


## POSITION STATEMENT

# Using social media for patient care, research, and professional development: A North American Society of Pediatric Gastroenterology, Hepatology, and Nutrition position paper

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## Abstract

The advent of social media has changed numerous aspects of modern life, with users developing and maintaining personal and professional relationships, following and sharing breaking news and importantly, searching for and disseminating health information and medical research. In the present paper, we reviewed available literature to outline the potential uses, pitfalls and impacts of social media for providers, scientists and institutions involved in digestive health in the domains of patient care, research and professional development. We recommend that these groups become more active participants on social media platforms to combat misinformation, advocate for patients, and curate and disseminate valuable research and educational materials. We also recommend that societies such as NASPGHAN assist its members in accessing training on effective social media use and the creation and maintenance of public-facing profiles and that academic institutions incorporate substantive social media contributions into academic promotion processes.

CME module may be found at <https://learnonline.naspgghan.org/jpgn2>

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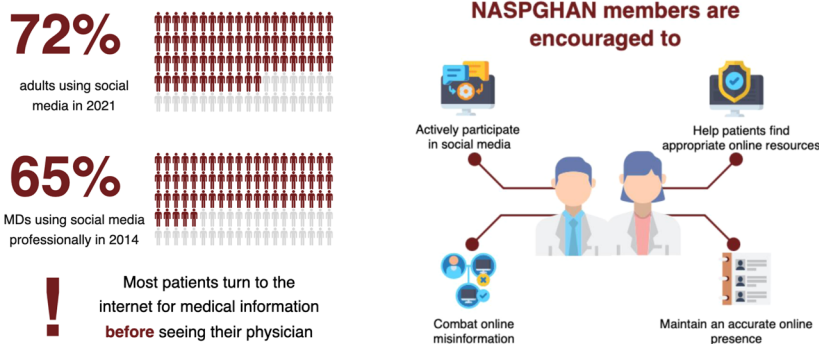
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**Funding information**  
None

## Social media for pediatric gastroenterology providers and researchers



Using Social Media for Patient Care, Research, and Professional Development. Silverman et al. (2023)

JPGN  
Journal of Pediatric Gastroenterology and Nutrition

### KEYWORDS

advocacy, healthcare, medical education, research, social media

## 1 | INTRODUCTION

Social media is transforming how medicine is practiced around the world, including in our field of pediatric gastroenterology, hepatology, and nutrition. There is a growing need for pediatric gastroenterologists and hepatologists to understand the importance and potential of social media use in patient care, advocacy, research, medical education and professional advancement. Although social media was at one point primarily used by young adults, usage has rapidly grown to better represent the broader population. In the United States, the percentage of adults using social media has risen from 5% in 2005 to 72% in 2021. The most commonly used social media platforms in 2021 in order of popularity were YouTube, Facebook, Instagram, Pinterest, LinkedIn, Snapchat, and Twitter (recently rebranded as X).<sup>1</sup> Each platform has its unique characteristics—for example, YouTube primarily features video content while X posts consist of short-form text with the option to attach media. The users (and therefore the audience) of each platform differ as well. For example, younger adults are more likely to use Instagram than older adults while this gap is much smaller for Facebook.<sup>1</sup>

Patients are increasingly turning to social media not only for medical information but to connect with both other patients and providers. Even before the widespread use of social media, half of surveyed patients were already turning to the internet for medical information before seeing their physician.<sup>2</sup> In addition to the information provided by traditional online resources, social media provides social support in the forms of emotional support, information support, and networking that can promote patient empowerment and psychological well-being.<sup>3</sup> Social media has the potential to augment our existing healthcare delivery systems

### What is Known

- Patients and families are increasingly turning to social media for medical information and to connect with both other patients and providers.
- Social media presents opportunities for medical providers and organizations for multiple aspects of our profession, including patient care, medical education, advocacy, research, and professional networking and advancement.

### What is New

- In this position paper, we summarize the literature on the impact of social media on our profession including both opportunities and challenges.
- We provide guidance on how individuals and our organization can use social media platforms to advance their clinical practice, education, advocacy, research, and professional development efforts.

by enhancing physician-patient communication and enabling better informed and supported patients and families. However, the dangers of misinformation, invasion of privacy, blurring of professional boundaries, and damaging comments about providers or institutions remain concerns.<sup>4</sup> Inaccurate information on pediatric gastrointestinal, liver and nutrition topics is widespread on social media and continues to grow.<sup>5</sup> It is therefore important for our NASPGHAN community to recognize the role of social media in meeting patient and family needs not met by direct interactions with

healthcare professionals and the responsibility of our community to participate in this online discourse.

