

# Review of Twitter for Infectious Diseases Clinicians: Useful or a Waste of Time?

Debra A. Goff,<sup>1</sup> Ravina Kullar,<sup>2</sup> and Jason G. Newland<sup>3</sup>

<sup>1</sup>Department of Pharmacy, The Ohio State University Wexner Medical Center, Columbus; <sup>2</sup>Clinical Scientific Director, Department of Medical Affairs, Cubist Pharmaceuticals, Lexington, Massachusetts; and <sup>3</sup>Department of Pediatrics, Division of Infectious Diseases, Children's Mercy Hospital-Kansas City, University of Missouri-Kansas City, Missouri

Twitter is a social networking service that has emerged as a valuable tool for healthcare professionals (HCPs). It is the only platform that allows one to connect, engage, learn, and educate oneself and others in real time on a global scale. HCPs are using social media tools to communicate, educate, and engage with their peers worldwide. Twitter allows HCPs to deliver easily accessible “real-time” clinical information on a global scale. Twitter has more than 500 million active users who generate more than 58 million tweets and 2.1 billion search queries every day. Here, we explain why Twitter is important, how and when an infectious diseases (ID) HCP should use Twitter, the impact it has in disseminating ID news, and its educational value. We also describe various tools within Twitter, such as Twitter Chat, that connect and bond HCPs on a specific topic. Twitter may help ID HCPs teach others about the global responsible use of antimicrobials in a world of escalating antimicrobial resistance.

**Keywords.** Twitter; social media; infectious diseases; education.

New and emerging diseases require infectious diseases (ID) healthcare professionals (HCPs) to stay up-to-date with their knowledge. In the past 15 years within the United States, ID HCPs saw the threat of smallpox and anthrax in 2001, monkeypox in 2008, H1N1 in 2009, Middle Eastern respiratory syndrome, and enterovirus D68 and Ebola in 2014 as examples of emerging diseases that require HCPs to have up-to-date and easily accessible knowledge to effectively manage patients. Traditionally, new information is acquired by reading medical journals and attending conferences. However, during an ID outbreak, acquiring information in real time is critical. As the world watched the tragedy of Ebola unfold, the world was also connecting with each

other on social media to discuss and learn about this disease in real time on Twitter [1].

Founded in 2006, Twitter is a free social networking service that has emerged as a valuable tool for HCPs. More than 75 000 HCPs worldwide, comprised of physicians, pharmacists, nurses, and healthcare consultants, send 152 000 tweets per day of which 31% are from the United States [2]. In fact, Twitter has grown by more than 500%; only 23 HCPs signed up for this social media site when it was launched in 2006. Today, Twitter has more than 500 million active users who generate more than 58 million tweets and 2.1 billion search queries per day [3]. Twitter has become a daily part of many HCPs' lives, allowing them to communicate real-time healthcare information and medical alerts to a large global audience, including those who are considered experts or thought leaders in a particular field, and to solicit feedback.

Twitter is changing the way people interact and learn. The “always-on” culture of today is accustomed to bite-sized, on-demand learning. This type of learning transitions to medical trainees who have grown up with computers, smartphones, iPads, and Wi-Fi. They think about problems and resolve them very differently from

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Correspondence: Debra A. Goff, PharmD, FCCP, Specialty Practice Pharmacist, Infectious Diseases, The Ohio State University Wexner Medical Center, Department of Pharmacy, 410 West 10th Ave, Rm 368 Doan Hall, Columbus, OH 43210 (debbie.goff@osumc.edu, twitter@idpharmd).

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those of previous generations [4]. The decades-long tradition of using textbooks to answer ID-related questions has been replaced by medical apps for smartphones and UpToDate, an on-line database [5]. There is also a need among HCPs to deliver easily accessible, real-time, pertinent information to peers around the world—Twitter can meet this need.

Here, we describe how Twitter can be used to educate and engage ID HCPs and be used as a worldwide communication network. We also discuss how Twitter can be easily integrated into the daily workflow of busy HCPs.

