Clinical Trials in the Era of Digital Engagement: A SWOG Call to Action

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INTRODUCTION

Clinical trials advance health care by testing new disease treatment and prevention strategies and offering volunteers an opportunity to access novel therapeutics. However, only 5% of those eligible for cancer clinical trials reportedly participate,¹ and lack of accrual accounts for perhaps the single biggest reason trials are terminated before they are completed.² There continues to be a growing interest in the role that social media platforms, primarily Facebook and Twitter, may play in boosting trial accrual³⁻⁵ driven by the wide use of social media by adults within the United States.⁶ That the widespread usage of social media is influencing health care in general has been shown. For example, a survey by Weinberger⁷ reported that the information learned on social media had an impact on the subsequent health care decisions in 40% of respondents and influenced the choice of health care providers in 41%. Among respondents < 25 years of age, 90% used social media as a major source of health information.⁸ Patients with cancer have formed social media communities around unique needs and expectations of people, going beyond communities based on a particular type of cancer and forming around specific subtypes. One notable example is the online community for individuals with ROS1-positive lung cancer, called the ROS1ders. In addition to providing peer-to-peer education, expert guidance, and networking, they now sponsor the Global ROS1 Initiative, an international partnership in collaboration with the Addario Lung Cancer Medical Institute, as an open-access data biorepository.

The SWOG Cancer Research Network part of the National Cancer Institute's National Clinical Trials Network has conducted over 1,300 cancer clinical trials since 1956 and is acutely interested in issues pertaining to clinical trial recruitment. The Digital Engagement Committee of SWOG has spent much time discussing the role that social media could play in the cancer clinical trial enterprise and presents this summary of our discussion. The purpose of this Editorial is to begin a conversation about whether *and* how to incorporate social media as part of best practices for research, while highlighting stakeholder perspectives and challenges.

PATIENTS AS STAKEHOLDERS

Historically, patients were viewed as potential participants in clinical trials; their input was not solicited at any stage of trial design and development. This changed in the era of HIV/AIDS, where activists launched an effective "lay incursion," going beyond the politics of the time, generating knowledge within science and medicine, and ultimately presenting themselves as experts in their own right, recognized within medical communities, and thereby transforming scientific research, clinical trials, and, ultimately, advancing treatments for AIDS.⁹ These efforts changed the landscape of clinical research beyond infectious diseases and affected cancer research in the late 1990s, with the inclusion of patients on National Cancer Institute panels. This movement to include the patient voice in all aspects of clinical trial development continues.¹⁰

Beyond advocates and their roles in the planning of clinical trials, patients as a whole represent an exponentially vocal presence in the era of social media, largely through participation in online communities (eg, Patients Like Me, Inspire, and Smart Patients) and social media channels (eg, Facebook and Twitter). Whether public or private, patients are joining these communities and discussing issues of common concern and are themselves being advised by others who have lived through similar experiences (ie, influencers). These online communities provide a reliable platform for patients to connect, whether that be for emotional or informational support.⁸ Private forums allow members to discuss any issue of relevance to them, "protected" from clinicians and those not otherwise affected by their shared illness or experience.

Inasmuch as they provide support for patients and caregivers, these forums can inadvertently affect clinical trials in positive, and negative, ways. For example, moderators or influencers may use their platform to raise the profile of a specific trial, which in turn, can help drive accrual. It is also conceivable that volunteers in any one clinical trial may use these forums to share common experiences in any one particular trial, including discussing toxicities and management tips far from the eye of the research team

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CONTEXT

Key Objective

Clinical trials are crucial to advance evidence-based treatment; however, patient accrual and retention challenges continue to hinder progress in clinical research. Social media brings enormous potential to improve how clinical research is conducted and how results are disseminated.

Knowledge Generated

SWOG Cancer Research Network's Digital Engagement Committee has highlighted this issue in its deliberations and presents a summary of our discussions as it relates to 3 stakeholder groups—patient advocates, researchers, and trial sponsors.

Relevance

We delineate multiple considerations to move forward in developing best practices to increase the use of social media for research purposes.

and sponsor. Such efforts have been documented in the lay press; in a clinical trial for patients with amyotrophic lateral sclerosis, volunteers were sharing their experiences in an online community, reportedly in an attempt to unblind their treatments and delineate treatment efficacy by sharing their individual experiences in the trial.¹¹⁻¹³ How to address and partner with patients who participate in these communities remains a singular but important facet of clinical trials to address.

