Breaking International Barriers: #ColorectalSurgery Is #GlobalSurgery

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Clin Colon Rectal Surg 2017;30:277–280.

Abstract

Colorectal surgeons have lagged behind other professionals in the use of social media. Currently, Twitter is the most widely utilized social platform for professional purposes among them. Connection and contagion are the two key actions that, together with immediate feedback and quantifiable impact, favor the use of Twitter over other social networks. In early 2016, a group of colorectal surgeons launched the #colorectalsurgery hashtag and, in less than 1 year, the ecosystem has incorporated over 2,600 users that generated over 24,000 tweets and 100 million impressions. "Live-Tweeting" surgical conferences by attendees including institutional or society accounts have greatly contributed to the success of the initiative. However, there are some barriers to a more wide adoption of social media, such as misrepresentation of non–peer-reviewed data, challenges to intellectual property protection, or even damage to the professional image. Active engagement with the #colorectalsurgery community may result in benefits for the global surgery community through information sharing, social interactions, personal branding, and research.

Keywords
- Twitter
- #colorectalsurgery
- conference
- hashtag
- social media
- surgery

Over the past decade, the Internet has evolved from a passive repository of information to a dynamic communication network, also known as Web 2.0, a term coined by Tim O'Reilly.[1] Some of the most frequently used free web-based applications, generally called social networks, were launched between 2003 and 2006 (LinkedIn, Facebook, YouTube, and Twitter). They subsequently made the digital transformation of global communication possible by allowing a direct exchange of different forms of content, such as text, audio, images, and video, among users anywhere in the world, if Internet access is available and there is no official ban.

Healthcare professionals in general[2] and surgeons in particular[3] have lagged behind other sectors in the use of social media for professional purposes. The reasons are multifactorial but, basically, healthcare is a highly regulated field with many perceived risks and potential threats. There is no clear model that can help us understand how to benefit from the use of these social platforms. Interestingly, some preliminary global experiments with Twitter were reported in early 2009, when two groups in the United States[4] and Europe[5] tweeted surgical procedures for the first time.

Twitter is a microblogging application, where users post 140 characters long messages, known as tweets, that may also contain links, up to four images, video clips, or live video (through Periscope, an associated tool). There are recent examples of individual surgeons, surgical societies, and journals, who have successfully engaged in social media and significantly contributed to a digital transformation of professional interactions and knowledge dissemination at a global scale.[6] However, the wide adoption of Twitter by scientists and healthcare professionals has not come without criticism. In fact, a fake indicator called the K (Kardashian)

Issue Theme Hot Topics: Social Media and Surgery; Guest Editor: Kyle G. Cologne, MD, FACS, FASCRS

DOI https://doi.org/10.1055/s-0037-1604257.
ISSN 1531-0043.

index[7] was reported to describe the relationship between the number of followers and citations in peer-reviewed journals. Scientists who have more followers on Twitter than citations in peer-reviewed journals are known as Kardashians.

Led by Twitter accounts who have the power to affect others' opinions by their authority, knowledge, or position (also known as "influencers"), users with large followers can impact what is viewed/discussed about a topic. Several initiatives have reached a huge repercussion and impact, such as #IlookLikeaSurgeon,[6] #Plasticsurgery,[8] and #Colorectalsurgery,[9] and although there is engagement of many, a select few users have dominated these fields. As a further testament to the power of social media, a top influencer of a scientific event need not even be geographically present for the conference. The right user with a large following can create this phenomenon simply being engaged and spreading ideas using the relevant hashtag, which then leads to several impressions among his or her followers, and in turn "influencing" the event or hashtag. The social media platform as a whole has become a topic for research. As an example, when the combined terms "Twitter" and "Surgery" were entered into the PubMed search engine on February 12, 2017, it identified 821 items, words that even a decade ago were very rarely seen together, let alone searchable in a scientific format.

The Global Shift

The 2010s has seen a paradigm shift in the way information is disseminated. Prior to this, print journals and physical presence at scientific meetings were the only real way to disseminate scientific concepts or ideas. Social media has not only changed but enhanced the way humans communicate: ubiquity is the new normal. However, impact brings risks and threats along. Our aim is to review the sociological basis of professional interactions on social media, the impact of the #colorectalsurgery hashtag, and the opportunities, risks, and threats that the use of Twitter brings for surgeons, institutions, and academic conferences.