## GETTING STARTED ON TWITTER

Twitter allows users to write and read online posts known as “tweets” that are limited to 140 characters. Users follow other HCPs with similar interests, organizations, and medical journals. Users may tweet information from conferences in real time, share links to journal articles, and participate in live Twitter “chats” and journal clubs with HCPs interested in similar topics. Unlike Facebook, Twitter does not require users to mutually connect with one another. Twitter users “follow” others, and the recipient can choose whether or not to follow back. As displayed in Figure 1 [6], the dissemination potential of Twitter is what makes it so

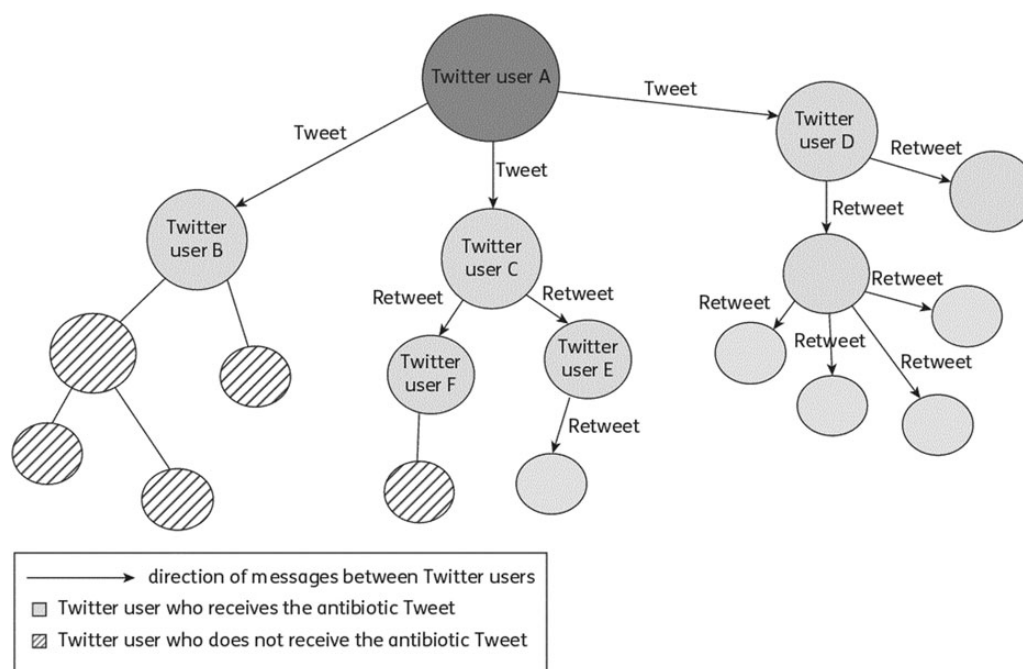
**Table 1. How to Get Started on Twitter**

1	Create a profile at <a href="http://www.twitter.com">www.twitter.com</a> .
2	Create a short user name; avoid underscores, dashes, and symbols.
3	Upload your photo so others can associate your name with your photo.
4	Write a short description of yourself. Identify yourself as a physician, pharmacist, nurse, or healthcare provider. Be creative.
5	Follow other healthcare providers who have interesting tweets.
6	Follow infectious diseases organizations.
7	Follow medical journals.
8	Send your first tweet.

valuable in terms of the number of people it is able to reach and impact.

Table 1 describes how to get started on Twitter. An in-depth description of how to get started on Twitter has been previously described [7,8]. We recommend HCPs always identify themselves on Twitter as a physician, pharmacist, nurse, or HCP. Tweets from HCPs hold a greater level of authenticity and trust [9].

Twitter’s primary access point is the company’s website, [www.twitter.com](http://www.twitter.com). Users must first go to this site to register and create their profile. There are additional ways to access Twitter in the



**Figure 1.** Dissemination Potential of Twitter. Following is the progression for sending a tweet: Twitter user A posts message (tweet) about antibiotics. All his/her followers receive the tweet. Twitter user B receives message from Twitter user A, reads it, and decides to do nothing else. Thus, the followers of Twitter user B do not receive the tweet from Twitter user A. Twitter user C receives message from Twitter user A, reads it, and decides to forward it (retweet) to his/her followers. Among the followers, Twitter user E retweets the message, but Twitter user F does not. Twitter user D receives message from Twitter user A, reads it, and retweets it to his/her followers. All the followers retweet the message to their own followers. Reproduced with permission from Oxford University Press [6].



