

The Role of Graduate Medical Education in the Fight Against Health Misinformation

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Physicians in graduate medical education (GME) training programs must learn to address the widespread health misinformation and disinformation threatening patient well-being and public health in today's digital era. *Health misinformation* is misleading or erroneous public health information that spreads without intent to harm, while *disinformation* refers to inaccurate information disseminated with malice.^{1,2} A 2021 US Surgeon General's Advisory and the United Nations digital first responders initiative both identified health care professionals as critical stakeholders for addressing health misinformation.^{3,4} These mandates include trainees in our GME programs; therefore, program directors must teach our resident physician workforce to effectively address health misinformation.

Our residents and fellows will be the future independent practitioners to whom patients and the public will look for accurate and reliable health information, and it is incumbent upon us to meet their training needs. While applicable frameworks⁵⁻¹² for debunking misinformation are available, most residency programs do not teach these important communication skills. In this Perspectives article, we describe methods for addressing misinformation in the clinical environment and online, and present practical strategies for supporting trainees in this important effort within GME programs.

Addressing Misinformation in the Clinical Environment

Communication skills directly affect patient care.¹³ However, fewer than 20% of physicians receive formal training to address health misinformation with patients.¹⁴ Since faculty expertise may be lacking in this domain, many residents are left to develop such critical skills on their own through trial and error. Failing to learn a productive approach to these difficult conversations during residency is a lost

training opportunity and may lead to poor patient compliance with health recommendations.¹⁵

Useful approaches that focus on the mechanics of conversations can be applied to help residents address misinformation with patients (TABLE). For example, *motivational interviewing* is a nonjudgmental, active listening framework recommended when encountering patients who exhibit vaccine hesitancy.⁵ This technique is favored over simply conveying medical facts or labeling misinformation.^{16,17} Such approaches ignore the cultural, emotional, social, and political factors that draw people toward misinformation.¹⁸⁻²⁰ Conversely, motivational interviewing demonstrates empathy for patients, validates beliefs and concerns, develops trust, and provides correct information through respectful dialogue.

Other practical models can guide residents through difficult patient conversations (TABLE). *Conversational receptiveness* is the use of concrete words and phrases that parties in conflict can incorporate into any conversation to demonstrate active engagement with their counterpart's perspectives.⁷ Conversational receptiveness increases perceptions of trustworthiness, objectivity, and intelligence, and makes both parties more willing to interact with each other in the future.^{7,21} *Elicit-share-elic* is an active listening approach in which resident physicians can elicit patients' knowledge, share information, debunk misinformation, and seek understanding.⁸ Similarly, the "Three C" approach emphasizes *compassionate understanding*, *connection*, and *collaboration* when addressing misinformation.⁹ Additionally, residents can use *learner-centered approaches* with patients by ensuring a psychologically safe learning environment for the patient, employing scaffolding by building upon prior experiences when providing patient education, and respecting the social context in which patients learn and make health decisions.⁶ Residency programs should teach these communication frameworks, concepts of preferred cognitive styles during patient education, and drivers of behavior change. Through a better understanding of the reasons, motivations, risk perceptions, and trusted information sources that

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Editor's Note: The online version of this article contains examples of trainee-led public education using social media.

TABLE
Communication Approaches for In-Person Conversations With Patients About Health Misinformation

