Open Forum Infectious Diseases

BRIEF REPORT

#Curbsiding: Potential Value and Patient Confidentiality Implications of Infectious Disease Clinician Peer Consultations via Social Media

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Background. Infectious Disease (ID) clinician's social media use for peer consultation is unstudied.

Methods. We reviewed ID peer consultation via Twitter over a 6-week period.

Results. We found this practice frequently solicited meaningful replies, but we identified potential for confidentiality breaches.

Conclusions. We offer recommendations for responsible discussion of clinical scenarios via social media.

Keywords. compliance; confidentiality; guidelines; privacy; social media.

Social media is increasingly important for professional collaboration and communication [1, 2]. Many Infectious Disease (ID) professionals use Twitter to invite conversation across the community, ranging from peer consultations to journal clubs to mutual emotional support during the pandemic [3]. Unfortunately, discussion of specific patients risks compromising patient privacy, and clinicians inadvertently sharing identifiable patient information via social media have faced serious consequences, including employment termination and medical board sanctions [4, 5]. Multiple medical societies have offered guidelines regarding professional use of social media, including exhortations to protect patient confidentiality [6–9].

Although much research on social media concerns the flow of medical (mis)information within the lay public or between clinicians and patients, interprofessional use of social media is relatively unstudied. We investigated how ID clinicians use the hashtag #IDTwitter for clinical consultation, seeking to answer 3 key questions. (1) For which topics do clinicians use #IDTwitter for peer clinical consultation? (2) How often are those consultation requests meaningfully answered? (3) To what degree do those consultation requests include specific clinical scenarios with potentially identifiable patient information?

METHODS

We reviewed English-language posts on www.twitter.com ("tweets") containing the #IDTwitter hashtag (words preceded by the # symbol identifying a tweet as related to a specific topic, used to aggregate conversation on a topic or draw the attention of a specific audience) over a 6-week period ending August 31, 2021. We included tweets from clinicians that we deemed examples of peer clinical practice consultation. We defined clinicians as Twitter users who, at the time of data collection, self-identified in their usernames or profiles as being a physician, pharmacist, clinical/medical scientist, or trainee in the above professions. We defined a tweet as an example of peer clinical practice consultation if it was on the topic of ID and related to managing a clinical scenario, interpreting medical literature, and/or requesting medical literature. We recorded whether we subjectively judged a question to have been meaningfully answered (eg, if a reply suggested a specific therapeutic or diagnostic plan), whether any respondent provided explicit justifications or reasoning, and whether any respondent provided relevant medical literature. We considered all replies to a tweet for this analysis, not only replies from ID clinicians, because in practice we routinely find input from our non-ID colleagues valuable.

Two authors (R.B. and N.C.-P.) independently reviewed all users and tweets for inclusion. Tweets in which both authors agreed met criteria were included in this study. When judging whether questions had been meaningfully answered, R.B. and N.C.-P. evaluated responses to each tweet and discussed them to reach consensus. Statistical analysis, including descriptive statistics, comparison of means by Student's *t*-test, and comparison of categorical variables by χ^2 and Fisher's exact test, were conducted in SPSS Statistics for Windows, Version 27.0. (IBM; Armonk, NY). The project used solely publicly available data and was exempt from institutional board review.

RESULTS

Content and Potential Value of Clinical Practice Consultation via #IDTwitter

We deemed 108 tweets with the #IDTwitter hashtag during the study period examples of peer clinical practice consultation.

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Sixty-six unique individuals authored the tweets, including 42 physicians and physician trainees, 21 pharmacists and pharmacist-trainees, and 3 clinical scientists. These users' median follower count was 697 (interquartile range, 179–1897); 3 had "verified" status, meaning Twitter had independently confirmed the author's identity.

The 108 tweets had a mean 4.0 (standard deviation [SD] = 4.8) replies from a mean 3.8 (SD = 4.6) colleagues. Ninety-one (84%) were consultations about a clinical scenario, 17 (16%) included a specific request for medical literature on a given topic, and 7 (6%) included a request for interpretation of a specific study. Twenty-four tweets (22%) contained polls, which received a mean 107 (SD = 104) votes.

We judged 77 (71%) questions to have been meaningfully answered; of these, 52 (68%) received responses including explicit justification or clinical reasoning and 27 (35%) included citations of supporting literature. After hand-coding the content of each question, we identified 10 common content categories accounting for 83% of all questions, shown in Figure 1. Questions were more likely to be meaningfully answered if they included polls (91.7% vs 65.5%; $P = .01$). Other factors, including the tweeting user's professional role and follower count, the content category of the tweet, and the number of likes and shares the tweet received, were not associated with receipt of a meaningful answer.