Social media presents opportunities for providers and medical organizations beyond patient care, including in medical education, advocacy, research, and professional networking and/or advancement. A survey of over 4000 physicians conducted in 2014 found that 65% used social media for professional reasons and that use is steadily increasing. Physicians are using social media to communicate with colleagues regarding patient issues, learn from experts, and network within online communities.<sup>6</sup> Social media allows for sharing of not only traditional medical literature but also multimedia, webinars, virtual classrooms, and other resources that can be used to improve clinical education. There is growing evidence that the promotion of research on social media increases citations and impact while also fostering collaboration.<sup>7–9</sup> The potential of social media in professional development extends beyond individuals as organizational social media presence has been associated with national ranking among gastroenterology and gastrointestinal surgery divisions.<sup>10</sup>

The objectives of this position paper are therefore to review the impact of social media on our profession and to provide guidance on how individuals and our organization can use various social media platforms to advance our clinical practice, patient education, advocacy, research, medical education, and professional advancement. We hope this paper will supplement the existing primers on social media for gastroenterologists.<sup>11,12</sup> As a community, we can use social media to improve patient care outcomes for children and to advance our individual professional careers and our entire field.

## 2 | METHODS

The writing group for this position paper included members of the NASPGHAN Technology Committee and an additional pediatric psychologist (MvT) and pediatric gastroenterologist (RV) with extensive experience on the topic. We reviewed the literature on social media and medicine, including conducting searches in PubMed on the growing role social media plays in medicine (PLL, PV) and the impact of social media on patient care (NM, ERB), research (JH, VR), medical education (JS, RV), professional development (AC, MvT), and professionalism (AC, MvT). Non-English literature was excluded. This review was supplemented by materials from a variety of other sources, including reputable news outlets and social media itself. A literature review was conducted through May 2022. Sections were completed by pairs of authors with review and revisions by the rest of the writing group. Sections were combined and revised into the final

manuscript by the first author (JS) and the final manuscript was approved by the rest of the writing group before submission. Recommendations were proposed by authors based on the available literature and expert opinion. Recommendations were then discussed and revised by the writing group during a series of virtual meetings. Final recommendations are those of the author group with unanimous agreement based on the available literature and expert opinion and are summarized in Box 5. We did not use a grading method to report the quality of evidence given the limited quantity and quality of evidence available.

## 3 | SOCIAL MEDIA AND PATIENT CARE

Social media has become a primary source of healthcare information and support for patients and their families. The most popular social media platforms used by patients include Facebook, Twitter, YouTube, Instagram, Snapchat, and WhatsApp.<sup>13,14</sup> In a study of surveys completed by 205 pediatric surgical patients (including patients who had undergone gastrointestinal surgery), 95.6% of respondents reported using social media, with 35% using social media up to five times a day and another 30.5% using it 6–40 times a day. Respondents used social media to update friends and family (65.5%), for medical information (60.1%), after a diagnosis (52%), after a medical visit (44%), and to make healthcare decisions (26.5%).<sup>15</sup> Adolescents with IBD surveyed in another study reported rarely using social media to search for health information, or to connect with others with IBD, however, these findings may have been reflective of the younger age of the surveyed group.<sup>16</sup> We searched Twitter to examine inflammatory bowel disease (IBD)-related activity and noted that among IBD-related accounts, the Crohn's and Colitis Foundation (@CrohnsColitisFN) has one of the largest followings, with more than 34,000 followers. This account provides updates on education, research, and support with frequent interaction with its followers.

While families may seek information online, the majority would still prefer to obtain this information directly from healthcare practitioners, however, barriers exist that may prevent families from meeting with physicians directly.<sup>17</sup> Families may need to travel long distances for physician visits, requiring both transportation and extended time off from work. While telehealth video visits may mitigate these concerns, these too may be associated with their own barriers that may limit their use including still requiring time off work, not being provided by the patient's practitioner, no access to high-speed internet or language barriers. Parents may feel that there is a stigma around their child's diagnosis and therefore feel uncomfortable

discussing this with a physician in person. On the other hand, the online presence of a provider or institution may increase a family's comfort with seeking medical attention. The social media presence of an institution can increase visibility and highlight the expertise of the institution's providers and support staff. A provider's online profile can facilitate a personal connection and develop trust, leading to improved patient care and patient satisfaction.

Physicians, researchers and institutions can use social media to quickly share information about complex public health issues. Physicians can leverage both social media and traditional media to share relevant peer-reviewed research combined with personal stories from their experience in caring for patients facing particular issues. Large numbers of physicians were motivated to do so to voice their concerns about gun violence in the United States.<sup>18</sup> Social media has also been used to as part of advocacy efforts towards a ban on high-powered magnets that pose a risk for children.<sup>19</sup> Physicians may also use social media to follow patient advocacy groups and topics and to interact with supporters of these issues to further their cause.<sup>20</sup> Advice and guidance for physicians looking to use social media for advocacy has been included in a number of primers on social media use for medical professionals.<sup>21,22</sup>

In summary, patients and their families routinely use social media to obtain and share medical information, access peer support and research their providers and healthcare institutions. Healthcare providers and institutions can be a part of this process through active social media participation. This participation can take the form of content creation, curation or amplification of high-quality resources and accounts to follow on a variety of social media platforms. Another important aspect of active participation is the review of social media conversations on relevant topics to understand the information and perspectives being shared by colleagues, peer institutions, patients and families.

