponses by programs not using Twitter and those with Twitter accounts. This may account for the discrepancy between our survey results, suggesting use of Twitter by 58% of EM programs, and the findings of our Twitter-based search, which yielded a prevalence of 65%.

Future research should use more rigorous metrics to determine which EM programs have the most influential Twitter accounts (ie, degree centrality, betweenness centrality, and closeness centrality),<sup>15,16</sup> and to qualitatively analyze these programs for "best

practices" to guide EM programs looking to develop, or improve, their use of social media in medical education. If further analysis reveals that the most influential Twitter accounts have residents as content managers, this could provide discourse for CORD to reassess its recommendations regarding the appropriateness of residents serving in that role. As our study was confined to EM programs, further work could investigate the use of Twitter or other social media platforms in residency education across specialties.

## Conclusion

Applications and practice patterns of Twitter use in EM residency programs are varied, and in large part, are inconsistent with recommendations issued by the EM program director community.

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