**Figure 2.** Twitter symbols.

hospital or office and while on the go. Twitter makes official apps for all major smartphones that add functionality and features that appeal to different users. Popular apps on iOS (iPhone and iPad) include Tweetbot 3, Twitterific 5, and Echofon [10]; for Android phones, apps include Tweetcaster, Tweedle, and Hootsuite [11].

Before starting to tweet, users need to be familiar with Twitter symbols (Figure 2) and the terminology listed in Table 2. Harnessing the power of Twitter involves finding the right people to follow. New users will listen (read tweets) more than talk (posting tweets). A selected list of ID HCPs, organizations, and journals to follow on Twitter is provided in Table 3. This is not meant to be inclusive but provides a starting point for readers to follow selected experts. The following criteria for selecting individuals to follow were used: the person has more than 200 followers; the majority of their tweets are related to ID; and the person's Twitter biography identified them as a HCP.

After selecting people and organizations to follow, it's time to send a tweet. For example, a first tweet could be from an article in *Clinical Infectious Diseases*. While reading the article on a computer or smartphone, the reader finds the Twitter icon and clicks on it (Figure 3). This will launch Twitter and create a link to the article. A few compelling words are written about

the article and the first tweet is sent. When an interesting tweet is read, it may be retweeted by clicking on the retweet icon. One can search Twitter for specific ID topics or conferences using a hashtag (#; Table 4). For example, #Ebola will populate tweets that include the hashtag "Ebola." This is a good way to find experts who tweet on a particular topic. When someone interesting is found, a click on "follow" will ensure that their tweets appear in an individual's timeline of tweets. Symplur, a Twitter analytics website for healthcare hashtags, started the Healthcare Hashtag Project. They grouped more than 5000 disease and medical conference hashtags [12]. HCPs can register a hashtag for a disease (eg, #MRSA [methicillin-resistant *Staphylococcus aureus*]), a conference (eg, #idweek2014), or a healthcare term (eg, #SaveAbx [Save antibiotics]).

When viewing tweets with a link of particular interest, the link can be forwarded to one's email and the article can then be saved for future reference or printed out. Tweets can be selected as a favorite by clicking on the "star." This alerts the sender that someone liked their tweet and also allows the user to group all favorites in their personal Twitter account.

## WHEN TO TWEET

The most common reason HCPs avoid Twitter is the perceived lack of time to learn and perform a new activity. However, once the basics are understood, it takes very little time to post a tweet. We recommend that new users develop a daily Twitter routine such as reading and tweeting 5 to 10 minutes in the morning prior to patient care rounds or clinic. Another simple way to incorporate tweeting is to tweet from journals' tables of contents

**Table 2. Twitter Terminology**

Tweet	A post to Twitter. Tweets are limited to 140 characters and can contain text, hashtags, links, photos, and video.
Retweet (RT)	A tweet that is forwarded to your followers, similar to forwarding an email. Tweets created by experts in infectious diseases can be retweeted by nonexperts to other users. This feature is used to pass along valuable discoveries.
Hashtag (#)	A tag that is used to organize tweets and find topics. Think of it as a tool to find keywords. To tweet about antibiotics, type #antibiotics in the tweet. This allows your tweet to be found by any user who searches Twitter to find tweets about antibiotics
Trending	A term used to describe when a topic or hashtag is used so often that it is one of the most popular in the world. For example, #ebola was trending during the October 2014 outbreak.
Direct message (DM)	A private tweet to someone on Twitter. A direct message can be sent only if the person is following you on Twitter.
Bio	A short 160-character personal description that appears in your profile.
@username	How you are identified on Twitter. For example, Mary Smith is @marysmith.
Favorite	An indication that you like a specific tweet. This is done by tapping on the star; the author is notified that you liked his/her tweet. All of your "favorite" tweets can be located by clicking on the favorite link on your profile page.
Follow	Subscribing to a Twitter account is called "following." Anyone can follow or unfollow anyone else. To follow someone, tap on the follow button next to the user name.
Reach	A Twitter metric that describes the number of unique Twitter users who receive your tweets.
Exposure	A Twitter metric for the total number of times a tweet is delivered, including repeats.
Reach-to-exposure ratio	A measure of how diverse a Twitter audience is for a topic. A high R:E ratio (0.6–0.99) indicates a wider and more diverse group of people received tweets about a topic. A low ratio (0–0.19) means there were a lot of tweets around a keyword or hashtag but the tweets were not retweeted by followers.