**Recommendation 1: We encourage providers, scientists and medical institutions to be active participants on social media and incorporate this participation in their patient education and advocacy efforts.**

Although patients and families have become comfortable turning to social media for health-related reasons, many healthcare professionals still view social media participation as challenging, controversial, and dangerous.<sup>23–25</sup> Despite these concerns, social media use among physicians is widespread, with a 2011 study reporting 87% of physicians in the United States using social media for personal use and 67% for professional use,<sup>26,27</sup> and the value of disseminating knowledge through social media platforms has increasingly been recognized.<sup>24,25,28</sup> Many pediatric gastroenterologists have used the Pediatric GI Bulletin Board email listserv

to obtain informal patient-care advice, however, social media platforms provide additional opportunities not provided by an email listserv alone. When used prudently, social media platforms offer a valuable avenue for patient education, advocacy, individual promotion and professional development. Nonetheless, social media platforms present genuine risks to patient safety and medical liability. Providers should use appropriate judgment and a careful, evidence-based approach when engaging with controversial topics on social media and be aware of how to deal with potential unwanted responses. More details on these strategies are outlined later in this section. It is also imperative that providers recognize the boundary between connecting with families and providing medical advice. Providers must also ensure that there are no breaches of confidentiality or privacy legislation present before publishing on social media platforms.<sup>12</sup>

Over the last decade, many public health organizations, hospitals, and other medical centers have used the power of social media to provide medical information to the public.<sup>6,29,30</sup> While healthcare professionals continue to express significant barriers and concerns regarding the adoption of these tools, academic and private medical institutions are an ideal venue to foster interprofessional conversations about the potential dangers of social media.<sup>6,23,29</sup> To minimize the risk to healthcare organizations, employee guidelines must be established regarding the proper use of social media.<sup>6,31</sup>

Among the many significant challenges for the healthcare sector in social media, handling misinformation is a crucial role for all physicians.<sup>6,24,25,30</sup> Physicians should be cautious about sharing information beyond general, nonspecific medical advice on social media to minimize liability. Guidelines on social media use have been published by many medical societies in addition to any institutional or organizational guidelines that may exist.<sup>31–33</sup> Both the spread of medical misinformation and personal attacks on scientists and healthcare professionals who share health information on social media have been on the rise. For decades, academic medical institutions have failed to counteract the rising voices of nonmedical experts, however, there have been more concerted efforts by many healthcare providers, scientists and healthcare nonprofit organizations to actively combat misinformation on social media. In addition to the efforts of individual healthcare provider accounts, we recently have seen the rise of groups of healthcare providers organized to amplify accurate medical information.<sup>34</sup> Many prominent professional organizations, including the American Academy of Pediatrics, have put forth statements and resources to combat misinformation.<sup>35</sup> In 2021, the United States Surgeon General published an advisory titled "Confronting Health Misinformation" that provides guidance for healthcare providers and organizations on this topic, and



instructs medical associations and other health organizations to provide training for clinicians on how to address misinformation effectively.<sup>36</sup>

**Recommendation 2: We recommend that providers, scientists and medical institutions actively encourage and assist families in using reputable online sources of medical information including social media.**

### 3.1 | Social media and the spread of misinformation

Not all false health information is spread for the same reason and terms such as misinformation, disinformation and fake news are all often used, however, there are important differences between them.<sup>37</sup> Health misinformation is genuine, but misguided, such as advice to wear a coat outside to prevent catching a cold. This type of misinformation is common and 94%

of healthcare providers encounter it in their patients.<sup>38</sup> In contrast, disinformation is spread purposely to manipulate or deceive others. This is often disseminated to generate income, as in the promotion of “wellness” products that may be harmful. Last, there is fake news, where false information is purposefully spread with the intent to cause harm, often in the form of societal or political upheaval, or in order to wield power in the vacuum that follows.

The role of social media in the spread of false health information is not new but has been greatly magnified during the COVID-19 pandemic. Fake news became more frequently applied to health information, with examples including the spreading of reports questioning the existence of the SARS CoV2 virus or claiming COVID-19 vaccines would install magnetic 5G tracking devices.<sup>39</sup> Despite the different reasons for which false information is spread, it has been suggested the effects may be equally harmful as it “questions the knowability of information altogether.”<sup>40</sup> In fact, during the COVID-19 pandemic, trust in scientists among French people declined from 87% to 70% in 2020.<sup>41</sup> Although this effect was not observed in all countries, it shows that false information can erode trust in certain circumstances. Although the predominant theme in false health information over time has been focused on vaccine hesitancy—starting as early as when the first vaccine for smallpox was introduced—gastrointestinal and liver-focused misinformation is also common (see Box 1 for some examples).

