

Tweeting the Meeting: Twitter Use at The American Society of Breast Surgeons Annual Meeting 2013–2016

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ABSTRACT

Background. Twitter social media is being used to disseminate medical meeting information. Meeting attendees and other interested parties have the ability to follow and participate in conversations related to meeting content. We analyzed Twitter activity generated from the 2013–2016 American Society of Breast Surgeons Annual Meetings.

Methods. The Symplur Signals database was used to determine number of tweets, tweets per user, and impressions for each meeting. The number of unique physicians, patients/caregivers/advocates, and industry participants was determined. Physician tweeters were cross-referenced with membership and attendance rosters. Tweet transcripts were analyzed for content and tweets were categorized as either scientific, social, administrative, industry promotion, or irrelevant.

Results. From 2013 to 2016, the number of tweets increased by 600 %, the number of Twitter users increased by 450 %, and the number of physician tweeters increased by 457 %. The number of impressions (tweets × followers) increased from more than 3.5 million to almost 20.5 million, an increase of 469 %. The majority of tweets were informative (70–80 %); social tweets ranged from 13 to 23 %. A small percentage (3–6 %) of tweets were related to administrative matters. There were very few industry or irrelevant tweets.

Conclusions. Twitter social media use at the American Society of Breast Surgeons annual meeting showed a substantial increase during the time period evaluated. The use of Twitter during professional meetings is a

tremendous opportunity to share information. The authors feel that medical conference organizers should encourage Twitter participation and should be educating attendees on the proper use of Twitter.

Twitter™ is a social media (SM) microblogging platform that allows the online publication of 140 character public messages.¹ Once a Twitter account is set up, the user has the ability to “follow” other users and is able to view their tweets in their “tweet stream.” Users do not need to follow each other. Each user on twitter is identified by a unique “handle,” which is a name or phrase chosen by the user, preceded by the “@” symbol, for example: @DrJohnDoe.

Twitter hashtags, defined as placing the # symbol before a word or phrase, are used to identify tweets centered on a particular topic and thus make the topic more easily searched. By following a predefined hashtag, interested users can follow all tweets related to the topic regardless of whether the user follows the original author of the tweet or is in attendance at the meeting or event.

Twitter is being used as a real-time communication device during live medical conferences and events (“tweeting the meeting”). It has become increasingly clear that medical meeting content is of interest to a broad audience, including physicians in other specialties, patients, policy makers, and the media.^{2–8}

At the 2011 annual meeting of The American Society of Breast Surgeons (ASBrS), Twitter was used by one of the authors (DJA) and ASBrS staff, primarily as a way to highlight abstracts discussed at the press briefing. For the first year in 2012, a group of ASBrS meeting attendees spontaneously shared meeting information using Twitter. This manuscript details the use of Twitter during the ASBrS Annual Meetings from 2013 to 2016.

METHODS

The ASBrS Annual Meeting takes place from Wednesday through Sunday during mid-late April. Pre-meeting courses are held on Wednesday and Thursday. Coding and reimbursement and vendor-sponsored symposia occur on Thursday afternoon and evening, and the general session runs from Friday through mid-day Sunday. The Twitter hashtag #ASBrS was registered with Symplur Signals, a healthcare social media analytics platform, prior to each of the ASBrS annual meetings from 2013 to 2016. We analyzed twitter activity from the meeting start on Wednesday through the Monday following each meeting. Analysis was adjusted based on the time zone of the city where each meeting was held.

The Symplur Signals database was accessed to determine the number of total tweets, number of users, tweets per user, and impressions (tweets \times number of followers). Users were further categorized by physician, patient/caregiver/advocate, or industry. The list of physician tweeters was cross-referenced with the ASBrS membership rosters for each year, as well as meeting attendance records. Twitter transcripts were evaluated to determine tweet type. Tweets were categorized as follows: (1) "Scientific" if the tweet content related to a specific topic being discussed in a meeting session or was a discussion or commentary between users related to scientific meeting content; (2) "Social" if the tweet contained general meeting or venue impressions, jokes, or other obvious social content; (3) "Administrative" if tweets were used to alert attendees to particular meeting sessions, whether posted by the ASBrS Twitter account or others; (4) "Industry promotion" if tweets were from vendors advertising their booth, product, or vendor-sponsored symposia; and (5) "Irrelevant/spam" if tweets were completely unrelated to meeting content.