**Table 3. Selected People, Journals, and Infectious Diseases Organizations to Follow on Twitter**

Name	Twitter Name	Twitter Profile	Number of Followers
<i>Individuals</i>			
Tom Frieden, MD	@DrFriedenCDC	CDC director, MD, and disease detective	69.2 K
Jason Gallagher, PharmD	@JGPharmD	ID pharmacist, author of <i>Antibiotics Simplified</i>	326
Debra Goff, PharmD	@idpharmd	ID pharmacist, global antimicrobial stewardship educator	660
Marc Mendelson, MD	@SouthAfricanASP	Co-chair South African Antibiotic Stewardship Programme, president of the Federation of Infectious Diseases Societies of Southern Africa	201
Jon Otter	@jonotter	Editor of <i>Journal of Hospital Infection</i>	901
Eli Perencevich, MD	@eliowa	ID epidemiologist and health services researcher	2231
Kevin Pho, MD	@kevinmd	Social media's leading physician	115.4 K
Laura Piddock	@LauraPiddock	Professor of microbiology, director of Antibiotic Action, chair in Public Engagement for British Society for Antimicrobial Chemotherapy	2172
Didier Pittet, MD	@DidierPittet	Director of Infection Control Programme and World Health Organization external lead	1368
Daniel Uslan, MD	@dan_uslan	Director of Antimicrobial Stewardship, associate director of Clinical Epidemiology & Infection Prevention for University of California–Los Angeles Health	492
<i>Pediatrics</i>			
Nick Bennett, MD	@peds_id_doc	Pediatric ID physician	3166
Natasha Burgert, MD	@DoctorNatasha	Pediatrician who uses social media to connect with her patients	11.1 K
Saul Hymes, MD	@IDDocHymes	Pediatric ID physician and social media editor for @PIDSociety	1259
Jason Newland, MD	@JasonGNewland	Pediatric ID physician dedicated to the appropriate use of antibiotics	531
Wendy Sue Swanson, MD	@SeattleMamaDoc	Pediatrician and executive director of Digital Health at Seattle Children's Hospital	25.8 K
<i>Journals</i>			
Infection Control & Hospital Epidemiology	@ICHEJournal		514
Lancet Infectious Diseases	@TheLancetInfDis		1692
Journal American Medical Association	@JAMA_current		106.2 K
New England Journal Medicine	@NEJM		236.6 K
<i>News</i>			
Infectious Diseases News	@InfectDisNews	Dedicated to breaking news, the latest research and clinical trial results, meeting coverage, and more	1553
Medscape HIV & ID	@MedscapeID	Provides breaking medical news	1801
National Institute of Allergy and Infectious Diseases News	@NIAIDNews		25.6 K
ASM Newsroom	@ASMnewsroom	Provides news from the American Society for Microbiology	2198
The Alliance for the Prudent Use of Antibiotics	@APUANews	Works globally to improve antibiotic access, policy, and clinical practice	943
Pediatric Infectious Diseases	@Peds_ID	Provides information and updates in pediatric ID	4600
<i>Organizations</i>			
National Foundation for Infectious Diseases	@NFIDvaccines	Dedicated to educating the public and healthcare professionals about ID	3056
CDC	@CDCFlu	Provides flu-related updates	323.5 K
CDC	@CDC_HIVAIDS	Division of HIV/AIDS Prevention	17.4 K
CDC	@cdchep	Division of Viral Hepatitis	24.8 K
World Health Organization	@WHO	United Nations' health agency	1.7 M
American Society of Microbiology	@ASMicrobiology	Official Twitter channel for American Society of Microbiology	9047
Society for Healthcare Epidemiology of America	@SHEA_Epi	Mission is to prevent and control healthcare-acquired infections	1686

Table 3 continued.

