COMMENTARY

THE AMERICAN JOURNAL of MEDICINE®

Case Reports in the Age of Twitter

As doctors, we share the stories of our patients. Medical students trade stories as soon as they learn the language of medicine. Whether casual anecdotes shared among colleagues, formal case reports published in journals, or novelistic retelling in memoir form, this sharing has a long and rich history. In the past decade, case reports have found a new home on social media, most notably Twitter. Sharing cases on this public and interactive platform raises issues that were inconsequential in the past and we suggest that the harms of sharing cases in this way are many and the benefits few.

The desire to discuss cases seems almost reflexive. As any long-suffering partner of a medical student can attest, soon after first meeting patients, students begin discussing their cases at any opportunity. As one matures into her or his career and becomes responsible for the health of her or his patients, the sharing becomes more productive. The anecdotes help us learn. We learn atypical presentations, uncommon reactions to medications, and unexpected responses to therapy. The stories keep us humble, reminding us that medicine is absurdly complex, that outcomes are often unpredictable, and that our best judgment quite often is wrong.

Case reports in journals have served our field by describing the presentations of rare or newly described diseases. It was case reports of 5 gay men with *Pneumocystis jirovecii* pneumonia that began the research leading to identification of human immunodeficiency virus/AIDS and its transmission.[1] Then there are the authors, from Oliver Sacks to Henry Marsh, who have used poetic descriptions of cases to enhance our understanding not only of medicine and our practice, but also of the experience of illness, loss, and death.

ENTER TWITTER

Those who believe that Twitter exists only as a forum to hurl invectives across the political divide might be surprised to learn that Twitter hosts a rich medical community. Despite (or maybe because of) the 280-character limit, there are insightful critical appraisals of the medical literature, debates about conflict of interest, and reflections on burnout. There are authors who post "tweetorials," condensed lectures composed of linked tweets. What many find most enriching about #medtwitter (as it is called) is the democratization of medical dialogue. The best conversations include doctors in academic medicine and private practice, nonmedical academics, students, residents, patients, and patient advocates. Although some complain that Twitter is a wasteland, most celebrate the egalitarianism of the forum. It is also the case that the number of people who follow popular and effective members of #medtwitter surpasses the readership of our most cited journals.

Given our field's history, it is not surprising that patient stories appear on Twitter. The most detailed Twitter cases recount histories, describe physical examinations, and often present data: electrocardiograms, procedure videos, and radiology images. Patients often consent to have their stories shared and many people benefit. Doctors and trainees read interesting cases in a setting that enables asynchronous discussion. Patients gain insight into how doctors think. The posting physician might get new insights into the case and the patient, in turn, might benefit.

Yet, there are harms to case sharing on Twitter. First there is the issue of patient privacy. Many thoughtful guidelines and opinion pieces published regarding social media use among physicians have stressed the need to respect patient privacy.[2–4] Too often, however, the consent to share a patient's case on Twitter is either presumed or amounts to, "Do you mind if I tweet this out?" Given a patient's intrinsic desire to please her or his physician, it is too easy for someone to consent. In this "Internet is forever" world, patient consent should be as informed and considered as it is for clinical trials. Even when doctors disguise demographics, other information, such as the time and place of

Funding: None.

Conflict of Interest: Dr Prasad reports receiving royalties from his book *Ending Medical Reversal*; has been funded by the Laura and John Arnold Foundation; has received honoraria for grand rounds/lectures from several universities, medical centers, nonprofit groups, and professional societies; and is a writer for Medscape. All other authors have no conflicts to report.

Authorship: All authors had access to the data and a role in writing this manuscript.

Requests for reprints should be addressed to Adam Cifu, MD, University of Chicago, 5841 S. Maryland Ave, MC 3051, Chicago, IL 60637.

E-mail address: adamcifu@uchicago.edu

0002-9343/© 2019 Elsevier Inc. All rights reserved.
https://doi.org/10.1016/j.amjmed.2019.03.044

the patient encounter (last week in the emergency department) or the unusual characteristics of a presentation (hiccups that would not stop), can identify the patient.

Besides the public persistence of cases on Twitter, two other issues demand careful consideration during the consent process. Patients unfamiliar with Twitter may not realize how far a tweet can travel. Interesting cases with unusual images can reach hundreds of thousands of people. Also, no one can control the comments on Twitter. When a case is shared between colleagues, the patient has no chance of hearing what is said. On Twitter, insensitive comments are nearly unavoidable.

Beyond issues of consent and privacy, anecdotal cases posted on social media promote non-evidence-based practice. Although a case shared by a doctor with a colleague might affect the practice of a single physician, a case shared on Twitter might be viewed by and affect the practice of thousands of physicians. The cases that become popular on social media are often those in which an uncommon diagnosis presents like a common one. These cases are likely to stimulate overtesting, a tendency often supported by the vocal "rare disease" community that exists on #medtwitter.

Sharing cases may alter physicians' evaluation of patients in another way as well. In the pre-Twitter days, doctors had to worry if their actions were being influenced unduly by the last patient they saw (immediacy bias). Now it is any patient that anyone saw on Twitter who might affect perceived pretest probabilities. This is especially true when the case is shared by a "tweeting" physician with a reputation of superior clinical acumen. Medicine practiced based on the last anecdote you heard is problematic and unsustainable. Doctors should be aware of takotsubo cardiomyopathy, but some on Twitter seem singularly obsessed with the diagnosis.

Last, the continual posting of patient stories undermines the physician-patient relationship. Despite avoiding any vaguely identifiable cases on Twitter, we have had patients ask, "You are not going to tweet about this are you?" The mere fact that some doctors frequently share cases may lead patients who are on Twitter to be more reticent to share closely guarded information.

Twitter is a tool for communication. And just as the same story that is rich and meaningful when shared between physicians in the doctors' lounge can be brash and impolite when overheard in the elevator, the broad reach and enormous audience of Twitter means that different standards of decorum must be applied. Although we embrace this technology and try, sometimes too often, to use it as a tool for better, more honest, far-reaching communication, we have seen stories that make us speak in private. "Do you believe he is posting those films? Isn't that identifiable? Did she get consent?" These are concerns we fear our patients have and believe are already affecting our physician-patient relationships.

Adam S. Cifu, MD[a]
Andrae L. Vandross, MD[b]
Vinay Prasad, MD, MPH[c,d]
[a]*University of Chicago, Chicago, Ill*
[b]*Ronald Reagan UCLA Medical Center, Los Angeles, Calif*
[c]*Division of Hematology and Medical Oncology, Knight Cancer Institute, Portland, Ore*
[d]*Department of Public Health and Preventive Medicine, Oregon Health and Science University, Portland, Ore*

References

1. Centers for Disease Control and Prevention. *Pneumocystis pneumonia—Los Angeles. 1981. MMWR Morb Mortal Wkly Rep* 1996;45(34):729–33.
2. American Medical Association. Professionalism in the use of social media. Available at: https://www.ama-assn.org/delivering-care/ethics/professionalism-use-social-media. Accessed February 1, 2019.
3. Northwestern Medicine. Social media guidelines. Available at: https://www.feinberg.northwestern.edu/communications/guidelines/social-media.html. Accessed February 1, 2019.
4. Gardner JM, Allen TC. Keep calm and tweet on: legal and ethical considerations for pathologists using social media. *Arch Pathol Lab Med* 2019;143(1):75–80.