The problem with false health information is not so much that it exists, but how easily it spreads due to social media. For example, in two studies, 11%–25% of the information in YouTube videos related to COVID-19 was incorrect, reaching 18–62 million people.<sup>45,46</sup> Compared to true information, false information was 70% more likely to be retweeted, reaching people six times faster, and far more likely to reach 1000–100,000 people.<sup>47</sup> The majority of false information is generated by just a few people. For example, 65% of anti-vaccine information sampled in one study was found to be produced by just 12 accounts.<sup>48</sup> In addition, accounts that are operated by computer algorithms (referred to as “bots”) take an active role by generating posts, comments and interactions with other accounts that spread disinformation much deeper and more broadly.<sup>49</sup> Not only does false information spread among the general public, but scientists also are not immune. In one study, false entries planted in Wikipedia showed up in hundreds of related scientific journal articles within months.<sup>49</sup>

Why is false health information so persuasive? One reason is that it manipulates fear.<sup>50</sup> Confirmation bias also plays a role<sup>50</sup>: “We see and hear what we believe, rather than believing what we see and hear.”<sup>51</sup> Add in the illusory truth effect (repeated information is more likely to be perceived as correct)<sup>52</sup> and it becomes clear why false health information is so persuasive. In

#### BOX 1 Examples of social media misinformation in GI

|                          |   |
|--------------------------|---|
| Miralax                  | Hussain <sup>42</sup> and colleagues reported a spike in website searches that coincides with media reports of neuropsychiatric side effects in children with the use of PEG 3350. After the spike, the interest in PEG 3350 never went down to pre-event levels.   |
| Coffee enemas            | The wellness industry has taken an interest in gut health and is touting unproven “treatments” from coffee enemas to aloe vera shots, to reduce ‘toxins’ and improve overall health.  |
| Rewilding the microbiome | The benefits of probiotics and the role of the microbiota in our gut and overall health is widely overstated in the media. This leads to potentially dangerous and unproven practices such as “rewilding the microbiome,” where feces from a person living in a non-industrialized society is injected into the rectum with the use of a turkey baster. <sup>43</sup> |
| Autism<br>Enterocolitis  | One of the most infamous examples of disseminating false health information—Andrew Wakefield’s now retracted study that the measles vaccine causes autism—was relevant to pediatric gastroenterology. Wakefield argued that autism was caused by a yet-to-be-identified enterocolitis. <sup>44</sup>  |

## BOX 2 Evidence-based strategies to combat false health information

- |                                   |   |
|-----------------------------------|---|
| Pre-bunking                       | <ul style="list-style-type: none"> <li>• This is the approach of inoculating people against false information.</li> <li>• This includes a forewarning of the false information to which one will be exposed, combined with counterarguments.</li> <li>• This is ideally done before one is exposed to misinformation.</li> <li>• For example, by discussing childhood vaccines with women at the beginning of their pregnancy rather than waiting until the baby is born and the mothers have potentially been exposed to misinformation for months. In a meta-analysis of 40 studies and 10,000 subjects, a medium-sized effect was found for pre-bunking.<sup>40</sup></li> <li>• There are also several games available that teach debunking skills, such as GoViral (<a href="https://www.goviralgame.com/books/go-viral/">https://www.goviralgame.com/books/go-viral/</a>).</li> </ul> |
| Teaching critical thinking skills | <ul style="list-style-type: none"> <li>• By teaching critical thinking skills as well as social media literacy skills, people can more readily identify false information.<sup>54</sup></li> <li>• Ask patients/families to consider where they get their information, and to question if the source is reputable.</li> <li>• Address common tools of false information such as relying on anecdotes, cherry-picking information, unfalsifiable information, pseudoscientific language, lack of peer review, and other logical fallacies.</li> </ul>  |
| Sharing credible accounts         | <ul style="list-style-type: none"> <li>• We are currently in an “infodemic” where the overabundance of information makes it hard to find <i>reliable</i> information.</li> <li>• Information overload increases the likelihood of spreading false information.<sup>55,56</sup></li> <li>• Sharing credible sites such as those for NASPGHAN’s <a href="http://GILKids.org">GILKids.org</a>, The American Academy of Pediatrics’ <a href="http://healthychildren.org">healthychildren.org</a>, the Crohn’s &amp; Colitis Foundation, the American Gastroenterology Association, the International Foundation for Functional GI Disorders, and others provides people with opportunities to access reliable health information.</li> <li>• These can also be included within printed summaries provided after outpatient visits.</li> </ul>   |

addition, there is evidence that debunking false information is not persuasive and may backfire, where attempting to correct the misinformation *increases* the belief in the false information.<sup>53</sup>

## BOX 3 Protective measures for engaging on social media

1. Share only evidence-based information or at least information for which there is wide expert consensus
2. Do not respond to those who aim to harass you. Block them instead.
3. Block bots—recognizable by accounts with strange names (e.g., Sara3816743), who are fairly new, and have low follower counts.
4. Be on the lookout for *sealioning*: “a harassment tactic by which a participant in a debate or online discussion pesters the other participant with disingenuous questions under the guise of sincerity, hoping to erode the patience or goodwill of the target to the point where they appear unreasonable.”<sup>59</sup> It is okay to respectfully step out of debate even if the other person accuses you of being unreasonable (or worse).
5. Know how to respond to online harassment such as the release of personal information or doxing (visit <https://shotsheard.org> or <https://righttobe.org>).

In sum, social media has given false health information a platform for exponential growth. Gastroenterology has largely been spared from major outbreaks of false health information, but this may change at any time. Some evidence-based strategies to combat health misinformation are provided in Box 2.

