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## The use and impact of Twitter at medical conferences: Best practices and Twitter etiquette

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### Abstract

The use of social media, and in particular, Twitter, for professional use among healthcare providers is rapidly increasing across the world. One medical subspecialty that is leading the integration of this new platform for communication into daily practice and for information dissemination to the general public is the field of hematology/oncology. A growing amount of research in this area demonstrates that there is increasing interest among physicians to learn not only how to use social media for consumption of educational material, but also how to generate and contribute original content in one's interest/expert areas. One aspect in which this phenomenon has been highlighted is at the time of maximum new information presentation: at a major medical conference. Hematologists/oncologists are engaging regularly in one of the most common forms of social media, Twitter, during major medical conferences, for purposes of debate, discussion, and real-time evaluation of the data being presented. As interest has grown in this area, this article aims to review the new norms, practices, and impact of using Twitter at the time of medical conferences, and also explores some of the barriers and pitfalls that users are encountering in this emerging field.

### Keywords

Social media; Twitter; Disease-specific hashtag; Medical conferences

## 1. Introduction

The use of social media platforms among healthcare providers has become a novel approach for acquiring updated, real-time information and generating practical medical information useful to the general public [1,2]. This is especially true among hematologists/oncologists who are interfacing with social media for many different purposes, including increasing communication among colleagues around the world, furthering professional advancement by raising awareness of one's research or lab group findings, development of new professional

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connections, and providing new ways to interact with patients and the general population [3]. One of the major methods of social media engagement, the microblogging site known as Twitter (characterized by 140-character messages, known as “tweets”), has become popular among both research-focused and community-based physicians in hematology/oncology. Twitter use and sustained engagement increases around the time of major medical conferences, which not only brings together those who are in physical attendance, but now, those healthcare providers who are virtually attending the meeting and providing critical analysis remotely [4–7]. This marks a new era in hematology/oncology and this review article aims to focus on the new norms, practices, and impact of the use of Twitter at medical conferences.

## 2. Twitter: The “new norm” for keeping up with updates in the field of medicine

Increasingly, it is being noted by groups throughout the medical research world that the use of Twitter by medical professionals is potentially contributing to the accessibility of new research findings more rapidly than ever before, and to increased awareness about medical research/clinical trials, both by the general population and among physicians and researchers themselves [8,9]. In the field of hematology/oncology specifically, an increasing number of users discuss key areas of either their own active research or the work of colleagues, which changes over time, and Twitter use has been found to reflect, document, and comment on these trends especially at the time of major medical conferences [6,10]. Indeed, today’s clinician in the field of hematology/oncology, with the ever-increasing time demands placed on one’s schedule, has the potential, via Twitter, for a new opportunity for greater awareness for clinical trials and augmented avenues for information exchange among patients, community-based physicians, trainees, and academic researchers, without leaving the office or home [11,12]. As Thompson et al noted, the clinical provider is already busy with so many time demands, some of which already incorporate other technological time spent in front of screens (eg , always changing electronic medical records), and it may be quite difficult for a new user to find time to dedicate to Twitter [12]. Several reasons for the healthcare provider to invest some of their precious time may demonstrate the benefit of engaging in Twitter even in the midst of a busy clinical practice or scientific research career. One study, led by Ciprut et al, found that there was a statistically significant association between increased use of Twitter and higher publically available reputation scores for medical departments in a specified field, suggesting that in addition to individual physicians, departments/organization/entities may be able to globally benefit from engagement in social media usage, particularly Twitter [13]. Furthermore, the regular use of Twitter has been posited as a way to increase the general public’s awareness of an investigator’s field of interest, and thereby one’s own work profile, lab group’s interests, or spectrum of research activities, which can then lead to accelerated development of new research collaborations and connections in one’s field [14]. Another novel study demonstrated that the use of Twitter by research journals in an academic field may influence the manner in which articles can be measured in terms of their impact, influence, and reach. Cardona-Grau et al found that among 33 journals in the field of urology, there was a significant correlation between the journal’s impact factor and what they termed the journal’s Twitter Impact Factor, or “TIF.”

