[MUSIC PLAYING]

JAY WIDMER: Howdy. I'm Jay Widmer, one of the interventional cardiology fellows here at Mayo Clinic Rochester, here to give an overview of a recent grand rounds we gave regarding social media and academic medicine. What are the data? And you can't utter that phrase without thinking of one of our longtime mentors, Dr. Gersh. And so I hope to give some overview and some insight into [INAUDIBLE] some of the data in using social media in cardiovascular academic medicine. You could certainly use that hashtag, or #MayoCVGR, if you so choose to tweet about this presentation.

I have no financial disclosures, and neither does anybody in the company or in the committee here. For our objectives today, we're going to understand the current social media tools and their use. We're going to look at current Mayo Clinic projects through using social media for health care research. We'll review some of the current publications regarding social media and cardiovascular academic medicine, and then we'll talk about some of the novel ways we might be able to integrate some of these research tools and social media into our own academic medical experience.

Some of the current uses and examples of social media tools in academic medicine-- I was struck by my own circle of social media colleagues, when Sharon Hayes tweeted this out about an academician's view on academic medical Twitter use. Certainly, I was looking for great insight and great data and great reasons to support the use, but unfortunately, this was filled not so much with data, but more anecdotal evidence and more personal bias. This is still a great read, and I do recommend it. However, we need to move from the level of anecdotal evidence up to a higher level so that we might provide some value and show our colleagues the value of social media in academic medicine.

Currently, the percentage of the United States population with a social media profile is almost 80%, and certainly rising. This has gone up over threefold over the last 10 years or so, and you have to know that of the time spent online, four and 1/2 hours per day per individual, over half of that is spent in social media. And if you have a colleague, a patient, a friend, who's over 65, over 50% of them have some type of social media profile.

Where are people going in terms of social media? Well, certainly, most people thought that the demise of Facebook was greatly exaggerated, and that is the case. Of internet users, 72% of them have a Facebook account, far surpassing one of the second place finishers, Twitter, which only has 23% of internet users, which currently subscribe and tweet.

Again, many people thought that Facebook is dead, but of those who use Facebook, over 90% log in at least once weekly. Certainly, my patients, as I try to invoke a healthy lifestyle, it's very difficult to get them to do some of those things that I ask them to do once weekly. This is something we need to pay attention to and, hopefully, look toward for our own practices.

Certainly, patients are very comfortable with online diagnostics. People are looking online to be diagnosed, treated, and unfortunately, not very many people seek confirmation in person from a diagnostician. What is more, not only are patients more comfortable going online and looking for answers for their health care problems, but they're comfortable with us as providers going online and looking for different ways to prevent, treat, diagnose their maladies. Over 50% of those were comfortable with physicians going to online communities in order to improve their care. So I think that's something we can take to heart and know that this is certainly going to be a societal norm and acceptable.

Unfortunately, fellows' attitudes here at Mayo Clinic CV aren't as receptive toward social media. Most of our fellows do not feel connected with their cardiovascular colleagues, and most people do not use social media to gain insights in the cardiovascular community. Furthermore, most CV fellows here feel that this does not aid in their productivity and probably hampers their work efficiency.

This is unfortunate with all of the active voices in social media within the cardiovascular department here. So certainly, we wanted to take a look at our own institution, and even abroad, who is tweeting outside of Mayo Clinic in terms of cardiovascular academic medicine. And you see a good splay of some strong accounts here, tweeting anywhere from weekly to multiple times per day, having hundreds to even thousands of followers. So I think it's important to know that this is emerging. This is across the country and certainly something that folks will be looking at in training and beyond.

What are some of the current health or social media projects at Mayo Clinic? Would be remiss if I did not mention the excellent work that the SCAD work is doing with online trial analysis and trial recruitment, and we're looking forward to seeing their results in terms of online support communities, certainly an exciting project and a model for many to follow. We also have our own CV Twitter account here, and we were able to publish some of our recent experiences in cyber and social networking earlier this year.

