

## EDITOR'S PERSPECTIVE

# Academic Cardiology and Social Media

## Navigating the Wisdom and Madness of the Crowd

Robert W. Yeh, MD, MSc

It was a sleepy Thursday morning at the Transcatheter Cardiovascular Therapeutics conference, typical for the final morning of a conference; exhibitor booths had been disassembled, and most attendees had long since departed. But for one Late Breaking Clinical Trial session that remained, promising the presentation of a 200-patient trial that was relatively unknown in the months preceding the meeting, the size of the live audience was hardly relevant. Within 72 hours of the presentation, the #ORBITA trial became Twitter's most discussed cardiology trial perhaps ever, illustrating the potential of social media to disseminate, amplify, refine, and distort the products of academic cardiology. If cardiology's Fifth Estate was not born on that day, it felt at the least as if it had come of age, newly armed with twice the allowable character count and the ability to tag an ever increasing number of individuals on a tweet. #CardioTwitter had gone viral.

Since then, academic discourse on Twitter has thrived. A stream of study results, visuals, and interpretations can be counted on to run alongside every major academic meeting, creating a bridge between conference attendees and those following along digitally. In many ways, what occurs in this virtual sphere is more than a mere reflection of what is occurring in its physical counterpart. As an academic platform, social media has created an offering that is distinct from, and at times superior to, traditional mechanisms by which cardiologists disseminate, consume, critique, and integrate research into their practices. However, these interactions carry their own unique challenges and risks, many of which participants may discover by trial and error against a background of evolving norms.

### DEMOCRATIZATION OF VOICES

Perhaps the most notable difference between discussions at conferences at major meetings and those occurring on social media have been the number of individuals who have been given a public voice. Like many fields in medicine, cardiology has traditionally had an established hierarchy. In contrast, the age of #CardioTwitter is skewed toward a more junior group, with a more equitable balance of sexes than that which typically characterizes speaker lineups and panels at cardiology conferences. In perhaps no other forum can trainees routinely engage in peer-to-peer dialogue with principal investigators of major trials, statistical luminaries, and affected patients on equal footing. This democratization remains one of Twitter's most compelling attributes, encouraging participation and conversation in a manner that a lonely microphone standing in a large plenary hall never has. Yet, this democratization may also be its most vulnerable, a product less of any intrinsic bias toward equity of the medium, and more due to the initial slow adoption of social media by cardiology's ivory tower and established leadership. Although the growing social media presence of well-known cardiologists on Twitter may provide

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greater opportunities for meaningful engagement with leaders in the field, it also could eventually lead to the reestablishment of old hierarchies.

## PEER REVIEW BY THE CROWD

Social media's great strength over traditional mechanisms of research dissemination is its ability to reach a targeted and receptive audience instantaneously and further draw on that audience to create a stream of related content, in the form of real-time commentary, peer review, links to prior publications, and relevant personal anecdotes. Whereas the presentation and publication of any given research study relies heavily on the contributions of a few authors refined by a handful of peer reviewers and editors, the postpublication critical examination of important research on social media can truly leverage the wisdom of the crowd. #ORBITA's dissection on social media was surgical—the prerandomization medication regimen was questioned, the design scrutinized, and entire threads were devoted to arcane issues, such as whether ANCOVA would have been a preferred analytic method over traditional T testing. This type of postpublication scrutiny has become standard: the ODYSSEY trial, VEST trial, and most recently the prepublishment changes to the ISCHEMIA trial primary end point have all received similar treatment. Conversations, ranging from the prediction of PCSK9 inhibitor trial results before they are released, to debates regarding the potential for adverse consequences of the Hospital Readmissions Reductions Program (summarized by Thompson in this issue of *Circulation: Cardiovascular Quality and Outcomes*),<sup>1</sup> to analogies relating the obscure epidemiological concept of immortal time bias to the consumption of Cheetos, often make research ideas and concepts more accessible to a broader audience of relevant stakeholders.

## DEBATE, DISSENT, AND COMMUNITY BUILDING

But what is the quality of this exchange? Paradoxically, back and forth interactions between opposing viewpoints in 280 characters may allow for deeper interactions in ways less well facilitated by brief panel discussions or Letters to the Editor in journals. Statements not supported by evidence are quickly challenged, and cited evidence is often quickly refuted. By tapping into the knowledge banks of an unquantifiable number of individuals with diverse areas of expertise, Twitter, at its best, combines the strengths of the world's largest distributed data network with its most powerful intelligence machines. What is more: Twitter debates often pull no punches—a far cry from the uncontroversial and mutually congratulatory interactions that pervade most

public academic interactions. In capturing not only the substance of debate, but its humanity, the platform helps to give academic content an emotional salience distinct from more static and less-interactive media.