Given the spread of misinformation on social media, many healthcare providers and scientists have taken it upon themselves to inform the public of evidence-based health information. Yet, this has not always been without consequences. On January 10, 2020, Dr. Nicole Baldwin, a pediatrician, posted a video on TikTok in which she emphasized that vaccines do not cause autism. Five days later her practice was overwhelmed by phone calls from people who were not her patients (or even lived in her state) with messages including profanities and threats. Fraudulent one-star reviews of her then appeared on online physician rating sites.<sup>57</sup> She is not alone. Hundreds of medical professionals on social media have received abusive messages, been threatened, and had pressure placed on their employers to fire them. These traumatic events may lead to workplace scrutiny and the potential for job loss. The scare tactics also have a cooling effect on other doctors who may no longer wish to become active on social media, potentially further reducing the spread of evidence-based information. Despite these risks, as recommended by the United States Surgeon General and several other prominent professional organizations, healthcare professionals and scientists are encouraged to contribute to the online healthcare conversation.<sup>35,36</sup> Ways to protect yourself can be found in Box 3. Arora<sup>58</sup> and colleagues also argued employers should get

involved in counseling and supporting physicians and scientists who actively combat misinformation online.

Despite these risks, information on social media has the potential to impact a large audience. For example, Dr. Eric Topol has over 600,000 followers on Twitter with an account solely focused on sharing the newest medical research. One of the authors (MvT) posted a tweet on mRNA vaccines that reached 2.92 million impressions in 2021. Pediatricians successfully advocated over social media to extend the Children's Health Insurance Program, which Congress funded in 2018 for 6 more years, thereby protecting more than six million children. This demonstrates the benefit of social media engagement by healthcare providers, researchers and institutions.

**Recommendation 3: We recommend that providers, scientists, journals, and medical institutions play an active role in combating medical misinformation and science denialism.**

## 4 | SOCIAL MEDIA AND RESEARCH

### 4.1 | Social media in developing research collaborations

In a field where clinical practice can often be based on expert opinion or institutional dogma, social media can facilitate connecting those seeking a discussion about clinical management challenges and form collaborations that aim to answer these inquiries. Researchers increasingly use popular social media platforms like Twitter and Facebook to communicate ideas to both the general public and the research community, however, other platforms promoting research collaboration are also available. Historically, researchers have utilized science-focused social media sites like the Pivot-Community of Science sponsored by the University of Mississippi and local resources like the Faculty Research Interest Project, which summarizes faculty research interests at the University of Pittsburgh. In recent years, other platforms have emerged like ResearchGate (ResearchGate GmbH, Berlin, Germany), an academic, social networking platform with over 20 million members that can also facilitate multidisciplinary collaboration.<sup>60</sup> The ability to rapidly communicate scientific findings and market one's scientific expertise through social media permits researchers to efficiently identify potential collaborators to address complex clinical and biomedical inquiries in pediatric gastroenterology. Participation on Twitter has also fostered local, national and international collaborations between scientists, clinicians, and non-profit groups leading to new research, editorials and position papers.<sup>61–64</sup>

### 4.2 | Social media as a research tool

Patient recruitment can be challenging in clinical research studies. In pediatric gastroenterology studies, this process can require multiple sites to enroll over long periods of time due to the rarity or heterogeneity of diseases or disorders, adding to the complexity of research study design and analysis. However, patient recruitment targeting specific patients or caregivers through social media can ease this burden. This approach has been effectively used for both survey-based studies and even randomized trials, particularly in the areas of celiac disease and inflammatory bowel disease.<sup>13,65–69</sup> In the case of some diseases, this may be further assisted by social media-based support or advocacy groups,<sup>69</sup> also described in the Patient Care section. Recruitment through social media can often incorporate snowball sampling, in which recruited participants play a role in recruiting additional participants. Researchers looking to leverage social media for study recruitment should be conscious of the potential bias introduced by this approach, and possible disadvantages (e.g., inaccurate self-reporting of diagnoses) balancing against the potential advantages of greater recruitment and reach. This makes this technique appropriate for some study designs, but not others.

Beyond recruitment, many research studies now use social media as a direct data source for quantitative and qualitative research methods, and even as an intervention in clinical trials. For example, one study used Twitter data on public perceptions of celiac disease. They found over 9618 Tweets containing “celiac disease” over a 3-month period and elicited general themes by identifying which words appeared together most often.<sup>13</sup> In terms of social media interventions, one trial randomized low-income, overweight, pregnant mothers to a social media peer group versus standard text message appointment reminders to promote behaviors related to healthy infant growth. Those in the social media peer group had better improvement in maladaptive infant feeding behaviors compared to the text messages group.<sup>70</sup> In these ways, social media has become a valuable tool for participant recruitment, data sourcing, and an intervention modality.

