

Getting Started: A Social Media Primer

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Abstract

Social media use has increased both in the general public and in the surgical profession. A variety of social media platforms have been used, with Twitter being one of the most common and interactive platforms. Common uses by surgeons and scientists for social media include dissemination of information, information exchange, education, research recruitment, community consultation for clinical trials, and hospital or surgeon ratings. As social media use increases, a new language as well as metrics has been developed to track impact and reach of research incorporating social media platforms. All surgeons should be encouraged to familiarize themselves with social media, regardless of whether or not they choose to actively engage in it.

Keywords

- ▶ social media
- ▶ Twitter
- ▶ altmetrics
- ▶ dissemination





What Is Social Media?

Social media is defined as “forms of electronic communication through which users create online communities to share information, ideas, personal messages, and other content.”¹ There are many types of social media platforms, which are the web-based technologies that are used to create and manage social media content. Examples of social media platforms include Facebook, Twitter, Pinterest, Snapchat, Skype, LinkedIn, Google +, YouTube, Yelp, and Foursquare. Social media platforms differ in terms of their purpose and usage. In addition, communication styles differ across social media platforms, in part due to the posting constraints of the various platforms. For example, Facebook is the most popular social networking site;² it allows users to share thoughts, pictures, videos, and web links either privately or publicly. There are no constraints with regard to the number of words or characters. On the other hand, Twitter (described as a micro-blogging site) limits messages to 140 characters or less, called *tweets*. Instagram and Pinterest are photo-sharing sites where users primarily post pictures and videos, though the capabilities of these platforms have increased to include text in recent years. Although surgeons may use these platforms for personal reasons, there is an increasing use of social media in clinical practice, surgical education, and research.

What Is an Example of Social Media?

Twitter is perhaps the most commonly used social media platform by surgeons and researchers. As already noted, tweets are messages that are composed of 140 characters or less. There are potential components of a *tweet* that make it amenable to multiple uses by researchers or surgeons, in part due to the ability to identify specific content and to collect metrics. Common terminology and components of a tweet are included in ▶Table 1. For example, a tweet can include a tag or label to denote a topic of interest called a *hashtag* (#). Thus, a user interested in content pertinent to treatment of colon cancer might search all tweets for #coloncancer. Tweets can also include a link to another site such as to a journal abstract or article; this is called a *tweetation*.³ Metrics can be collected related to the number of times the tweet was reposted (*retweeted*) or to the number of unique individuals to whom the tweet was sent (*reach*). Thus, social media platforms such as Twitter can increase the efficiency and scope of information dissemination and exchange. A group of gastroenterologists recently queried key stakeholders and tried to standardize hashtags to more effectively link communication of ideas among providers and patients on social media.⁴

Table 1 Common Twitter terminology

Example tweet: Lillian Kao @LillianKao1 Welcome to Twitter! @user1 @user2 #TwitterNovice 			
Term	Symbol	Definition	Reference to example
Tweet		Message that includes up to 140 characters	Welcome to Twitter! @user1 @user2 #TwitterNovice
Twitter handle	@	Username	@LillianKao1, @user1, and @user2 are Twitter handles. Lillian Kao is the author of this tweet. @user1 and @user2 are recipients
Follower		User that receives your Twitter feed	All of the followers of @LillianKao1, @user1, and @user2 will receive this tweet. Following can be one-way or two-way. For example, @LillianKao1 may follow @user1, but @user1 may not follow @LillianKao1 back
Mention	@	Inclusion of a username in the body of a message	@user1 and @user2 were mentioned in this tweet
Hashtag	#	Keyword	#TwitterNovice is a hashtag that allows users to search for or categorize your tweet
Retweet		Forwarded or reposted message	If @user1 forwards the message to all her followers, then she has retweeted the message
Reply		Response to a tweet to the person to whom you are replying and all of that person's and your followers	@user1 could reply to the tweet: @LillianKao1 Thank you! The reply would be seen by everyone following @LillianKao1 and @user1
Like		Sign of appreciation for a message	@user3 might like the tweet by pressing the heart button
Reach		Number of unique Twitter users who receive a tweet	If @LillianKao1, @user1, and @user2 all have 100 unique followers, then the reach is 300
Impression		Number of times a tweet has been delivered to an account	A tweet may be delivered to the same account multiple times; thus that user counts once for reach and multiple times for impressions
Lurk		To actively listen, but not engage or comment while on social media	@harkersteele started without any original tweets, but followed several key leaders in the field including journals and societies

Who Uses Social Media?