RESULTS

Figure 1 visually displays the increase in #ASBrS tweet volume over the 4 years studied. Twitter activity (defined as the number of tweets) increased from 887 in 2013 to 6207 in 2016—a 600 % increase (Table 1). The number of Twitter users increased from 107 to 589 (450 %). Of the Twitter users in 2016, 167 were physicians, accounting for 28 % of total users (Table 2). However, they accounted for 63 % of tweets (3900/6207) and 52 % of impressions.

The number of impressions (tweets \times followers) increased from more than 3.5 million to almost 20.5 million (469 %). The number of physician tweeters increased from 30 in 2013 to 167 in 2016—457 % increase. The number of physician tweeters decreased from 2015 to 2016 (191–167), but tweets per physician increased by 34 %.

Notable was the involvement of patients, caregivers, and patient advocates throughout the time period studied (Table 3). Those tweets accounted for 11.5 % of total tweets in 2013 (102/887) and 13.3 % (828/6207) in 2016. The number of impressions generated by those tweets increased 16.3-fold from 2013 to 2016.

As shown in Table 4, the majority of tweets were informative (70–80 %); social tweets ranged from 13 to 23 %. A small percentage (3–6 %) of tweets were related to administrative matters. Promotional tweets from industry accounted for only 1–2 % of all tweets for the time period studied. There were very few (≤ 1 %) irrelevant tweets.

DISCUSSION

Twitter has become an important way in which attendees of national medical meetings disseminate information to their medical colleagues as well as nonphysicians interested in the meeting content. In our analysis of tweeting the ASBrS meeting during a 4-year span, we found the increase in volume of tweets to be 600 %. The overall reach, as measured by impressions, increased by 469 %.

Notable in our analysis was the high number of tweets per physician (ranging from 10.6 in 2013 to 23.4 in 2016), indicating a high level of engagement for Twitter-savvy breast surgeons. The number of tweets per user ranged from 6.56 to 10.5, whereas at other meetings number of tweets per user was reported to be 4.9 (endourology) and 6 (cardiovascular professionals).^{6,7}

The number of impressions generated by #ASBrS (more than 20 million in 2016) is large for a meeting for which the average attendance is 1420, a difference of over 4 orders of magnitude. For comparison, at #ASCO13 (American Society of Clinical Oncology 2013 annual meeting), meeting attendance was 32,200, and twitter activity generated more than 77 million impressions.⁴ These differences may reflect the relatively large number of followers engaged by several breast surgeons who tweet regularly.

Compared with other meetings, the proportion of social tweets was quite low, ranging from 13 to 23 %. Social tweets at ASCO 2011 and 2012 accounted for 40 % of the total.² Industry and other promotional tweets also accounted for a small percentage of overall Twitter activity. A total of 84 vendors exhibited at the 2016 ASBrS annual meeting.

In all years evaluated, there was more Twitter activity from nonmember physicians who did not attend the annual meeting compared with Society members who were present (Table 2). This high level of involvement by

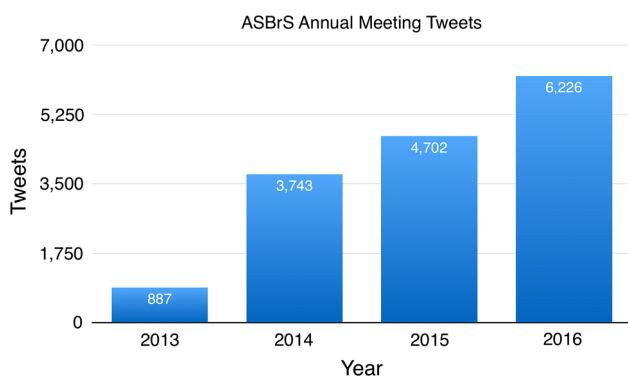


FIG. 1 Annual meeting Tweets per year

nonattendees varies in other reports. For example, 65 % of tweets generated from an major emergency physician conference came from Twitter users not present at the meeting, whereas in a meeting of anesthesiologists only 3.8 % of tweets came from nonattendees.^{3,5} A possible reason for the significant nonmember physician engagement in #ASBrS is that the topic of breast disease and breast cancer crosses multiple specialties. The contribution of patients, caregivers, and patient advocates to meeting tweeting has not been documented in other studies. Our evaluation noted that 11–35 % of Twitter activity came from this group, likely reflecting a large online breast cancer patient community and widespread interest in research related to breast disease and breast cancer.