Name	Twitter Name	Twitter Profile	Number of Followers
British Society for Antimicrobial Chemotherapy	@BSACandJAC	Provides education on appropriate use of antimicrobials	542
Antibiotic Action	@TheUrgentNeed	UK global initiative to increase awareness and discover, research, and develop new antibiotics	2470
Infectious Diseases Society of America	@IDSAInfo	One-stop shop for ID information	4687
Associations for Professionals in Infection Control and Epidemiology	@APIC	Improves health by preventing the spread of infection in healthcare settings through education and implementation of best practices	3507
Pediatric Infectious Diseases Society	@PIDSociety	Promotes excellence in the diagnosis, management, and prevention of pediatric ID	245
Sharing Antimicrobial Reports for Pediatric Stewardship	@SHARPSgroup	Collaboration of children's hospitals working to improve antibiotic use	384
<i>Patient Advocacy</i>			
Peggy Lillis Foundation	@PeggyFund	Provides <i>Clostridium difficile</i> awareness, empowering advocates and shaping policy	728
C diff Foundation	@cdiffFoundation	Educates and advocates for <i>Clostridium difficile</i> infection prevention	1430
Save Antibiotics	@saveantibiotics	Pew Trust campaign to save antibiotics	18.6 K

Abbreviations: CDC, Centers for Disease Control and Prevention; HIV, human immunodeficiency virus; ID, infectious diseases.

received via email. Many HCPs outside the United States do not have free access to journals, so a tweet that provides a link to a compelling new article is a great way to educate peers and share information.

## USAGE OF TWITTER TO DISSEMINATE INFECTIOUS DISEASES NEWS

The rise of Twitter has created new possibilities for communicating with and learning from other HCPs as well as allowing for ID HCPs to use Twitter to recruit patients in clinical trials for chronic diseases or vaccine trials. Twitter has been referred to as “an essential tool for every physician leader” [13] and as being “crucial to the development of medicine today” [14]. Several researchers have shown a correlation between Twitter use and dissemination to others on ID topics. Mishori et al [15] used Topsy, a Twitter data aggregator [16], to determine the number of followers, the number of accounts a user is following, the number of tweets, and the information dissemination potential of 4 medical networks: the American Medical Association, American Academy of Family Physicians, American Academy of Pediatrics, and American College of Physicians. During the 3-month study period, each network had thousands of followers and an information dissemination potential ranging from 6.9 to 122 million people. This study displays the dissemination potential of Twitter in the healthcare network.

Dyar et al [6] were the first to investigate daily worldwide tweets and retweets of the word “antibiotic” over a 1-year period.

They found that Twitter users published 135 billion messages and 243 000 of those messages contained the word “antibiotic,” with 39 000 being retweets. The peak activity periods in antibiotic tweets occurred during the following periods: January 2013, following the recommendation of the UK chief medical officer (CMO) to incorporate antibiotic resistance in the national risk register; March 2013, after publication of the UK CMO’s annual medical report, which discussed the threat of resistant bacteria; March 2013, as a result of the US Food and Drug Administration’s statement on concerns about the safety profile of azithromycin; and September 2013, after the release of the Centers for Disease Control and Prevention’s (CDC’s) antimicrobial resistance threat report. Interestingly, the announcement released by the CMO reached more than 20 million users in a single day. This study portrays a valuable tool within Twitter, that is, the ability to search every tweet ever made via Twitter’s searchable database [17].

Further, since the 2009 H1N1 public health emergency, the Internet was cited as the most frequently used resource to learn more about the pandemic [18]. H1N1 actually marks the first global pandemic that has occurred since the age of Twitter. Chew and Eysenbach [19] performed an in-depth analysis of tweet content during the H1N1 pandemic. Between May 2009 and December 2009, the authors archived more than 2 million tweets containing the keywords or hashtags (#) “H1N1,” “swine flu,” and “swineflu.” From a random selection of 5395 tweets, 90.2% of them provided links when a reference was necessary, allowing others to confirm the credibility of the tweet. News





**Figure 3.** Screen shot from *Clinical Infectious Diseases* journal that includes Twitter link. While viewing an article online, the reader finds the “share” tab and clicks on the Twitter bird icon. This will automatically launch Twitter and insert a URL shortened link to the article. The user should add additional words to the tweet describing the article.

and information were found to be the most commonly tweeted H1N1-related material (52.6%). Only 4.5% of tweets were classified as possible misinformation or speculation. The authors also found that significant increases in H1N1-related tweet volume corresponded with H1N1 news events such as the World Health Organization’s pandemic level 6 announcement [20]. Other publications have demonstrated the utility of Twitter to disseminate information on H1N1 [21, 22] and improve H1N1 vaccination rates [23, 24]. Twitter has not only proven useful in H1N1 outbreaks but also in other outbreaks such as the 2011 *Legionella pneumophila* outbreak in Los Angeles, California [25].