### 4.3 | Social media in research dissemination and evaluation

Dissemination of scholarly work to inform the general public, investigators, and clinicians is important, and social media is now an integral modality to achieve this goal. The emergence of social media platforms has become a conduit for promoting published research findings and may affect the scientific community's

dissemination and assimilation of novel research findings. There is some evidence that social media promotion of published articles increases future citations.<sup>71,72</sup> The increasing importance of this approach to dissemination for authors and journals has led to the creation of the Social Media Editor role at many medical journals, and even best practice recommendations for this role.<sup>73</sup>

Traditionally, journal articles are evaluated before publication via the peer review process. This remains the gold standard for determining whether manuscripts are suitable for publication. As article dissemination through social media can rapidly spread awareness of published material, the discourse that follows may raise significant concerns not identified during peer review. In 2020, a paper in the *Journal of the American Heart Association* argued against affirmative action policies stating that “long-term academic solutions and excellence should not be killed for short-term demographic optics” under the pretense that such policies allowed academically weaker students into medical school with a lower likelihood of success.<sup>74</sup> A social media campaign quickly raised concerns about the biases presented in such a narrowly focused view of academic strength and success while ignoring the effects of systemic racism. The article was retracted after several factual inaccuracies in the interpretation of other articles were identified.<sup>75</sup> In this way, social media can facilitate broader post-publication review while also highlighting social justice issues in academia. Medical faculty, especially in leadership positions are still largely white and male.<sup>76</sup> Most senior authors, editorial board members and editors in gastroenterology and hepatology are still primarily male.<sup>77</sup> A recently published call to action presented data on the underrepresentation of Black and female individuals in pediatric gastroenterology leadership positions.<sup>78</sup> Social media provides a new tool in our armamentarium to address diversity, equity, and inclusion and combat prejudice and discrimination when the traditional peer review process fails to recognize and address these concerns.

**Recommendation 4: We recommend that individual researchers and academic journals use social media to increase the impact of their peer-reviewed work on broader audiences and recognize that social media can be an important source of feedback, engagement, and cross-disciplinary interaction.**

## 5 | SOCIAL MEDIA AND PROFESSIONAL DEVELOPMENT

Social media was created to share information and educators foster learning through creating and sharing information. With the explosion in the use of social

media, using social media for education is an obvious evolution. Within the field of medical education in particular, social media and the ability to share resources online fostered a movement to create and freely share medical education curriculum materials on the internet that became known as Free Online-Access Medical education, or FOAM (often referred to on social media by the hashtag #FOAMed).<sup>79</sup> Like-minded educators used various online tools such as blogs, streaming video websites, podcasts and more to disseminate teaching on a range of medical topics across disciplines.<sup>79</sup> Medical education resources are not restricted to dedicated websites, however, and educators have also turned to photo-sharing services such as Instagram, video-sharing services such as YouTube or TikTok, podcasts and social networks including Facebook and Twitter to share audiovisual content and messaging.<sup>80–82</sup> These educators can reach audiences of over 1 million users with each shared video, photo or tweet. The use of social media as a means of disseminated and shared learning became even more widespread during the COVID-19 pandemic with disruptions to traditional in-person curriculum delivery and clinical training.<sup>83,84</sup>

The rising use of social media in medical education has been mirrored by increasing study and review of the impact of these approaches.<sup>85</sup> While the majority of publications in this area are descriptive studies, innovation reports or reviews, there is a push to move beyond this into justification, clarification and critical appraisal.<sup>85,86</sup> One widely used model to evaluate the impact of a medical education intervention, the Kirkpatrick model, features four progressive levels of evaluation beginning with learner satisfaction and progressing through knowledge acquisition, professional behavior change and ultimately patient or organizational outcomes.<sup>87</sup> While learning outcomes examined in the majority of reviewed studies assess lower levels of Kirkpatrick's hierarchy (highlighting strong interest and demand for social

### BOX 4 Examples of social media content in pediatric gastroenterology

- |                      |  |
|----------------------|--|
| <b>Twitter Chats</b> | <ul style="list-style-type: none"> <li>Monday Night IBD (#MondayNightIBD):</li> <li>Scoping Sundays (#ScopingSundays)</li> <li>Peds GI Chat (#PedsGIChat)</li> <li>Celiac Chat (#celiacchat)</li> </ul>            |
| <b>Blogs</b>         | <ul style="list-style-type: none"> <li>Guts and Growth (<a href="https://gutsandgrowth.com">https://gutsandgrowth.com</a>)</li> <li>33 Charts (<a href="https://33charts.com">https://33charts.com</a>)</li> </ul> |
| <b>Podcasts</b>      | <ul style="list-style-type: none"> <li>Bowel Sounds: The Pediatric GI Podcast</li> <li>GI Pearls</li> </ul>  |



media-based medical education),<sup>87</sup> studies assessing for change in professional behavior and patient or organizational level outcomes are emerging.<sup>85</sup> Work has also been done to establish quality appraisal criteria for educators to use in making decisions about which FOAM resources to include in their curricula.<sup>88</sup>

Several publications have provided academic physicians with guidance on the use of social media to educate both trainees and patients. A variety of approaches have been described, including sharing clinical pearls, triggering a discussion by posing questions, posting a string of tweets as miniature lectures (“tweetorials”) or hosting an organized Twitter chat.<sup>21,82</sup> An important element of this integration is curation, where thoughtful selection, evaluation and organization can produce a high-quality, high-yield collection of resources out of the seemingly infinite options. Ideally, this process not only provides our trainees with great learning resources but also provides guidance to trainees on how to search for and evaluate additional resources. Given the widespread use of FOAM resources, educators should make use of available evaluation data and tools to integrate this content as a component of their overall curricula.<sup>88</sup> See Box 4 for examples of some high-yield resources within our field. As the skills and knowledge required to both create and curate high-quality, impactful medical education resources using social media require faculty development, educators should be supported as they adapt to this new learning environment. Specific training and curricula for trainees on the successful use of social media for their own independent education and professional development also requires support. NASPGHAN is uniquely suited to provide this support, whether through webinars demonstrating how to access and participate in educational activities on social media, how to create professional social media accounts and curate one's professional online identity, and how to use social media to promote one's practice or institution, or through in-person training sessions at both the Annual Meeting and fellow's conferences. Training can target a specific social media platform or address online presence in a broader sense, with material tailored for people across a range of social media experience, from absolute beginners to those who are already active participants.