Over the past decade, there has been a significant increase in social media use among Americans. The Pew Research Center, a nonprofit group that researches topics ranging from politics to science and technology in the United States, reports that social media usage has increased from 5% in 2005 to 69% currently.² While young adults (18–29 years) were the earliest adopters of social media, there has been increased use of social media among all age groups, including older adults (65+ years).²

Scientific researchers are increasingly using social media. In 2014, *Nature* emailed thousands of researchers about their use of social media.⁵ They received 3,500 responses from 95 different countries. The most popular social networking sites were academically oriented and included Google Scholar and ResearchGate. On the other hand, although used by fewer researchers, Twitter was the most interactive social media platform. Interactions included posting work, following dis-

cussions, and actively discussing or commenting on research. Another study investigated scientists' use of Twitter specifically; more than 25,000 scientists on Twitter were identified.⁶ The authors found that Twitter is used across scientific disciplines, although its use is more prevalent among social scientists and information scientists. Although scholarly sites are referenced, scientists use Twitter for both professional and personal content.

While social media use by surgeons and medical professionals has been increasing, its use seems to lag behind that of the American public. In 2010, a survey of 315 members of the American College of Surgeons (ACS) suggested that 23% used Facebook daily, while 45% never used it.⁷ Only 5.6% of those surveyed used Twitter daily, while 79% reported never using it.⁷ By 2015, ACS reported that the number of Twitter *followers* (or users who signed up to receive messages from the ACS Twitter account) had increased from 907 in 2010 to 19,030 in 2014.⁸ Another social media platform used by surgeons includes the ACS communities, which was

launched as an online platform for members to discuss current topics in surgical care and health care policy behind a firewall, that allowed private discussion of patient details among members.⁸ The only study of social media use by colorectal surgeons specifically was performed in the United Kingdom. This study was a cross-sectional study of surgeons identified from the Association of Coloproctology of Great Britain and Ireland database who had LinkedIn and Twitter accounts; the study evaluated only patterns of use and did not delve into reasons for use or perceived impact.⁹ Further study is necessary to determine current patterns of social media use and perceived impact by colorectal and other surgeons in the United States. Other specialties have also studied social media engagement and use among medical specialists.¹⁰⁻¹⁷

How and Why Is Social Media Used by Patients, Providers, and Others?

In 2015, the Society of University Surgeons' Social and Legislative Committee published a white paper stating that "Social media is a necessary component of surgery practice."¹⁸ In this paper, the committee members stressed that the question is not *whether* to use social media but rather *how* to use social media.¹⁸ Several common uses of social

media by patients, surgeons, and health care institutions are presented in ► **Table 2**. Several of the topics discussed below will be discussed in greater detail in this issue of *Clinics of Colon and Rectal Surgery*.

Dissemination of Information

In addition to scientists posting their research, medical journals are increasingly using social media to attract readers to their scientific content. Although randomized trials evaluating whether social media increases reader engagement with journal content have had mixed results,^{19,20} many surgical journals routinely post content. Furthermore, many surgical journals have social media editors including but not limited to *Diseases of the Colon and Rectum*, *Annals of Surgery*, *The Journal of the American College of Surgeons*, and *The Journal of Surgical Research*. Novel strategies to increase attention to postings of journal content have also been employed such as use of a graphical or #VisualAbstract, which is a concise visual summary of the main findings of an article. Some data suggest that this does drive traffic to journal Web sites by up to threefold.^{21,22} Furthermore, journals are using alternative metrics called *altmetrics* to identify an article's impact.²³ Altmetrics refers to a composite score that weights attention received by a journal article in social media and by news media.²³ There have been