Patient Confidentiality Implications of Clinical Practice Consultation via #IDTwitter

Sixty-one users (92.4%) had their place of employment/practice either listed in their profile or immediately available via internet search of their username. Of these, 69% ($n = 42$) practiced in the United States, 5 in Canada, 3 each in Australia and the United Kingdom, 5 in other European nations, and 1 each in Mexico and South Africa.

A total 28 of 108 tweets (26%) referenced a specific patient's care, 1 of whom was the clinician themselves. In the other 27 instances, no patient identifiers were shared as defined in the United States Health Insurance Portability and Accountability Act of 1996 (HIPAA) [10]. However, other patient data was shared frequently, including nonidentifying (≤90 years old)

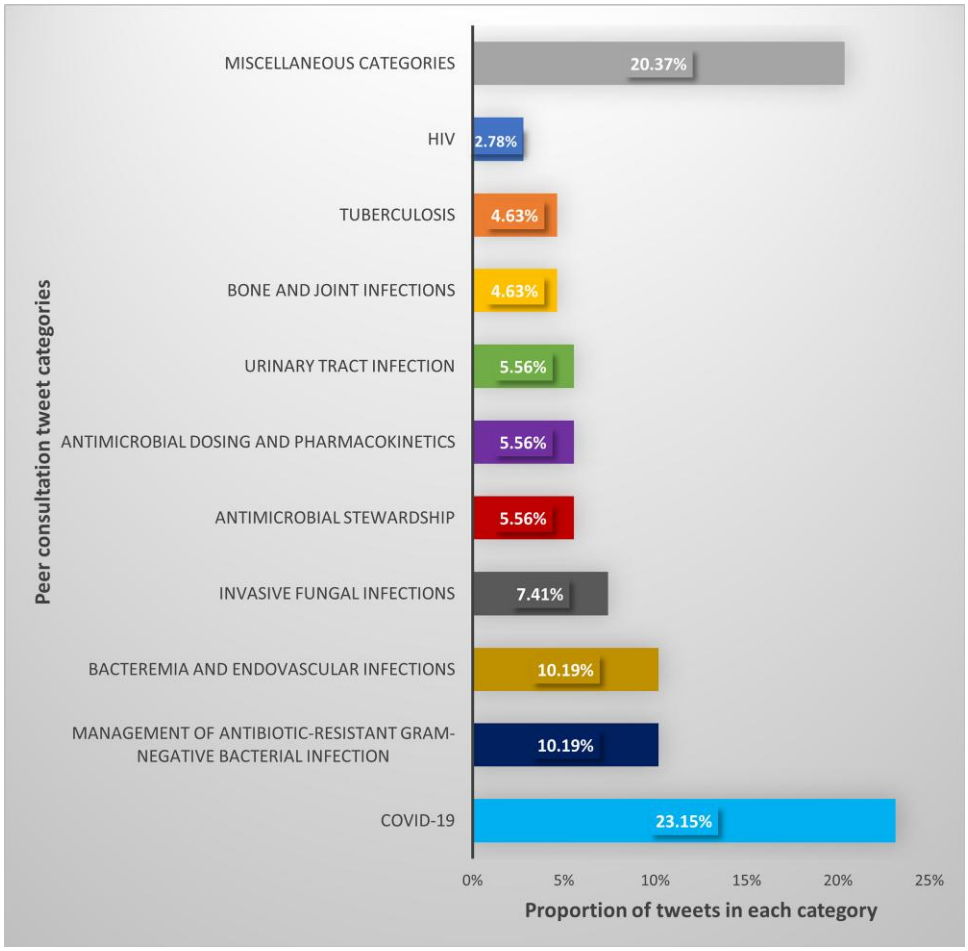

Figure 1. Topics of peer consultation requests made via social media (#IDTwitter). COVID-19, coronavirus disease 2019; HIV, human immunodeficiency virus.