ASCO has made a concerted effort over many years to increase SM use. In an analysis of Twitter activity at the 2010 and 2011 ASCO annual meetings, Chaudhry et al. noted that the number of tweets increased from 979 to 1477.² Wilkinson et al. included ASCO data from 2012, 2013, and 2014 in their analysis and noted that the number of tweets increased dramatically over those years from 10,475 to 44,034.⁴ The increase in Twitter activity reflects the effort ASCO has put into promoting the use SM at the annual meeting over those years.

Between 2013 and 2016, ASBrS also made efforts to increase the use of SM at their Annual Meeting. Starting in 2013, the #ASBrS hashtag was displayed on a slide show between meeting sessions. Beginning in 2014, the hashtag was announced to members ahead of the meeting via an e-newsletter. In 2015 and 2016, meeting attendees had the option of adding their Twitter handle to their meeting badge, and Twitter handles were published for faculty in the meeting program in 2016. From 2014 to 2016, a video board outside of the general session meeting room displayed a moderated tweet stream, using the TweetWall platform.⁹

In 2014 and 2015, a 5-min “Twitter 101” presentation was given at the start of the general session. During the

2014–2016 meetings, formal social media presentations were included in the pre-meeting courses and breakfast workshops.

As part of the ASBrS strategy to increase SM engagement among its members, in 2014 and 2015, the general session Maintenance of Certification (MOC) panel discussions were designated as moderated tweet sessions. During these sessions, “tweet moderators” shared the stage with the panel, and questions were taken via Twitter. In 2014, tweets selected by the tweet moderators were displayed alongside presenters’ slides during the designated sessions, but this display was discontinued for 2015 as some members found it distracting to the scientific presentation. The practice of using “tweet moderators” did not continue in 2016.

Possible concerns regarding the use of Twitter at scientific meetings include dissemination of erroneous information, a potential negative impact on meeting attendance, and compromise of publication of research findings.

The value of an active online presence by meeting attendees is that the discussions are monitored in real time, so that factual errors can be corrected promptly by physician tweeters. It is common practice for those in attendance tweeting the meeting to engage in discussion with other physicians, patients and members of the public who are following the meeting content, and in doing so, misunderstandings are less likely to occur.

The potential negative impact on meeting attendance related to SM activity may be offset by the benefit in terms of Society visibility among current and prospective members as well as the general public. Physicians have limited time to attend meetings, and an active SM presence can be viewed as a member service, similar to how some organizations allow purchase of a “virtual meeting.”¹⁰ Social media certainly does not provide the same experience as attending a meeting in person, and it is unlikely that someone interested and able to travel would stay away simply based on a Twitter feed. ASBrS annual meeting attendance has not declined during the period evaluated despite increased Twitter use.

ASBrS abstracts presented in oral, “quickshots,” and poster sessions are published in the online meeting proceedings, available to the public. However, as these abstracts make up a small portion of overall meeting content, limiting access to online content would significantly limit the amount of information shared. For abstracts that are being presented in oral or poster format, discussion on SM provides the ability to add additional context and detail. Some organizations prohibit photography and dissemination of unpublished research findings out of concern for compromise of future publication.^{11,12} It has been suggested that medical societies adopt policies regarding

TABLE 1 Number of Tweets, Tweeters, impressions

Year	#users	Tweets	Tweets/user	Impressions
2013	107	887	8.29	3,592,270
2014	571	3743	6.56	14,553,798
2015	545	4702	8.63	15,387,619
2016	589	6207	10.5	20,445,985

TABLE 2 Physician activity and membership

Year	# MDs	M-P	M-A	NM-A	NM-P	Total Tweets	Tweets/MD	Impressions
2013	30	13	0	17	0	637	21.2	2,875,477
2014	140	53	4	83	0	1490	10.6	4,174,473
2015	191	52	10	128	1	2907	15.2	9,713,445
2016	167	57	5	101	4	3900	23.4	10,620,578