**Recommendation 5: We recommend that educators incorporate social media as part of the medical education of our pediatric gastroenterology fellows and other learners.**

Social media activities are also increasingly being assessed as part of the promotion and tenure reviews for academic physicians.<sup>89,90</sup> Recently, both the Mayo Clinic and Duke University School of Medicine have provided guidance on the inclusion and evaluation of digital and social media scholarship as part of the criteria considered in the review of proposals for

traditional academic advancement.<sup>91,92</sup> While not all institutions have formal criteria for assessing this scholarly activity within their promotion framework, clinician educators can help describe their impact by mapping this activity to more traditional descriptors and measures of scholarship such as those by Boyer and Maslick.<sup>93</sup>

Alternative metrics (altmetrics<sup>94</sup>) used by academic journals to highlight the extent to which an article is being discussed and shared on social media and by online news sources represents a new tool for the evaluation of the academic value of published work. Social media scholarship and alternative metrics for academic assessment, promotion and tenure will help expand the scope of academic promotion. These vary by institution but the creation of social media portfolios and creating an online professional presence are becoming more widely accepted.<sup>20,89,95,96</sup>

**Recommendation 6: We recommend that the evaluation of academic promotion or mentorship of trainees and junior faculty recognize the impact of social media-based scholarship and education for promotion and tenure.**

There is evidence that institutional social media presence is independently associated with US News and World Report divisional ranking and reputation score.<sup>10</sup> In addition to reaching more patients, a robust institutional social media presence can also facilitate the recruitment of trainees and faculty. Many residency training programs have created or expanded their social media presence across various platforms during the COVID-19 pandemic when away rotations and in-person interviews were not available. For potential recruits, social media accounts provided opportunities for engagement as well as insight into the institutional culture and practice. Individual social media profiles on sites such as LinkedIn may also assist institutions in their search for ideal candidates, while helping potential candidates highlight their education and experience.<sup>97</sup>

Online reputation and social media presence may both be important to a physician's professional reputation. Physicians may wish to maintain professional social media accounts that are separate from personal accounts. Considerations for this approach are covered in primers on social media use for this group.<sup>11,12,21</sup> Online physician ratings, which form part of a physician's online reputation, can affect physician selection decisions.<sup>98</sup> Social media activity by physicians is associated with increased patient volumes and online ratings, but may not be associated with higher ratings.<sup>99,100</sup> While not all aspects of a physician's online reputation are under their control, having an active, current and accurate online presence that may include the use of social media has been promoted as a useful strategy to help

create and protect their online professional identity or brand.<sup>101,102</sup>

**Recommendation 7: We recommend that providers maintain an active online presence that is accurate and appropriate. Medical institutions should allocate personnel and resources to create and maintain their online presence.**

## 5.1 | Social media and professionalism

A PubMed search of “professionalism in medicine” yielded over 4000 results, with over 100 papers per year on the subject since 2006 and over 300 per year since 2015.<sup>103</sup> Despite the number of papers written on the subject, reviews still acknowledge there is no single, universally accepted concept of medical professionalism.<sup>104</sup> Historically, the concept has been characterized by treating patients and colleagues with respect, acting with integrity, dressing professionally, and avoiding denigrating language, behaviors, or attitudes toward colleagues and patients. In the new social media era, there appears to be a need for both different standards and deliberate guidance to help professionals. This would include (but not be limited to) navigating the distinction between or intersection of personal and professional use of social media as well as managing unwanted social interactions in a professional manner (see Box 3). A recent survey of future healthcare practitioners revealed that most respondents felt that standards for professionalism on social media were different from those that apply to in-person interactions, however, only the minority had received formal education on the professional use of social media during their training.<sup>105</sup>

Many physicians use professional social media accounts to promote their work, institution, and ideas. These accounts, often across the major social media platforms (Twitter, Instagram, TikTok, and Facebook), can be adjunct marketing tools and expectations regarding professional communication online from institutions and licensing bodies are often clear and understood by those physicians. Examples of how professionals may violate those expectations include sharing of identifiable patient information (intentionally or inadvertently) or using abusive or threatening language in heated exchanges with trolls. Personal social media accounts for professionals, however, are fraught with more potential for controversy, particularly when these accounts are public and the individual has self-identified as a healthcare provider. On these accounts, professionals may choose to share photos or comments that reflect their personal lives and interests, without intentionally connecting this with their online professional identity. A publication in 2020 by Hardouin et al attempted to characterize

unprofessional behavior, such as HIPAA violations, intoxicated appearance, and offensive comments.<sup>74</sup> Ultimately, the paper and authors faced backlash for characterizing females in swimsuits as potentially unprofessional, leading to the hashtag #medbikini (with >25,000 posts using this on Instagram to date). The retraction cited the significant conscious and unconscious biases in characterizing the noted behaviors as unprofessional. While multiple valid concerns led to the retraction of this paper, the fact remains that while providers clearly have the right to live and post as they choose, the public posts and accounts of healthcare providers that are visible to patients have the potential to be considered unprofessional by patients and institutions. Providers should be supported in obtaining information and training on navigating their professional and personal participation on social media to best represent themselves and avoid unintended consequences while feeling free to express themselves genuinely.