Lastly, with the first 2 known cases of Americans working in West Africa being infected with Ebola on 28 July 2014, this virus dominated Twitter conversations. There were 200 000

**Table 4. Selected Infectious Diseases Twitter Hashtags (#)**

#ebola <sup>a</sup>	
#flu	
#enterovirus68	
#pneumonia	
#SaveAbx (save antibiotics)	
#AIDS	
#hscsm (healthcare social media)	healthcare social media
#antibiotic	

<sup>a</sup> Hashtags make words searchable on Twitter, allowing the user to observe a conversation about a particular disease.

tweets within 1 hour after the announcement of the first case of Ebola diagnosed in the United States. The number of tweets on Ebola exceeded 550 000 for a single day, surpassing the month’s averages. More than 10 million tweets mentioning the word “Ebola” were sent between September 16 and October 6 from 170 countries [26]. It is quite apparent that discussions about ID are a worldwide topic where Twitter has been a key resource in conversing with others about significant ID topics.

## EDUCATIONAL IMPACT OF TWITTER

Since Twitter’s inception, 583 articles on Twitter have been published, with 34% being published from January 2014 to November of 2014. A PubMed search of the phrase “Twitter medical education” yielded 56 unique articles. Surgeons and urologists appear to be early thought leaders in adapting Twitter for medical education, and the ID community can learn from these disciplines to enhance their use of Twitter. For instance, the International Urology Journal Club formed an online Twitter journal club. In the first 12 months, 189 users participated from 19 countries and 6 continents, tweeting a mean of 195 tweets per month and generating a mean reach or impressions of 130 832 per month [27]. This far exceeds the reach of traditional journal clubs. Club members concluded that there is unlimited scope for journal clubs in all specialties to follow their example. In addition, they were able to engage international HCPs; thereby, fostering international relationships. An international journal club would be valuable to ID in identifying and treating infections as every new and emerging ID is just a plane ride away.

Further, surgeons and urologists are using Twitter to amplify the content of scientific meetings. At the 2014 European Association of Urology meeting, Twitter impressions reached 7.35 million, with 5903 tweets sent by 797 participants [28]. Cochran and colleagues measured the impact of Twitter at the 2013 Academic Surgical Congress and concluded that Twitter greatly expanded the available audience for professional meetings and broadened the discussion venue for scholarly activity [29].

At the 2014 annual *Making a Difference in Infectious Diseases* conference, which is dedicated to antimicrobial stewardship for physicians and pharmacists, a workshop on Twitter for Infectious Diseases Healthcare Providers was held. The conference planners registered the hashtag #MADID14 with the Healthcare Hashtag Project [30]. Conference participants signed up for Twitter and then learned how to follow each other and tweet live from the conference. A total of 235 participants sent 1482 tweets with 346 153 impressions during the 3-day conference. Attendees were able to connect with thought leaders and, more importantly, maintain the connection through Twitter post-meeting.

Several institutions are using social media to engage with patients and other HCPs. For example, Mayo Clinic is wholly embracing social media as evidenced by the creation of their Center for Social Media. Their stated mission is to “lead the social media revolution in healthcare, contributing to health and well being for people everywhere” [31]. Having close to 1 million followers on Twitter, the 2014 Harris Poll EquiTrend survey named Mayo Clinic’s website the top health information website, ahead of WebMD [32].