This new measure, the TIF, may be able to measure the impact of a journal's use of Twitter in the dissemination of their papers, abstracts, and academic information, similar to the already established Journal Impact Factor (Thomas Reuters) [15]; this compelling new concept and will need to be validated in subsequent studies.

### 3. Engaging in social media at the time of medical conferences: Is it worth your time?

In terms of attending medical conferences, the routine has changed for many hematologists/oncologists. In prior eras, making arrangements to attend the one or two major medical conferences in one's field was a serious planning event that required the participant to be physically on site (see Table 1 for a sampling of the growing number of major medical conferences in hematology/oncology field that feature a Twitter presence). Missing the meeting, in eras past, coupled with waiting months or longer to have some type of access to meeting material and slides, meant risking being "out of the loop" on important new concepts or even breakthroughs in one's subfield. Contrast this with the modern era of "24-7" online accessibility and social media; attendees, particularly from all around the world, can now "attend" in realtime remotely through Twitter and still actively, and authentically, contribute to the discussions via social media since they are able to following along with all of the latest developments at the meeting without delays in information acquisition [16]. Medical conferences, therefore, are now truly open to a vital, free-flowing exchange of novel ideas, much more rapidly than in the past, and can now include the maximum level of diversity in terms of the types of participants and stakeholders, not just the ones who were on site for the meeting (especially pertinent for our international colleagues) [5,17]. Indeed, in many instances, a conference speaker may receive critical feedback on a talk as soon as he or she has left the podium to review comments and contribute their own answers, rebuttals, and thoughts via Twitter [14]. Some speakers have even been known to program tweets to coincide with an actual talk, thus providing references and comments in parallel to the presentation.

The use and uptake of social media at medical conferences has been observed in a number of different fields and is increasing over time, among all age ranges and specialties, such as generalists [18], emergency physicians [19], pathologists [20], surgical subspecialists [21], and pediatric [22], adolescent/young adult [23], and geriatric physicians [24]. For example, in the field of family medicine, Mishori et al reviewed the use of Twitter at a family medical conference and found that 13% of the registered attendees were active on Twitter during the meeting and that the majority of the tweets analyzed—70% of the generated user content—directly pertained to session-related information [18]. In a study by Attai et al, among surgeons attending a medical conference, a similar high rate of tweets during the conference period (each year between 2013–2016) was found to contain relevant information (approximately 70%–80%), even in the setting of increasing amounts of individual users added per year analyzed [25]. These trends have continued in the subspecialized fields, such a rare cancer areas. Communication via Twitter, during the time of medical conferences, has served to raise awareness for new clinical trials and scientific data in rapid fashion, especially when organized under the umbrella of the disease-specific hashtag [26]. We found

that stakeholders from all over the healthcare spectrum in rare cancer subtypes have a newly found ability to connect via disease-specific hashtags established before the meeting but can be used, in combination with the conference meeting hashtag, for maximum impact among users (eg, #MPNSM = Myeloproliferative Neoplasms on Social Media is an established disease hashtag, and #ASHxx is the hashtag for American Society of Hematology where xx= year of meeting) [27]. In this manner, healthcare stakeholders in rare cancer subfields have had the chance to meet first via Twitter, and then “IRL” (in real life) at the meeting, which has then led to long-lasting collaborations sustained for years later, including the authors of this manuscript [12,27,28]. Similarly, this implied combined Boolean logic (eg, #mpnsm + #ASH17) can be used before, during, or after the meeting to do a focused search for information and thus improve the signal-to-noise ratio for a specific purpose such as asking a research question or reviewing a dataset from the meeting.