M member; *N* nonmember; *P* present; *A* absent

TABLE 3 Patient/caregiver/advocate Tweets

Year	#Users	Total Tweets	Tweets/user	Impressions	% Total meeting tweets
2013	25	102	4.08	395,424	11.5
2014	75	1323	17.6	9,154,246	35.3
2015	59	690	11.7	3,871,226	14.7
2016	53	828	15.6	6,460,792	13.3

TABLE 4 Types of Tweets, percentage of total

Year	Scientific	Social	Admin	Industry	Irrelevant
2013	72	21	5	1	1
2014	70	23	6	1	0.1
2015	80	15	3	2	0
2016	80	13	3	2	1

social media use if there is a concern about premature release of data.²

Twitter was chosen for several reasons. Setting up an account only takes a few minutes on a handheld device. New users often find that they are very comfortable with the platform after a brief tutorial. In addition, there are already a large number of interested physicians and patients on Twitter, ready to engage in discussion; in 2014, physicians in the United States tweeted about cancer-related topics over 138,000 times, with 5500 different doctors engaging in the conversation at least once.¹³ Blogs as well as SM sites, such as Facebook or LinkedIn, may be helpful for curating and disseminating meeting content, but active real-time discussion and interaction on these platforms would be more challenging compared with Twitter.

Our study has several limitations. The Symplur Signals database user classification, which assigns a user type

(physician, patient/advocate/caregiver, industry), may not always accurately categorize a Twitter user, because classification depends on cross-referencing Twitter biographies with NPI numbers (for physicians) and self-identification with a particular user category. It is possible that some of the meeting attendees tweeted meeting content without using the #ASBrS hashtag and that information was not captured in our evaluation. As is the case with most SM platforms, there is no way to capture so-called “lurkers”—those who read the content but do not tweet or re-tweet. As noted by Chaudhry, the real value in conference tweeting often is in reading the information, not disseminating it.² We are not able to determine if the online discussions resulted in any change in opinions or practice.

Physician tweeters in attendance at the meeting only accounted for a small percentage of meeting attendees (2–13 %), so it is not possible to determine whether the

meeting content disseminated accurately reflects the sentiment of the majority of meeting attendees. While tweet impressions increased substantially during the time period evaluated, this is a reflection of a relatively large increase in the number of followers by some of the more active breast surgeon tweeters. Tweet impressions are a measure of potential reach, but it is not possible to accurately determine how many people actually read or were exposed to the meeting tweets. In addition, we only monitored Twitter activity for 1½ days after the meeting ended. An advantage of Twitter is that users can log on at any time and review hashtag content, even long after the event has ended; the potential reach is likely larger than what we reported.

Finally, categorizing tweet content is a subjective exercise. While the content and classification of many tweets is obvious, it is sometimes challenging to infer meaning when limited to 140 characters. The authors are all experienced Twitter users and have become comfortable conveying their thoughts in this format, but interpreting tweets of less savvy users could have resulted in misclassification.

CONCLUSIONS

The use of Twitter during professional meetings is a tremendous opportunity to share information and does not require a significant investment in dollars or organization resources. A strong Twitter meeting presence results in increased exposure of the professional society and the subject matter for nonmember physicians, researchers, online patient groups, and the media. For these reasons, it is the opinion of the authors that medical conference organizers should encourage Twitter participation and should be educating attendees on the proper use of Twitter. Meeting organizers should make every attempt to ensure access to adequate Wi-Fi and to advertise the meeting hashtag. It also is the authors' opinion that promoting the use of Twitter for purely social purposes will likely not result in dissemination of educational content or promote meaningful engagement and collaboration after the meeting is over. Because SM use is more prevalent with younger physicians, an active meeting SM presence may help to engage younger members of a professional organization.¹⁴

The use of Twitter to amplify educational reach is evident not only in professional meetings. Twitter, particularly when following a structured cancer tag ontology, expands online cancer communication, enhances patient education and support, and has potential to recruit participants in clinical trials.^{15–17} There are several, published SM “best

practices” that can be used as a starting point for both physicians and medical organizations who are interested in developing a Twitter presence.^{8,14,18}

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