In a recent survey of 3500 scientists from 95 countries, 13% routinely used Twitter to share and follow discussions on research-related issues relevant to their field [33]. Panahi et al [34] conducted a survey among physicians from around the world who were active users of social media to determine the potential benefits and challenges to using social media. The primary reasons for joining social media were staying connected with colleagues, reaching out and networking with the wider community, sharing knowledge, engaging in continued medical education, benchmarking, and branding. Twenty-two physicians stated that they used Twitter frequently, primarily due to the large clinical presence on Twitter. The physicians stated that since they were busy and had limited time to read journal articles, Twitter kept them up-to-date on what was going on in the field worldwide as they were able to quickly review peer-reviewed information. Twitter’s accessibility on mobile devices has allowed physicians to retrieve information with the touch of a finger, making it possible to review Twitter updates in real time when it is convenient for them. Further, the primary advantage of joining Twitter was the physicians’ ability to network with like-minded peers worldwide. As noted by the physicians, social media has allowed them to connect with other clinicians globally and work on projects, publish manuscript, and create joint podcasts.

## TWITTER CHATS

A highly valuable tool within Twitter that bonds and connects individuals on a specific topic is Twitter Chat. Twitter Chat is a discussion that takes place in real time at a pre-arranged time on a pre-arranged subject. Participants use a predetermined hashtag, which allows them to identify all of the relevant tweets. The

chat is open to all individuals who have a Twitter account, allowing diverse groups of people worldwide to ask questions, learn about a specific topic, or just observe a conversation. For ID HCPs, this venue can be used to educate the public regarding accurate information that they need to know in addition to educating HCPs.

On 8 October 2014, the CDC conducted a Twitter Chat that allowed individuals to ask questions of the CDC regarding Ebola after the first case was identified in the United States [35]. The CDC’s Get Smart About Antibiotics campaign hosted an antibiotic resistance-themed Twitter chat (#SaveAbx) during the 2014 campaign week. Several countries participated in the CDC’s 24-hour global antibiotic resistance-themed Twitter Chat (#AntibioticDay). These campaigns offered collaborative opportunities to promote appropriate antibiotic use to a diverse global audience. In addition, the CDC recommended using the Get Smart Twitter Chats as a way for hospitals to kick off and start antimicrobial stewardship programs [36]. Kaiser Permanente physicians led a 2014 Twitter Chat on flu (#fluchat), encouraging HCPs and patients to “chat” with experts on flu-related topics. Disseminating worldwide, Public Health England, part of their Antibiotic Guardian campaign, hosted the 2014 #AntibioticGuardian Twitter Chat that targeted patients, policy makers, prescribers, and HCPs. HCP experts led this chat and answered questions [37].

## POTENTIAL PITFALLS OF TWITTER

Twitter users need to be aware of potential pitfalls. First, patient confidentiality is of paramount importance [32]. Discussing unique stories on Twitter, while potentially educational, could violate Health Insurance Portability and Accountability Act standards if information that could identify a patient is shared. Furthermore, while Twitter allows clinicians to engage with their patients and families, giving specific medical advice via Twitter should be avoided as the clinician will likely be unable to share important information (only 140 characters per tweet).

Twitter, like all social media, is susceptible to misinformation. Clinicians must guard against spreading erroneous or questionable information while establishing trust with their audience. To combat lack of trust, it is important to follow reputable individuals by ensuring that the person has a photo and biography along with a profile. Further, only links and information that are from reliable sources should be retweeted. While Twitter can be a powerful tool to publicize research findings, users must not tweet embargoed articles. Additionally, although national meetings provide opportunities to tweet new research, these presentations have not been peer reviewed and the context of the tweets can be lost in 140 characters.

Finally, it is important to recognize that online behavior becomes part of a user’s permanent Internet identity. Whatever is

written on Twitter, stays on Twitter and is also indexed on Google, so comments about patients or employers are not recommended. In addition, an employer's policy for tweeting should be consulted. HCPs often include a statement in their Twitter biography stating "tweets are my own" to clarify that their tweets do not represent their place of employment.

## CONCLUSION

Twitter for HCPs is unique as it is the only platform that allows one to connect, engage, learn, and educate oneself and others in real time on a global scale. For the ID HCP, Twitter may help them teach global responsible use of antimicrobials in a world of escalating antimicrobial resistance.

## Note

**Potential conflicts of interest.** R. K. is employed by Cubist Pharmaceuticals and owns Cubist Pharmaceuticals stock; the views expressed here are her own and not necessarily those of Cubist Pharmaceuticals. All other authors report no potential conflicts.

All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Conflicts that the editors consider relevant to the content of the manuscript have been disclosed.

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