Sociological Bases of Global Interactions in Social Media

The sociological bases of human behavior in social networks have been extensively investigated by Nicholas Christakis and his group.[10,11]

They described two key actions that may partially explain the current success of Twitter in creating global surgical communities. These two actions are the following:

1. *Connection*: individual nodes establish an unlimited number of bidirectional communication links.
2. *Contagion*: ideas are copied, disseminated, and incorporated by connected nodes.

Unrestricted connection of users is essential to establish a global structure that would facilitate information sharing. This is more difficult to achieve in social networks (Facebook or LinkedIn, which allows some restriction or privacy settings or limits posts to be viewed only by a user's followers) than in truer forms of social media (e.g., Twitter, where no such restriction exists). Anyone, anywhere in the world can disseminate information from the latter through retweets (reposting somebody else's tweet or comment). This allows a snowball effect of information sharing, something termed "going viral."

Social media users' interactions are not based on previous (offline) contact and users do not have to follow an account to see or share its tweets.[12] This distinct feature of Twitter promotes ubiquity. Individuals may connect with friends, but more frequently they follow, mention, retweet, or embed tweets of renowned professionals, celebrities, or even complete strangers from all over the world, who produce content that they find interesting irrespective of their location. Thus, a global structure is created by connecting single nodes. In turn, nodes reverberate ideas throughout their network of contacts.[12]

Ideas that flow through the connected ecosystem may become an "infectious disease."[11] In fact, emotional contagion in social media has been documented and quantified. Ferrara and Yang[13] investigated the dynamics of emotional contagion in a random group of Twitter users and were able to identify two different groups of people with distinct susceptibility to emotional contagion. This is particularly relevant for surgeons when meaningful information is commented and shared by key opinion leaders or influencers.

In addition to the conventional actions (connection and contagion) that shape human networks, its digital platforms allow two additional features:

1. *Immediate feedback*: retweets and likes are immediately reported to the user, enhancing the narcissistic self.[12]
2. *Quantifiable impact*: through free applications, such as Twitter analytics[14] and symplur,[15] individual users and communities can gauge their impact.

Users immediately receive feedback on the interactions with their tweets (retweets and Likes). The television show "Saturday Night Live" recently parodied this interaction when two little known citizens had posts retweeted by a famous political figure. There also exists a Twitter Analytics feature[14] that is freely accessible and can further analyze and assess tweet metrics, and the amount of the interaction with their audience. Twitter even allows you to sort searches by the most popular tweets. This narcissistic craving for attention/retweets provides internal motivation for improving the communication process.

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One distinct feature of Twitter is the possibility of tagging a string of characters with the "#" symbol. This metadata tag, known as "hashtag," transforms a word or phrase in a keyword, which may describe a topic or a theme. Consequently, it is possible to connect users, even if they do not follow each other, just by posting a tweet with the same traceable tag.

In surgery, there have been very interesting examples such as #Ilooklikeasurgeon, led by Healther Logghe (@LoggheMD), or #plasticsurgery led by Olivier Branford (@olivierbranford)—both of them demonstrated the usefulness of

Twitter to launch and sustain massive campaigns and global initiatives.

Following the example set by Olivier Branford with #plasticsurgery, in early 2016 several colorectal surgeons (e.g., @researchactive, @SWexner, @ManishChand, @miguel_pera, @SamAttallahMD, @SChadi_CRS, @juliomayol), who are very active on Twitter, started a conversation about creating a community and agreed to tag their tweets with #colorectalsurgery whenever their microposts included information pertaining to the field. These surgeons and others from the United Kingdom, United States, and Spain have been the main force behind the initiative (►**Table 1**) and soon the community grew to engage other surgeons from across Europe and also from English- and Spanish-speaking countries. Surgical societies (e.g., @ESCP_tweets, @ACPGBI, and @fascrs_updates) and surgical journals (e.g., @AnnalsofSurgery, @DCRJournal, and @ColorectalDis) also started tweeting the #colorectalsurgery hashtag. From the very beginning, this initiative ignited much enthusiasm. As an example, Richard Brady (@researchactive) recently reported that #colorectalsurgery surpassed 100 million impressions before its first anniversary. To be precise, 24,474 tweets with the hashtag #colorectalsurgery had been seen 101,503,760 times, with 2,695 individual accounts contributing to this number.[16]