#### 4. Twitter etiquette and best practices at medical meetings

While there is no definitive or uniform way to approach one’s professional engagement with social media, the authors have noted several straightforward norms one may follow as documented in the literature in this early field [6,29], as well through key slideshare sets, publically available online [Fisch M (@fischMD): #ASCO14 <http://ow.ly/MQiPD>, “Appropriate Use of Social Media in Medical Practice”; and Majhail N (@BldCan-cerDoc): [#bmtsm #EBMT15](http://www.slideshare.net/nsmajhail/twitter-ebmt), “Why Do We Need Twitter? For Health Professionals In Oncology, Hematology & SCT”]. In a study of tweeting at a major medical conference in a surgical specialty, the authors found that user bio/profiles of tweeters that contained more information about the user (eg, picture or a link to a profile) had a statistically significant correlation with higher engagement rates compared to those tweeters without these basic/key features [21]. The implications of this may be interpreted to reflect that the higher an individual user’s transparency and credibility, denoted by providing an adequate amount of professional background information, may increase their ability to connect with more users from an early stage. Moreover, the investigators demonstrated that there were a significant amount of other healthcare stakeholders participating beyond physicians (eg, organizations, companies, journals, others) which reminds all users of the myriad backgrounds and audiences that are all brought together for a medical meeting. This is especially very important to keep in mind in terms of professionalism of tweets, content generated for dissemination, and for contemplation of outreach of one’s overall message [21,30]. Additionally, when tweeting topics at a medical conference, the concept of disclosing one’s conflict of interest (COI), or having a link to listing of these disclosures, in some form (in relevant tweets, Twitter bio-line, other appropriate places online) has been put forward as a sensible approach to alerting one’s Twitter followers to this information before/ during tweeting from a conference [31].

In a recent comprehensive analysis, Pemmaraju and colleagues found that the use of Twitter by medical professionals at the most highly attended medical conference in the oncology field (ASCO) has been rapidly rising each year from 2011 to 2016 [6]. In this analysis of approximately 40,000 unique Twitter users during that time period, there were approximately 190,000 distinct tweets representing a large sample size of data for interpretation. One of the key findings was the identification of third party entities

elaborating both influence, and in some cases, interference, from original content and consumption, in the form of promoted materials, formal advertisements, and even, remarkably purchased Twitter followers and retweets [6,32] during the time of major medical conferences. Therefore, all Twitter users must be aware of third-party influences (both known and unknown) and behaviors (eg, promoting tweets or buying followers) that may be playing a role in the overall conference discussions taking place.

One of the more practically relevant articles that may serve as a primer in this field was written by Ekins and Perlstein in 2014 [29]. Among the pearls dispensed from this hands-on guide is that not only is it feasible to tweet about findings one has learned at meetings, but that it is possible to participate constructively in so-called “live-tweeting,” that is, generating content about a meeting while a talk is ongoing. Indeed, the first four rules focus on establishing the importance of creating and using an official healthcare hashtag for the meeting, which has proven to be a quintessential aspect of “tweeting the meeting” [16,25] in order to decrease the “signal-to-noise” ratio [6] of tweets to help users hone in on the content from a specified medical event [33]. This has become the initial event for all of our major meetings in the field of hematology/oncology, and has utility to serve as both filter and master archiver in one’s Twitter feed/search for later reference. In terms of the structure of the tweet itself, with space limited, Ekins and others have recommended to cite the speaker’s name and topic as a reference in the first, or “parent” tweet for talk topic; then proceed to generate, in either picture form or tweet message form, your own take on the content you are learning about; and to clearly separate your own personal views from those of the speakers, your organization/entity, and from others in the subject area. Lastly, one very relevant point mentioned here is the assembly of “tweet-ups” for individual Twitter users to all meet each other in real life (“IRL”), which may then lead to collaboration, networking, and research opportunities [29].