And we looked at the first year and the experience of an academic Twitter account. We saw that as time, our followers certainly increased, and now we have nearly 4,000 followers as of this taping. We saw that there's a good mix of male and female followers, and almost a third are outside of the United States.

When we look at the engagements or how often people are clicking and sharing some of the things that we're posting, a few things stuck out. One, if we have organic material that is tweeted out by our account, this does much better in terms of reach and engagement than that material which we retweet or modify the tweet and send it out. Furthermore, while we have very popular publications, and we like to tweet about some of the things that are published here and some of the bigger papers published in cardiovascular diseases worldwide, certainly, if we publish-- if we tweet about an adjunct to the publication, such as a video commentary and editorial, that does much better in terms of engagement. And finally, no matter if it's a national conference, such as AHA or ACC or even an internal conference, such as this Mayo CV Grand Rounds, we have about the same engagement across the board.

So I think these are important points to take, and we also looked at some of the tweetations, not a citation, but a tweetations that we looked at with some of our own publications. We have two of the most popular ones here, each which had over one million-- a reach of over one million when we first tweeted about them. One is a meta analysis on digital health and cardiovascular disease and Mayo Clinic proceedings, and then the next one would be regarding the genetics of SCAD.

One can certainly look at this from an analytics perspective, but this is also available any time you PubMed something. You can look at the alt metric, that interesting, colorful circle that's next to the article. And this will tell you what kind of buzz is being generated online and how many people are sharing and talking about some of these articles. Certainly, an alt metric score in the triple digits is going to have a very significant impact on the field. This particular paper was picked up by the *Wall Street Journal* and certainly had some accompanying interviews with it.

Gunther Eysenbach postulated about this back in 2011, and he said the tweetations might actually be more important than citations for journal publications. Certainly, he saw that tweetations predicted citations, and I think this is same something publishers and authors should be looking at as we demonstrate and debut some of the great work that we're publishing. One of the other projects that we're working on is a CV hashtag ontology with Symplur, and this simply codifies the language that we use in cardiology to communicate online in the social media world.

I think this is important, because many people don't understand exactly how they should be communicating or looking things up online, and hopefully, this will help to reduce confusion and create some ease for interacting on a cardiovascular social media platform. Certainly, this has been adopted by the ACC, and we certainly look forward to working with them in the future on this. This debuted at ACC in 2016 and had quite a large following. You could see some of the trending hashtags that were seen during one of the snapshots of ACC, and you see some common terms-- stroke, NOAC, STEMI, all the way down to geriatric cardiology-- certainly, an exciting project.

Well, what does the current landscape look like in terms of actual data for social media use and cardiovascular disease? Well, it's pretty barren. Fortunately, we have a wide open road, a great day, nice car, the windows down, a great playlist. So let's forge ahead and really, really make some strides with research.

One of the first trials that looked at this, the Intention to Tweet trial, appropriately named, "A Look at Social Media's Impact on Publications and Circulation," debuted at AHA in 2014, randomized almost 300 articles one to one to social media exposure versus none. The social media exposure was only one tweet or one Facebook post, while no social media exposure still had some of the elements of social media sharing that you could use at the bottom of the page, so not a stellar protocol.

This trial, to no surprise, turned out to be neutral and found no benefit to social media for page downloads or page visits. Well, luckily, we've worked very closely with Dr. Gerber and Mayo Clinic Proceedings and created our own version of this trial. We looked at three months worth of articles, two months per article, and randomized them in a one to one fashion for social media exposure versus none. No social media exposure means no ability to easily share these via social media, and the social media exposure has multiple platforms, multiple images, multiple times, and really, a more comprehensive digital marketing strategy. We look forward to sharing some of these results very soon.

Recently, the European Society of Cardiology-- there was an excellent effort to try to identify all the cardiologists on Twitter. Unfortunately, this group only found about 100 cardiologists on Twitter. Fortunately, most of them were in the United States. However, by my count here at Mayo, we have over 50 tweeting cardiologists, so I don't know how valid some of these data are, but certainly, a project worth following up on. Finally, we saw in JAMA Cardiology earlier this year, Twitter use is a potential data source and an accompanying editorial by Dr. Turakhia and Harrington.