Table 2 Uses and examples of social media in surgery

Category of social media use	Description	Examples of social media platforms for this use	Specific examples
Dissemination of information	Live-tweeting conferences	Twitter	Use of Twitter to document the Academic Surgical Congress, the joint meeting between the Association for Academic Surgery and the Society of University Surgeons ²⁵
Information exchange	Online journal clubs	Twitter	Use of Twitter to set up online journal clubs such as the International General Surgery Journal Club (IGSJC) ⁵⁴
	Professional networking	American College of Surgeons (ACS) Communities	Use of ACS communities for peer consultation and for networking ⁸
Education	Patient education	Facebook	Use of Facebook to increase public knowledge about living kidney donation ³⁵
	Medical education	YouTube	Use of online videos by medical students and residents to prepare for surgery ³⁸
Research	Patient recruitment	Facebook	Use of Facebook to recruit participants for a smoking cessation trial ⁵⁵
	Community consultation and public disclosure for exception from informed consent	Facebook	Use of Facebook for community consultation for the Pragmatic, Randomized Optimal Platelet and Plasma Ratios (PROPPR) and Prehospital Tranexamic Acid Use for Traumatic Brain Injury (ROCTXA) trials ⁴⁴
Advertisement	Monitoring public perceptions (i.e., consumer ratings about hospital quality)	Yelp Foursquare	Use of Yelp to identify additional domains beyond those assessed by the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey ⁴⁹

studies that suggest that the number of times that an article has been cited in a tweet, or *tweetations*, predict journal article citations.^{3,24} Since tweets tend to occur shortly after an article is published, while citations tend to occur over several years, tweetations may be a more accurate representation of scholarly output for young scientists.

Another use of social media to disseminate information is through *live-tweeting* of a surgical meeting. Live-tweeting is when people post on Twitter during an ongoing event. Multiple surgical societies, both in the United States and internationally, have described live tweeting.^{25–27} Tweets can be identified as belonging to a particular conference based on a hashtag (#) followed by a word or phrase to denote that meeting. For example, #ASCRS16 was used to represent the annual scientific meeting for the American Society of Colon and Rectal Surgeons. Furthermore, conference-related Twitter activity can be tracked if the meeting is registered on Symplur.com. The 2016 ASCRS meeting had 452 participants send 3,056 tweets between midnight of April 30 and 11:59 PM May 5, 2016.²⁸ This resulted in over 6.2 million impressions, which represents the number of times #ASCRS16 tweets were received by Twitter feeds. This has created some controversy in the realm of intellectual property, as Twitter can be considered a part of the public domain. Different societies have taken alternate and individualized approaches to dealing with this problem. This topic is covered further in this issue by Mayol et al.²⁹

Twitter can be used at conferences by the organizers to promote upcoming activities, to convey important information, or to thank or congratulate presenters.³⁰ Twitter can be used by conference attendees to comment on or ask presenters about their work, to promote their own work, to reach out for collaboration, and to organize social activities.³⁰ In a report of the 2013 Academic Surgical Congress, which is a joint meeting between the Association for Academic Surgery and the Society of University Surgeons, the three main categories for tweets were promotional, presidential session content, and social.²⁵ Twitter can also be used by those not in attendance to learn about presented studies. One blogger wrote “I enjoyed watching this conference unfold from the comfort of my living room and call room.”³¹ Thus, social media can be used to disseminate information more efficiently and to exponentially increase the reach of information instantly to a worldwide audience.

Information Exchange

A final area of information dissemination can be surgical journal clubs. The history of these is outlined in a separate manuscript within this journal, though the information can be accessed long after the event itself. These journal club discussions can be found afterward in a variety of formats including downloadable PDFs (i.e., #RASJACS discussions³²) and online blog archives (i.e., *Annals of Surgery* Journal Club³³).

Education

Social media can be used for information exchange and as a source of education and support by the public. For example,

Facebook is the most commonly utilized social media platform, when compared with Twitter and YouTube, by the public in acquiring knowledge about brain aneurysms and subarachnoid hemorrhages.³⁴ The Facebook pages are run by patient support groups and nonprofit foundations. Facebook can also be used by health care providers to increase public knowledge about diseases and surgical options. A cross-sectional survey of kidney transplant candidates and recipients suggested that about half utilize Facebook. Half of patients surveyed also stated that they would be willing to post about living kidney donation on their Facebook page, which suggests a potential strategy for increasing public knowledge on this topic.³⁵ While social media can help disseminate information about diseases, there are also potential unintended consequences to patients obtaining information online. These include but are not limited to inaccurate information regarding disease diagnosis or management, patient’s confusion related to conflicting information, inability to judge accurate from inaccurate information, and psychological distress when sharing information online.³⁶ Further research is necessary to understand the resultant problems and to identify potential solutions.