In addition, acts of community building have become routine among academic cardiologists engaged in social media. Voicing support for another's position, experiences, and research via likes and retweets, slogans, and selfies has built social bridges across the globe in a way that could support greater academic collaboration in the future. The #ilooklikeacardiologist, for instance, has been a popular hashtag that promotes greater diversity and inclusiveness in medicine.

It is worth considering whether the normative nature of community building will lead to an environment less conducive to the acceptance of public dissent. Hints of this tension have begun to emerge already. For example, although the use of the #RadialFirst hashtag encouraging greater use of transradial PCI has rightfully gained significant traction, one wonders if the majority of US operators still predominantly using transfemoral PCI might feel alienated from participating in discussions against such a strong tide. Individuals who have raised concerns about the risks to making all clinical trial data public have quickly been shouted down have quickly been shouted down. Should oppositional voices feel unwelcomed by a dominant viewpoint or the boundaries of digital civility become narrower, the academic value of social media could be diminished.

## QUO VADIS, INDUSTRY?

Industry interactions with academic cardiologists on social media have thus far been careful, internally vetted to maintain compliance with federal and company-specific regulations. Device and pharma employees represent a large and often silent group on Twitter, but industry physicians are increasingly finding a voice, leveraging their positions as members of the physician community and key opinion leaders. These interactions will necessarily be viewed with some amount of skepticism by many in the academic physician community and be targeted by a particularly influential anti-industry movement on social media. It will behoove industry to continue to err on the side of conservatism as it navigates a potentially distrustful audience.

Nevertheless, for industry, the potential stakes rooted in social media are high. Lists of Digital Opinion Leaders have been created, and hashtags designed to support therapies have been promoted. Digital influence, unlike its analog counterpart, is easily quantified through measurables, such as followers, likes and retweets. For now, no clear standards exist to guide interaction between industry and the academic community. That these interactions occur in a public sphere rather than

in proverbial smoke-filled rooms should perhaps serve as additional motivation for the academic community to create an environment that is open to industry participation.

## ARBITERS OF DIGITAL TRUTH

In light of the strengths and limitations of social media, how can the academically minded better use these platforms to teach and learn? First, on a medium in which the audience may have only a few seconds to devote to any given tweet or post, the manner in which content is delivered must optimize the balance among substance, readability, and pithiness. Succinct visual presentations of research, can be particularly effective and have been increasingly used by individuals and journals, including this one.

Next, because the validity of content and the accuracy of evidence interpretation may not be easily determined, the arbiter of truth on social media may rely on the emergence of more limited number of trustworthy and credible voices (ie, filters). New research has shown that false information may spread more rapidly on social media than the truth, driven primarily by human activity (rather than automated bot or other algorithms).<sup>2</sup> In cardiology, as in other fields, the rapidity of spread of information on social media may be governed by factors unrelated to its validity. The mandated brevity of communication lends itself more to simplicity rather than accuracy, to novelty rather than to nuance. Democratization of voice can perversely lead an insidious relativism, a discounting of experience, and a form of demagoguery driven by the popularity of sound bites, sarcasm, and snark (the post-#ORBITA commentary from many who have never evaluated a patient with chest pain was remarkable in its dismissiveness of the many who do). Who will be the arbiters of truth?

Because effective communication on social media may require nonoverlapping skillsets compared with more traditional formats, the most important voices may be a distinct group from those headlining sessions at academic conferences or the bylines of journal editorials. We at @CircOutcomes believe this ultimately will be a good thing. There remains an opportunity for thoughtful individuals to differentiate themselves as aggregators and interpret-

ers of new research in a manner that is accurate, timely, and accessible. Using this model, a handful of individuals from a wide variety of backgrounds have gained significant followings in the #CardioTwitter community, having used the platform to present clear and candid voices, grounded in personal and professional experience.

Social media, and Twitter in particular, has given a voice for academically minded cardiologists of all ranks, created a platform for instantaneous research dissemination and real-time peer review, and increased the connectedness between the research-creating and research-consuming communities. However, it is susceptible to many of the risks common to bringing groups of individuals together to discuss ideas. In the end, how we choose to navigate the changing landscape of social media will determine the extent to which cardiologists benefit from the wisdom or are derailed by the madness of the crowd.

## ARTICLE INFORMATION

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