The impact of the international #colorectalsurgery community was greatly enhanced by surgeons attending surgical meetings and live-tweeting specialty-specific tweets tagged with the #colorectalsurgery hashtag. This has allowed even those who are not present at an event to view (at least in part) some of the scientific content. Academic conferences have been disrupted by this social media broadcasting, and each of them reacted in its own way. Some organizers are inclined to promote live-tweeting by attendees. They also tweet and/or retweet content from their own organizational accounts to enhance visibility. Twitterazzi are welcome because they increase conference promotion and impact.[17] An additional benefit of such policy is that the conference becomes part of a global surgery effort by making high-quality contents available to surgeons in developing countries.[18] On the other hand, four potentially very serious issues have been mentioned as risks that prevent conference organizers from widely adopting the use of Twitter[19]:

1. *Misrepresentation of non–peer-reviewed data*: partial results may be made publicly available before being validated.
2. *Copyright/intellectual property (IP)*: protected content may be wrongly shared and innovations may go into the public domain before IP protection is sought.
3. Spread of biased information by third-party commercial entities.[20]
4. Damage to professional image.[2]

The different approaches to live-tweeting are tackled differently by each conference organizer or sponsoring organization leadership. They range from the more restrictive approach of the DDW (tweets are promoted by @DDWmeeting, but pictures and videos are explicitly prohibited) to the proactive role of the European Society of Coloproctology (ESCP, #escp2016) or the Association of Academic Surgery (AAS, #ACS2017) for their annual meetings which encourages as much interaction as possible. With this strategy, the 2016 ESCP meeting achieved 9,243,834 impressions with 3,541 individual tweets and 465 participants (as shown by symplur.com with Twitter data from the #escp2016 hashtag between Tuesday September 20 12:00 through Saturday October 1 12:00 2016 Pacific Time; GMT-0800). An in-between approach has been taken by the American Society of Colon and Rectal Surgeons (@fascrs_updates), which initially was quite restrictive but now gives speakers the choice to opt out of social media broadcasting or request slide pictures not be taken (e.g., if content is sensitive or if speakers wish to maintain the IP).

For colorectal surgeons, it is becoming increasingly difficult to take part in all the scientific meetings and conferences where experts share valuable knowledge, particularly since the world experts span multiple continents. The demands of clinical practice may prohibit an exhaustive travel schedule to attend multiple meetings in any one year. But "not being physically there" is not equivalent to "not being there" in the social media era. Engagement with the global #colorectalsurgery community and with related healthcare conference hashtags may be valuable for the following:

1. *Information sharing*: wide distribution of tweets with links to valuable papers, videos, and slide content (much of which may also be available through a meeting's smartphone application).
2. *Professional education*: easy access to experts' opinions and insights on specific clinical and technical problems. "Conversations" about specific topics and themes (tweet chats). This expert opinion is often a catalyst for subsequent discussion (e.g., the talk after the talk).

Table 1 Metrics of some of the contributors to #colorectalsurgery between January 1, 2017, and February 19, 2017, as measured by symplur (symplur.com)

	@SWexner	@juliomayol	@manishchandsurg	@researchactive	@antoniodelacy
Mentions	822	212	412	353	261
Tweets	287	129	210	81	111
Impressions	1.457.070	2.231.270	208.789	285.168	412.223

Note: Twitter data from the *#Colorectalsurgery* hashtag between Sunay January 1 12:00 through Monday February 20 12:00 2017 Pacific Time (GMT-0800).

3. *Social interactions*: remote personal interactions with colleagues, residents, students, etc.
4. *Personal branding*: surgeons and scientists may market their careers or inject their own findings/research to the discussion.
5. *Research*: exploiting Twitter to further understand patients' needs and opinions, as it has been reported for cancer patients.[21]

If permitted by conference organizers, these types of interactions among surgeons worldwide have allowed those with an interest or expertise who may not be present at the meeting can still participate in the overall learning experience.

In summary, the global community structured and built around the #colorectalsurgery hashtag has grown rapidly in less than a year. Surgeons, professional organizations, and journals across several continents have actively participated. Live-tweeting at surgical conferences has allowed meaningful content to reach a large impact in English- and Spanish-speaking countries. However, there is a lot more to be done to leverage the use of social media among colorectal surgeons. As the medium evolves, new rules will likely emerge that will have to strike a balance between maintaining the IP of the speaker, keeping value in attending a meeting, while still allowing some of the content to be showcased on a more global stage. As twitter and other forms of social media cannot tell the whole story, the best academic experience remains to be there in person. It is a bit like reading an abstract: if time is limited, it can give you a brief overview of research. However, to fully understand the topic, reading the entire manuscript is required. New challenges will likely emerge with this condensed form of knowledge acquisition and transmission. The #colorectalsurgery as #globalsurgery community remains ready to take on those challenges as the technology evolves.

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