Medical students, residents, and fellows also use a variety of social media platforms. However, their use of social media may be for both personal and professional reasons. In a systematic review and meta-analysis, Guraya found that while 75% of medical students utilize social media, only 20% do so with an educational intent.³⁷ While multiple social media platforms may be used, surgery as a specialty is particularly amenable to those that allow videos such as YouTube. In a single-institutional survey, 90% of respondents reported using videos to prepare for surgery with YouTube being the most popular media platform.³⁸ Not only are videos a source of education and preparation for trainees,³⁸ but also for practicing surgeons.³⁹ As with other online content, however, the quality of the educational material cannot always be guaranteed.

Research Recruitment and Consultation

Social media platforms have been utilized in recruiting patients for studies and trials.^{40–42} A systematic review of studies that utilized social media and at least one other method for recruiting patients to an interventional or observational study was performed.⁴² This study reported conflicting results regarding the relative effectiveness of social media as compared with other methods for recruiting patients. However, the study suggested that social media may be preferable for recruiting populations that are hard-to-reach, that have specific disorders, or for observational studies. Variation in the effectiveness of social media may be related to the effort expended as measured by the number of social media Web sites, the frequency of use, and the extensiveness of the strategy.

Social media has also been used for obtaining exception from informed consent (EFIC) for trials that could not be conducted without such a waiver.^{43,44} However, there is limited published experience with using social media to obtain EFIC.^{43,45} One study reported using Facebook for obtaining EFIC at their institution for a multicenter trauma

resuscitation trial.⁴⁴ Moving forward, strategies for identifying and reaching the appropriate target audience and for measuring success are needed.⁴⁶

Advertisement and Ratings

Social media platforms that have been used in rating hospital and surgeon performance include location-based services such as Yelp and Foursquare, and also third-party rating Web sites such as Healthgrades as well as Vitals and government-sponsored services such as hospital and Physician Compare on medicare.gov. These services may have been designed for use with ratings of restaurants and local businesses. They rely on crowdsourcing, which is the process by which assistance (i.e., ideas, funding, support) is solicited from a large number of people, usually through the internet. Yelp relies on consumer reviews and ratings obtained from crowdsourcing to guide users to restaurants and other businesses. Yelp also allows businesses to promote themselves. In a study performed in 2014, Yelp was the only free, publicly available, commercial Web site whereby multiple hospitals in the United States had scores.⁴⁷ Similarly, Foursquare is used by consumers to obtain personalized recommendations for restaurants or venues for entertainment based on their prior history. Like Yelp, Foursquare can be used by businesses to advertise to customers. A 2014 cross-sectional review of 3,371 U.S. hospitals evaluated their activity across Facebook, Twitter, Yelp, and Foursquare.⁴⁸ The survey showed that more than 90% of hospitals had Facebook, Foursquare, and Yelp accounts, and half of hospitals had accounts on all four social media platforms.

Reasons for hospitals to own social media accounts included the following: for monitoring public perceptions,⁴⁹ for identifying quality improvement targets,²⁰ and for potentially changing public perceptions and behavior.^{50,51} With regard to patient perceptions, a study compared Yelp data to Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey results and found a moderate correlation between the mean Yelp rating and the overall HCAHPS score ($\rho = 0.50$).⁴⁹ Moreover, Yelp provided information on 12 additional domains not included as part of the HCAHPS survey. Given the increasing emphasis on delivering patient-centered care and on achieving high patient satisfaction, hospitals and surgeons may need to more actively utilize social media to improve their reputations. Overall, doctor-rating Web sites have data on approximately 66% of physicians, with an average of seven quantitative and three narrative reviews per person.⁵² However, in a survey of 2,360 physicians aimed at identifying how physicians used and responded to these ratings, when done at all, process improvement measures to improve ratings were mostly aimed at communication with patients (scheduling, office workflow, etc.).⁵³ The overall impact of these rating Web sites on referral patterns remains unclear.

Conclusion

In summary, social media is becoming increasingly used by surgeons and researchers. There are multiple advantages to

engagement in social media such as improved dissemination of research findings, professional networking, education, research study recruitment, and advertisement. However, there are also potential unintended consequences and ethical issues that need to be considered as surgeons' social media presence expands. Nonetheless, there is an expanding evidence base that social media can have a significant impact on professional metrics, such as for scholarly productivity or patient satisfaction. Although not all surgeons may choose to be active on social media, all need to be aware of its impact.

Disclosure

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