## 5.2 | Potential concerns with social media use

While this position paper makes several recommendations encouraging the reader to incorporate social media into their professional roles for patient care, research and professional development a number of potential negative impacts must be addressed. The possibility of negative online attention has already been highlighted, along with ways to help protect oneself in Box 3. In addition to these aspects, concerns have been raised regarding the potential negative impacts of social media use on mental health and personal wellbeing, including burnout.

Social networking site disorder has been proposed as a new behavioral addiction disorder, however, it has not currently been accepted into the Diagnostic and Statistical Manual of Mental Disorders (DSM), nor the International Classification of Diseases and standardized definitions are not yet established. This condition has been characterized by excessive concern about social media, an uncontrolled urge to use social media, and devoting an excessive amount of time to its use in a way that impairs other areas of responsibility.<sup>106</sup> Data regarding this risk within the medical or research community are sparse, but available work argues all the more strongly for providers and researchers to receive training and support in meaningful, reasonable and appropriate professional use of social media.<sup>106</sup>

While research to date has not linked professional social media use and burnout, time spent on social media supporting professional goals still counts as work and this must be taken into account when

balancing one's overall professional workload.<sup>107</sup> This also argues for institutional training, support and recognition for professional social media usage so that providers and researchers can account for this time while not adding an additional burden. Another aspect of work-life integration that is important to note is that social media usage, given the pervasive availability on ever-present smartphones and computers is that professional usage should be thoughtful and intentional. Suggestions for deciding on, and sticking to a schedule for social media engagement are available and are advisable for any physician or researcher engaging in social media use for professional purposes.<sup>21</sup>

The recommendations in this position paper advocate for thoughtful, responsible and intentional usage of social media to advance professional goals and appropriately interact with the broader community in

support of public education and health advocacy. Education, training and peer mentorship and support will help our readers achieve these goals in a way that optimizes for meaningful impact, professional rewards and personal safety and wellbeing.

**Recommendation 8: NASPGHAN should lead the pediatric gastroenterology community in social media by continuing to strengthen its own social media presence and by providing social media education and guidelines. A strong social media presence will amplify the resources and messaging from our society for its members, our patients, and the public.**

## 6 | CONCLUSION

The inception of social media has triggered a vast transformation in how medicine, healthcare, health research and health professions education are practiced globally, and this is also true in our field of pediatric gastroenterology, hepatology, and nutrition. While the potential pitfalls and challenges are real, so too are the potential rewards for us as professionals, researchers, and educators, as well as for patients and their families. In this paper, we have attempted to highlight these challenges and rewards while providing recommendations to help both provide initial guidance for readers at every level of their career. We also call on institutions and societies to provide the support and training required to ensure that pediatric gastroenterologists and hepatologists, scientists and allied health practitioners are able to be successful participants and leaders in this new era of global online collaboration and practice (see Box 5).

## CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

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### BOX 5 Summary of recommendations

1. We encourage providers, scientists and medical institutions to be active participants on social media and incorporate this participation in their patient education and advocacy efforts.
2. We recommend that providers, scientists and medical institutions actively encourage and assist families in using reputable online sources of medical information including social media.
3. We recommend that providers, scientists, journals, and medical institutions play an active role in combating medical misinformation and science denialism.
4. We recommend that individual researchers and academic journals use social media to increase the impact of their peer-reviewed work on broader audiences and recognize that social media can be an important source of feedback, engagement, and cross-disciplinary interaction.
5. We recommend that educators incorporate social media as part of the medical education of our pediatric gastroenterology fellows and other learners.
6. We recommend that the evaluation of academic promotion or mentorship of trainees and junior faculty recognize the impact of social media-based scholarship and education for promotion and tenure.
7. We recommend that providers maintain an active online presence that is accurate and appropriate. Medical institutions should allocate personnel and resources to create and maintain their online presence.
8. We recommend that NASPGHAN lead the pediatric gastroenterology community in social media by continuing to strengthen its own social media presence and by providing social media education and guidelines. A strong social media presence will amplify the resources and messaging from our society for its members, our patients, and the public.

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**How to cite this article:** Silverman JA, Chugh A, Hollier JM, et al. Using social media for patient care, research, and professional development: A North American Society of Pediatric Gastroenterology, Hepatology, and Nutrition position paper. *J Pediatr Gastroenterol Nutr*. 2024;78:414-427. doi:10.1002/jpn3.12051