

## COMMENTARY

## Twitter Me This—Can Social Media Revolutionize Academic Medicine?

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(See the article by Mitchell et al in *Infect Control Hosp Epidemiol* 2017;38: 1271–1276)

Social media, or online social networks, have grown rapidly over the last 15–20 years; they are now pervasive, both in personal and professional arenas, including medicine.<sup>1</sup> In a 2010 study, 93.5% of medical students, 79.4% of residents, and 41.6% of practicing physicians reported using online social networks such as Facebook and Twitter.<sup>1</sup> Although multiple different social media platforms are available, Twitter has become a leading platform for microblogging and has gained significant attention with regard to how this platform can increase active engagement among health professionals and trainees.<sup>2–4</sup> In fact, Twitter has been considered an essential tool among physician leaders and has been used to promote online journal clubs and to share educational content and research. Tweets (ie, posts on Twitter) of manuscripts have been associated with increased citations and higher overall impact factors for journals.<sup>2–8</sup>

In 2013, the American College of Chest Physicians launched a Twitter hashtag (#pulmcc) to facilitate education and conversation (ie, Twitter chats) and to advocate specific topics surrounding pulmonary, critical care, and sleep medicine.<sup>6</sup> When a hashtag was used for Twitter chats during the annual CHEST conference, more than 1 million impressions via Twitter were recorded, further demonstrating its power and large networking potential within the medical community.<sup>6</sup> This potential is further highlighted in a Mayo Clinic study in which a Twitter account for the Cardiovascular department was established. The related tweets focused on medical content, journal articles, and conferences, and after 1 year, the account reached more than 61 million users.<sup>4</sup>

Healthcare societies can harness the power of Twitter during conferences by using hashtags to further awareness of education opportunities available and to reach greater audiences. Thus, societies can make their resources available to a broader network of colleagues, beyond the walls of individual institutions or conference halls, and can facilitate discussions of key topics and as well as personal meetings and new collaborations.<sup>2,3,6</sup>

Social network analysis is a well-established method of exploring social networks between individuals and organizations, and it can be utilized to assess virtual community networks that exist in social media platforms such as Twitter. The analysis methodology has already been developed for examining networks of medical societies, such as the American Medical Association, which has demonstrable potential for significant information dissemination via Twitter.<sup>8</sup>

Mitchell et al<sup>9</sup> assessed Twitter activity at 4 international infection control and infectious diseases conferences via a cross-sectional study design completed in 2016. The conferences chosen included the Infection Prevention Society (IPS) conference in the United Kingdom, IDWeek in the United States, the Federation of Infectious Societies/Hospital Infection Society (FIS/HIS) in the United Kingdom, and the Australian College for Infection Prevention and Control (ACIPC) in Australia. All tweets containing the official hashtags (eg, #IDWeek2016) of the conferences, both during and after the conference, were identified by an independent company. Data collected included the date of the tweet, tweet content, and user name from which the tweet originated. Retweets were also captured.

During data analysis, keywords were used to identify specific topic areas for all tweets and retweets. In addition, content contained within the tweet, such as a website link or picture, was also recorded. Finally, a social network analysis was also performed to explore the relationships among those engaging with Twitter for each conference.

More than 23,000 tweets were identified, and the ACIPC and IPS conferences had the highest average numbers of tweets per user. Approximately 35%–45% of tweets were retweeted at all conferences except IDWeek, which only had 1% retweets. IDWeek had the smallest overall Twitter utilization. For original tweets, having a web address embedded, being posted during the conference, or having content related to key topics (eg, *Clostridium difficile*) were significant factors in the odds of a tweet being retweeted.

Most tweets occurred during the conferences; however, official hashtags were used after conference completion

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at all conferences, and 1 tweet even used the IPS hashtag 59 days after the conference ended. Unfortunately, it was not possible to evaluate the total impressions per tweet in this analysis.

The social network analysis also demonstrated that communication via Twitter was not limited to back-and-forth conversations between specific individuals but did include communication with a broader array of unique users. The IPS conference had more unique users on Twitter than conference attendees, highlighting the external involvement of users in the conference who used the hashtag.

This study has several limitations. Acceptance of social media utilization professionally may differ among geographic locations, and the target audiences of each conference may differ in terms of healthcare providers such as physicians, students, nurses, and/or infection preventionists. The overall support for social media utilization by each conference organizer may also vary substantially. No demographic information is available to determine whether age or gender may contribute to these differences.

The study highlights the significant potential for improving active engagement in professional conferences via real-time tweets of conference content and sharing of external materials (eg, links to websites, articles, and more) with audiences beyond the live attendees, thereby facilitating extended conversations and increased recognition of the presenters, the conference, the societies, and the sciences of infection control and hospital epidemiology.

Social media, specifically Twitter, is increasingly embraced among medical professionals and respective medical societies. Utilization of Twitter has demonstrated vast arrays of possibilities in which professionals, societies, and institutions can engage in conferences, education, research, and networking that extend far beyond traditional social network boundaries. Thus, social media has the potential to revolutionize academic medicine and communication in the greater medical community. It is time to join the revolution—see you on twitter @ICHEJournal.

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