Approach	Description	Example	Relevant References
Motivational interviewing	A nonjudgmental, active listening framework in which the interviewer demonstrates empathy for patients, validates their beliefs and concerns, develops trust, and provides correct information through respectful dialogue.	<ol style="list-style-type: none"> 1. “Has your child received any other vaccines?” 2. “May I ask why not the Measles, Mumps, and Rubella (MMR) vaccine?” 3. “May I share with you some information about the MMR vaccine?” 4. “After hearing that, would you like to vaccinate your child against MMR today?” 5. “If not, you are welcome to return anytime if you change your mind.” 6. “Thank you for letting me share what I know.” 	5
Conversational receptiveness	A set of linguistic markers that parties in conflict can use in any conversation to demonstrate active engagement with their counterpart’s perspectives.	<p>Acknowledge understanding</p> <ul style="list-style-type: none"> • “I see your point. . .” <p>Make positive statements</p> <ul style="list-style-type: none"> • “Yes” and “Right” <p>Find points of agreement</p> <ul style="list-style-type: none"> • “I agree with you on. . .” <p>Hedge to soften claims</p> <ul style="list-style-type: none"> • “Somewhat” and “Might” 	7, 21
The “Three C” approach	Conversational guide designed to demonstrate empathy and collaboration to strengthen patient-physician relationships based on trust and shared goals.	<p>Compassionate understanding</p> <ul style="list-style-type: none"> • “Tell me about your worries about the recommended treatment.” • “Why is it important for you to only use homeopathic or natural remedies?” <p>Connection</p> <ul style="list-style-type: none"> • “I can see that you are someone who prioritizes your health and well-being.” • “May I share with you my take on the scientific evidence for the recommended treatment based on my experience and expertise?” <p>Collaboration</p> <ul style="list-style-type: none"> • “I believe we share the same goal of helping you get well and stay healthy.” • “I really appreciate our discussion today. May I give you my honest and best recommendation?” 	9
Elicit-share-elicited method	Using active listening in a nonjudgmental manner to facilitate patient expression of concern or ambivalence. In turn, the physician can provide solicited advice that may be better received.	<p>Ask open-ended questions. Reflect and acknowledge concerns. Affirm patient’s information-seeking efforts. Summarize the patient’s position.</p> <p>Elicit</p> <ul style="list-style-type: none"> • “I have some up-to-date information on vaccine safety. May I share that with you?” <p>Share</p> <ul style="list-style-type: none"> • Specific statistics are more credible. • Acknowledge side effects, but emphasize that they are often mild. <p>Elicit</p> <ul style="list-style-type: none"> • “After reviewing the evidence with me, what are your thoughts now?” • “I highly recommend getting vaccinated. What do you think?” 	8
Learner-centered educational frameworks	Intended to arm all physicians with practical knowledge and skills supported by learner-centered educational frameworks to address health misinformation. Create a safe “learning” environment. Promote internal motivation. Leverage scaffolding. Prioritize framing. Make it socially acceptable. Focus on salient, takeaway points.	<p>Cultivate the therapeutic alliance using nonjudgmental, empathetic language.</p> <p>Appeal to innate desire for relatedness, autonomy, and competence.</p> <p>Build on prior experiences.</p> <p>Present the information in a way that is congruent with existing beliefs.</p> <p>Leverage patients’ social networks to challenge misconceptions.</p> <p>Reduce information content and complexity when possible.</p>	6

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influence patients' decisions, residents can learn to frame these difficult conversations more effectively.²²

Addressing Misinformation Online

Health misinformation is easily spread online, especially through social media.²³ GME programs should teach trainees to leverage their clinical experience, expertise, and societal platforms to address health misinformation through public engagement on social media.¹⁰ Research suggests that performing factual corrections of misinformation online can reduce social media users' misperceptions^{24,25} and increase their intentions for healthy behaviors.²⁶ Barriers to physician engagement online include perceived lack of social media training, measurable health outcomes, and institutional support, as well as concerns about liability, harassment, and online bullying.^{10,27,28} Residents will be more likely to interact with patients online if they have participated in social media or misinformation training.¹⁰ The number of physicians who have received social media training to address misinformation is unknown, and it is likely to be quite low, both for those in practice and those in residency training. However, there is a growing body of literature calling for physicians to use social media to refute misinformation, to disseminate accurate information, and to create partnerships with online influencers and community organizers for public health purposes.^{1,2,29}

In fact, a few medical schools and residencies have provided public education on social media with some success (online supplementary data).³⁰⁻³⁴ Trainees used Twitter, YouTube, Wikipedia, WeChat, and TikTok to provide accurate health information to their patients. Residents regularly use such social media platforms and can be coached to leverage them to address misinformation. For example, residents in several Boston-area programs used Twitter to raise awareness about racial inequities early in the COVID-19 pandemic.³⁰ Residents at Yale filmed more than 60 TikTok videos about COVID-19 education with 600 000 views by late 2020.³¹ Residents at the University of Chicago created educational videos and infographics to teach Chinese patients accurate health information about COVID-19 on WeChat.³²