## 5. Realities of information exchange: Pitfalls, privacy, and censorship

As with any form of media, social media, including Twitter, must be approached by the medical professional with caution, professionalism, and the understanding that all information posted is publically archived (even when later deleted) and readily available [34]. Therefore, as with any form of real-time information exchange, situations are bound to occur in which parties may have differences of opinion. One must always keep in mind patient protection and confidentiality as one of our highest priorities at all times and the boundaries of what constitutes “general” (not intended to be individual specific) versus readily identifiable or “patient-specific” [35]. Another barrier of this new medium has been lack of available time, energy, and resources to engage in yet another new technological aspect of practice [3]. This barrier has been approached by users by different methods, including finding ways to carve out time for social media consumption for learning as part of one’s daily on-line reading/information gathering and/or using a stepwise “ladder” approach starting with most basic/least time-consuming strategies for first steps into using social media before progressing to more detailed user-related aspects once comfort has been established [12]. Additionally, once engaged on Twitter, even without formal guidelines, most healthcare stake-holders will agree that there exists a general practice or, if you will, a set of informal rules/self-regulatory elements for medical professionals as regards (1) self-

regulating constantly for spam/unusable information posts, (b) posting of blatantly inaccurate content generation, and (c) maintenance of a common sense “decorum” for all involved [1,6].

While commonplace now, and certainly representing the standard practice by the majority of scientists and healthcare providers in the field, the practice of “tweeting from the meeting” has not always been universally supported. One barrier for Twitter use at medical meetings, especially in its earlier days, was the feeling by some that sharing of content of speakers on social media, particularly *during* their talk, could represent a breach of scientific standards. In other words, the posting of “unpublished data” without explicit permission from the speaker was put forward as a possible reason to ban social media use from medical conferences. In one important example, as documented by Kevin Campbell, this issue recently reached an inflection point [5]. In 2017, members of the American Diabetes Association (ADA) began tweeting from the meeting, #ADA2017; soon thereafter, users were asked to delete tweets containing slides/pictures from the meeting. The highly unexpected and restrictive practice received a torrent of backlash on Twitter, including, notably, many key medical opinion leaders outside of the field of diabetes research. The online discussion resulted in almost universal disagreement with this policy, with the vast majority of medical professionals in favor of posting any and all material on social media, once it has been presented, and therefore by definition in the public sphere from that moment onward [36]. Therefore, “tweeting from the meeting” has been widely seen as a positive force in the greater medical field [37,38]. Furthermore, this particular episode elevated the debate as we move forward about what is, and what is not, acceptable to tweet from meetings, which will need to be determined on the individual user level, medical society/organizational level, and in terms of general standards for the entire online community [5,39].

In summary, while there are no formal rules or absolutes in social media usage, there are many ways users are able to engage in Twitter for work in the medical field. Some of these approaches include consuming information and education efforts, contributing accurate original content, networking with new colleagues, raising awareness for research/clinical trials, or advancing the discussion and debate at national or international meetings. With regards to meetings and conferences, the use of Twitter has specifically enhanced the interaction of attendees present on site, as well as with those attending “virtually” or remotely, and for these remote users, has provided, for the first time, the opportunity to learn about, react to, debate and discuss meeting information in realtime with a variety of different healthcare stakeholders from around the world.

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**Table 1**  
Sample of major medical conferences in field of hematology/oncology using disease-specific hashtags for 2017.

Medical society	Twitter handle	Meeting hashtag: 2017
American Society of Hematology (ASH)	@ASH_hematology	#ASH17
American Society of Clinical Oncology (ASCO)	@ASCO	#ASCO17
American Association of Cancer Research (AACR)	@AACR	#AACR17
European Hematology Association (EHA)	@EHA_Hematology	#EHA22
European Society for Blood and Marrow Transplantation (EBMT)	@TheEBMT	#EBMT17
The European Society of Medical Oncology (ESMO)	@myESMO	#ESMO17
Society of Hematologic Oncology (SOHO)	@SocietyofHemOnc	#SOHO17
American Society for Blood and Marrow Transplantation (ASBMT)	@ASBMT	#BMTTandem17