Certainly, this alt metrics score was quite high within one week and actually ended up being one of the top five research outputs by alt metric within that week. I think this article was interesting, and it showed how we can use cardiology and public health and social media all together. However, this group looked at five terms-- diabetes, hypertension, myocardial infarction, cardiac arrest, and heart failure-- and looked to see how many times these were tweeted about and mentioned. Some of these data are probably helpful, but it would be against some of our own experience to note that myocardial infarction was mentioned over 30 times more than heart failure.

When you look at some of the things that were tweeted about, certainly, there were some patient to physician, patient to patient, and physician to physician interaction, but there were also some things as I might have a myocardial infarction, if my boss finds out I'm late. So separating the wheat from the chaff here in terms of what we can use from these data is going to be important and certainly something Drs. Turakhia and Harrington mentioned in their editorial.

One group that is doing this quite well is the oncologists. They're working with Symplur to identify who is tweeting, what are the subjects that are being tweeted about, the patient to physician interactions. They're working with Symplur quite nicely and having a great literature base in terms of social media use and the value added to those in academic oncology. This is certainly a project that should be emulated from our perspective in cardiology.

What are some of the things we're doing at Mayo for health care social media research? Well, we're starting to work with Symplur to look at the ACC engagement over the past three, four, or five years, and certainly, we see over an eight-fold increase in the online engagement up to ACC 2016. , Interestingly over 100 patients participated online in ACC '16, and we see a good mix of similarities and differences in what patients and what physicians are tweeting about with regard to ACC '16. We'll have to look into these closely and look forward to working with Symplur on this.

Certainly, a network analysis shows how some of the bigger industry standards, such as American College of Cardiology, New England Journal of Medicine are interacting with those also at the conference. Some large academic centers, such as Intermountain Medical Center, our own CV Twitter account, and some big individuals in cardiovascular disease-- Kevin Campbell, Pascal Meier of the BMJ, John Mandrola, John Erwin, C Michael Gibson-- so looking to see how all of these are interacting should provide some insight as to how we can get some of the positive messages of these meetings out to both our peers, as well as patients.

And finally, the real game-changer in social media is that Mayo Clinic is considering this for use in its academic promotion. So certainly, this does scare a few people, but you need to note that really, we all tweet. We just have to learn how to formulate this. This is a great slide from Dr. [INAUDIBLE] that shows the anatomy of a tweet. Certainly, we have hashtags pointed out here, C. diff and infectious diseases. We have the handle of the article and the publication.

Then, we have a nice link to that article, and this essentially says in less-- in about 100 characters, if you're interested in ID or C. diff, this is a great article from the *New England Journal.* We all tweet every day, and I'm just looking at some of the board pearls from Dr. Steve Ommen's lecture here from the CV Board Review a few months ago. And he notes that the hypertrophic cardiomyopathy murmur increases exercise, Valsalva, and squat to stand. Just below that, I turn that into a simple tweet, cvHCM on the Symplur hashtag project, that murmur will increase with exercise, Valsalva, per @SteveOmmen, and the hashtag of the #MayoCVBR.

So really, without much work, we can take what we're already doing in our presentations and our talks, turn them into something that can be shared with our cardiovascular community, and if that doesn't work, then certainly, you could just take a screengrab and put that. And certainly, images do very well in terms of social media exposure.

So in summary, social media is ubiquitous and pervasive throughout the world, so why shouldn't we leverage such a powerful tool in our own cardiovascular academic experience? The current use in academic medicine is emerging. However, the precise value is not well-studied or quantified. Current standards for academic social media research are weak and need to be fortified with good, solid, clinical-- or good, solid trials. And finally, collaborations to test the hypothesis that social media is beneficial in academic medicine are readily available, ongoing, and should be explored further.

With that, I'm happy to take any questions via email or Twitter. Please don't hesitate to use the hashtag, and thank you for your attention. Have a great day.