THE RESEARCHER AND SOCIAL MEDIA

Clinical researchers are legally bound to follow the principles of Good Clinical Practice, which aim to protect the rights, welfare, and privacy of those volunteers participating in research. These regulations are also meant to ensure the quality and integrity of data collected and to maintain the confidentiality and fidelity of protocols. Breaches can result in significant penalties to the individual researcher and to their institution in the form of fines and other federal action. Above all else, researchers must bear in mind the guiding principles of autonomy, beneficence, and justice embedded in The Belmont Report,¹⁴ principles that govern traditional or digital human research endeavors, which are listed in Table 1.

Given these constraints, what role *should* social media play for the clinical researcher? As noted earlier, there are potential gains to be made with more widespread adoption of social media as a research tool. Yet, data suggest that the risks of engagement, coupled with the demands of routine clinical practice, are preventing this from happening. Sedrak et al¹⁵ performed focus groups with clinicians from both academic and community settings, and reported that although they acknowledged that social media held certain promise, particularly to help increase trial awareness and availability, key barriers existed, including the risk of misinformation and the burden of participation.

The question then becomes, *can* clinicians afford not to engage on social media? We are living in an age where patients are finding information independent of clinicians; indeed, as Thompson¹⁶ points out, the “Internet is one of

the first sources people use after a cancer diagnosis.” Yet, because information on the Web is unfiltered, there is no objective way to gauge the quality of all the data now available, and the risk of inaccurate information weighs heavily. In a survey by Weber Shandwick⁶ of 1,700 Americans > 18 years old, 83% expressed that they were either “very” or “somewhat” concerned about health misinformation on social media, and over half of those surveyed still reported satisfaction with information derived from clinicians (eg, medical doctors, nurse practitioners, nurses, and physician assistants among them). In a time when misinformation is rampant online, and a time when innovations in treatment require higher rates of clinical trial participation, clinicians may have no option to ignore social media.

INSTITUTIONAL REVIEW BOARDS IN THE DIGITAL ERA

A core responsibility of an institutional review board (IRB) is to protect study volunteers from potential harms of clinical research. However, there is no federal direction on how broad (or narrow) a scope of review is required as it specifically relates to social media use for clinical research, especially as it relates to trial promotion and recruitment. In today's digital communication environment, social media use is widespread, and in our opinion, is directly relevant to how information related to any particular clinical trial is discovered. For example, the use of Twitter to highlight newly opened trials or highlights from a national conference is as likely to come from patients or patient advocates who are actively engaged in helping their community as it is by members of the medical research team. Such activities by nonclinicians do not fall under the purview of any one IRB. In contrast, the identical information tweeted by a member of the clinical trial team may be reasonably construed as advertising, and it would require IRB review. Such a disconnect represents just one type of barrier facing principal investigators and trial teams, and the increased administrative burdens placed on IRBs, already facing review of trials of increasing complexity. How to respond to the ever-changing and immediate ways information is communicated must be a major focus of IRBs.

TABLE 1. Ethical Principles as They Apply to Social Media and Clinical Trials

Ethical Principle	Characterization	Relevance to Social Media
Autonomy	Ensure meaningful informed consent has been obtained	Institutional review should be proactively sought and approval authorized whenever deemed necessary.
Beneficence	Adherence to the principles to (1) do no harm and (2) maximize benefits and minimize potential harms	Ensure balance in activities by being mindful of word choice (eg, a “novel” trial, rather than a “promising” or “exciting” opportunity). Maintain transparency as it relates to disclosure of relationships with industry, particularly if relevant to a specific trial.
Justice	Clinical trials as an equal opportunity	Be mindful of the online audience and strive for inclusivity.

THE ROLE OF TRIAL SPONSORS

Clinical trials are generally sponsored by either nonprofit entities, including government agencies such as the National Cancer Institute (NCI), or for-profit entities, including pharmaceutical or biotech companies. Although more and more sponsors are aware of the potential of social media to aid clinical trials, the lack of universal guidance on how to implement this, coupled with the few resources available to create study-specific digital engagement plans and provide regulatory oversight, are critical issues facing them. Perhaps the biggest gray area is the *intent* of social media use by the sponsors and whether it represents an opportunity to publicize the trial (ie, advertisement) or to educate (ie, engagement). These have vastly different implications for the clinical trial enterprise from multiple perspectives, including regulatory review, data collection, patient confidentiality, and finances.

PRACTICAL QUESTIONS FOR BROADER CONSIDERATION

Is It Time to Ask Study Volunteers to Sign a Code of Conduct?