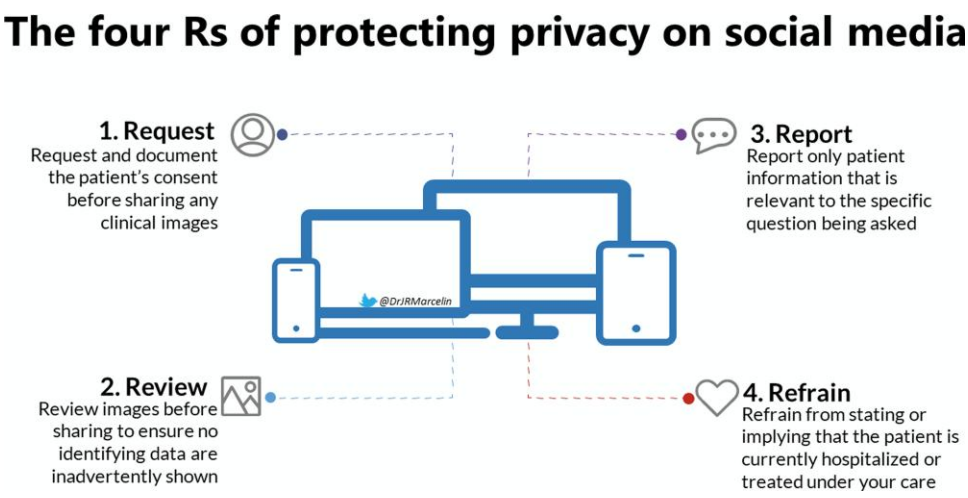

Figure 2. The 4 Rs of protecting privacy on social media.

exact ages of adults in 7 of 27 cases, gender in 20 of 27 cases, non-identifying radiographic or clinical images in 2 of 27 cases, and other potentially identifying data (weight >500 pounds, a specific number of rehospitalizations over a given time period) in 2 of 27 cases. In addition, in 7 of 27 cases specific laboratory values were provided, in 6 of 27 the specific location of infection was listed alongside the clinical inquiry, and in 19 of 27 (70%) the question stated or implied that the patient was currently under the clinician's care. Considering the totality of presented data, we judged that a person familiar with that patient and aware that they were being treated at the clinician's facility could have reasonably deduced the tweeted patient's identity in at least 5 instances.

DISCUSSION

We found that the ID professional community on Twitter frequently used this platform to seek peer expertise on challenging clinical scenarios and to find and interpret new ID literature. Questions clinicians pose to the ID community frequently received meaningful answers, often including explicit reasoning and/or references to relevant literature. Polls increased the likelihood of meaningful responses, and in some cases the poll responses alone constituted a meaningful answer.

We did not observe any instances of clinicians disclosing protected health information as defined by US law. However, disclosure of patient information not strictly relevant to the clinical question was common, and, in several cases, we judged the totality of information disclosed might reasonably be considered identifying. When sharing images, identifying information that may be inadvertently revealed may include unique tattoos, injuries, or personal items. In addition, screenshots from the medical record may include dates, addresses, or medical record numbers that could be used to identify the patient. Similarly, demographics and medical history irrelevant to the management decision (eg, gender, race, and exact age in most instances of ID peer consultation) may be inadvertently identifying and should be withheld [11]. For example, a tweet beginning with specific age and demographic information (eg, an 85-year-old African American male with coronary artery disease [CAD]) should be revised to limit unnecessary disclosures (eg, a patient in their 80s with CAD). Beyond adhering to local institutional social media policies, we propose the "four Rs" (see Figure 2) as key tenets of responsible use of social media for clinical consultation. These recommendations are compatible with those recently suggested by other ID specialists fluent in social media [2].

This study has several important limitations. The sample size was small and obtained from a 6-week period, excluding clinicians who were inactive during that timeframe. We only considered consultations from users who specifically identified as an ID physician, pharmacist, or other medical professional mentioned above in their Twitter bios; however, we did not independently verify each user's profession and affiliation, so it is possible that some users were not ID professionals. Most importantly, our ascertainment of whether tweet responses were meaningful was subjective based on inclusion of specific recommendations or literature, and we did not verify with the questioners whether they agreed the responses they received were meaningful. For comparison, we would judge a small portion of consultations made over the Emerging Infections Network (EIN) listserv to contain identifying patient information, a larger minority to contain patient information that might reasonably be considered identifying in aggregate, and almost all such consultations to receive meaningful answers. That said, EIN is an invitation-only forum of ID professionals

whose posts are not visible to the general public, and so discussions via EIN carry a fundamentally different expectation of privacy versus discussions on a public social media platform.

CONCLUSIONS

Social media remains a valuable forum for interdisciplinary discussion and has been embraced by the #IDTwitter community for peer consultation on challenging cases. Including polls within tweets is particularly effective for soliciting useful input. However, peer consultation requires attention from clinicians to ensure that patient identity is not inadvertently disclosed.

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