To encourage trainee engagement in this space, residency curricula should include misinformation and social media training that would teach residents how to identify misinformation and how to use social media professionally to make corrections (FIGURE).¹⁰ Residents could be guided to establish professional social media accounts, disseminate facts, and correct misinformation.^{2,35} Bautista et al provide a framework to teach residents how to

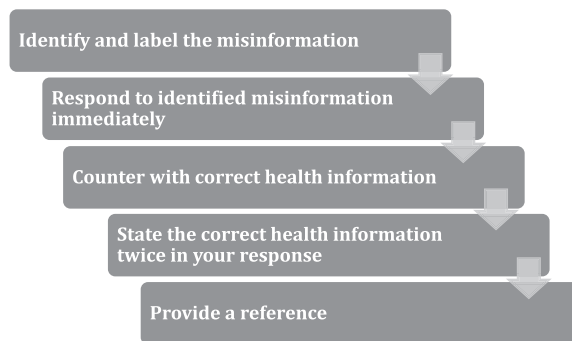


FIGURE
Five-Step Method of Debunking Health Misinformation Online

correct health misinformation on social media.³⁶ Additionally, schools and medical societies have begun to offer courses and programs aimed at helping clinicians address health misinformation, and GME programs can take advantage of such resources.³⁷⁻⁴⁰

Supporting Trainees in Addressing Health Misinformation

In addition to teaching residents about the issue, the most important ways that GME programs can support their trainees are to (1) determine the most effective educational strategies to teach physicians to address health misinformation; (2) demonstrate faculty role-modeling of appropriate response behaviors with individual patients and the public at-large; and (3) provide faculty, program, and institutional backing for engaged trainees.

Program directors will need to apply educational interventions shown to be effective with physicians-in-practice, as such training has not been rigorously studied at the GME level yet. Curriculum evaluation should include the attainment of Accreditation Council for Graduate Medical Education core competencies (eg, interpersonal and communication skills, professionalism, practice-based learning and improvement),⁴¹ as well as patient-level outcomes,⁴² such as vaccine uptake. Research is needed which examines misinformation training and techniques that includes trainees in GME programs. Many faculty have not been trained in science communication and social media engagement. Therefore, program and health care leaders should make such training opportunities available to residents and faculty alike.⁴³ Time, faculty expertise, and support will be needed to develop relevant curricula, teach, and supervise residents.⁴⁴

Faculty coaching and role-modeling of optimal responses to misinformation are key. Akin to other

aspects of clinical training, it is important to ensure proper faculty support, mentorship, and feedback to trainees learning to engage patients in person or the public online.

We acknowledge that there are potential threats to residents' training and employability that are inherent to their career stage. The risk to current and future career prospects is higher for residents, as some prospective employers may perceive their online efforts to combat misinformation and the resulting backlash as liability. Residency program leadership should be ready to advocate for their trainees and alumni as needed.

Institutions should revisit social media policies that discourage residents from using social media for public health education, to align with the US Surgeon General's Advisory.³ Specifically, institutional support for social media training for residents and faculty, as well as sponsorship for physician employees who debunk online misinformation, are essential to encourage resident engagement in combating health misinformation.⁴⁵ Research shows that health care professionals who believe that their organizations support their actions in correcting health misinformation on social media are more willing to do so.¹⁰

Conclusions

Health misinformation has become a threat to public health that goes well beyond the COVID-19 pandemic. GME training to address health misinformation is urgently warranted. Applicable communication frameworks can help residents address health misinformation in the clinical environment and online. Further research to determine the most effective approaches to teaching resident physicians to combat health misinformation is sorely needed. By providing misinformation training and support for engaging on social media to trainees and faculty, we can help to create future leaders capable of addressing this important public health challenge.

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