The current legal contract in clinical trials is entered into by the sponsor, the principal investigator, and his/her institution(s). The agreement, often referred to as a Confidentiality Disclosure Agreement, requires that no data be disclosed during the conduct and analyses of a trial. Whether a similar “code of conduct” be required of study volunteers should be carefully considered. Such an agreement could safeguard the integrity of the clinical trial by defining “do’s and do not’s” of study participation, with particular attention to social media use. However, such a code cannot infringe on the volunteer’s rights, including freedom of speech. Still, a possible benefit of a new code would be to acknowledge that any person entering a study is not a passive partner, but a key stakeholder, and such an

agreement would serve to recognize their role in the trial process, including trial completion. Expectations for the investigator could also be included in this agreement and could specifically state researchers’ responsibility to ensure trial participants are kept updated on the study’s progress and invite them to review the final trial data and comment on the analyses. At its most innovative, the code could specify that participants retain access to their own individual data.

Should Social Media Participation Be a Required Activity of the Clinical Researcher?

The sheer breadth of information online should provide sufficient incentive for any clinician to engage online for altruistic reasons. Such a presence can help confront myths, point the public toward reliable sources, and, pursuant to this article, highlight critical questions and important clinical trials. As such, we believe that successful trials will hinge on the presence of the research team on social media. This does not imply that researchers must commit to active use of Twitter or Facebook, nor does it mean they must bear the responsibility of generating trial-specific content personally. As an example, the SWOG Cancer Research Network is committed to creating a social media toolkit to accompany new trials. Our aim is to give principal investigators access to IRB-approved information from the time their study is opened. This way, their team and respective institutions can raise awareness of the study on social media and encourage enrollment. We acknowledge there are no “best practice” recommendations to guide researchers on how to respond to inquiries or questions that might result from social media outreach, but one mechanism to drive acceptance will be education and support on the professional use of social media.

Is There an Appropriate Scope of IRB Review Related to Social Media Use?

In the United States, IRB guidance comes from the Office of Human Research Protections (OHRP), based in the US Department of Health and Human Services, yet the department does not provide specific guidance on this topic. There are available resources however, including the National Institutes of Health “Guidance Regarding Social Media Tools,” which contains a list of questions for researchers to consider when preparing their social media plan for

TABLE 2. Key Questions Regarding Social Media and Clinical Trial Communication

Question
What constitutes “passive” versus “active” social media recruitment?
What level of review is required of clinical research teams who engage in trial-specific conversations on social media?
What responsibility do research teams have to monitor social media?

TABLE 3. The Four Principles to Consider for Social Media Use: Embrace, Adapt, Insights, and Innovate

Principle	Description
<i>Embrace</i> social media as a mindset	Take a disciplined approach to planning
	Establish goals based on trust and transparency, not just return on investment
	Focus on being accessible and relevant
<i>Adapt</i> internal operations	Shift from silos to network
	Revamp processes to be relevant at the point of need
Turn social network conversations into <i>insights</i>	Don't just talk and listen, analyze and integrate
	Sift through the noise of social data
<i>Innovate</i>	Establish enterprise social media
	Create a forum to turn listening into innovation
	Collaborate across the industry

submission to the IRB.¹⁷ Despite this, it would be preferred if the OHRP clearly explained what social media posts should—and should not—contain. Some questions that could result in much-needed directions are listed in Table 2.

How Should Sponsors Collaborate With Stakeholders on Social Media Activities?

Sponsors have the expectation that principal investigators, investigators, and their staff will actively identify potential candidates for trial enrollment within their own practices and through their own networks. However, given the challenges in recruitment, it is clear that more patients are needed to help trials complete. To meet these challenges, patient advocates are being engaged at the earliest points in the clinical trial enterprise, having opportunities to help in the development of clinical trial concepts. But should they do more? Should they reach out to patient communities of interest to them or engage health care influencers on social media? Although there may be tangible benefits to doing so, sponsors should be transparent in their goals and objectives and identify themselves or their collaborators openly. We acknowledge that this step requires a larger conversation and includes a much broader stakeholder group, one that also includes those involved in online patient communities.

DISCUSSION

Our overarching goal is to broaden the conversation related to social media and clinical trials far beyond the confines of Digital Engagement and the SWOG Cancer Research Network, acknowledging the new era of networked online communication and underscoring the potential value inherent in this endeavor (Table 3).

Although there is much we do not address in this article, we aim to modernize trials and address recruitment through careful and deliberate use of social media. To do so will require the collaboration of key stakeholders—trial volunteers, patient advocates, researchers and their organizations, and trial sponsors—and consensus on how institutions and organizations interact in the digital space.

In summary, the use of social media in clinical research is still in its early phase, which provides an opportunity to achieve consensus related to legal, ethical, and inclusive best practices. By bringing the considerations of different stakeholders to light, we hope to spur conversation at all levels, from the patient, to the physician running a trial, to our industry partners, and upward toward the NCI and the National Institutes of Health, the largest public funder of biomedical research in the world.

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