



2025-2026 FELLOWS RESEARCH

Winning Hearts and Minds

Supporting Health Professions Trainees to Combat Harmful Misinformation

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For associated curriculum, see: [Winning Hearts and Minds: A Clinical Playbook for Addressing Medical Misinformation Presentation](#)

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Project Aims

In the current complex landscape where mistrust, polarization, identity, and emotion underpin divergent beliefs fueled by information technology platforms and algorithms, medical students need a broader suite of communication strategies that address medical misinformation.

A Gap: Today's medical student patient communication curriculum was largely developed a decade ago, prior to the ubiquitous use of rapidly evolving massive forces like social media and artificial intelligence. Medical education is working to catch up to the changing context today but has not yet included a transformation of patient communication curricula in most medical schools, including University of California San Francisco (UCSF). Furthermore, today's medical student curriculum on the use of scientific evidence largely assumes that the information one encounters is trustworthy. This is no longer true in today's information landscape.

Project Rationale

With the challenge of widespread unscientific information curated by social media and internet algorithms, medical providers now face a convergence of strong forces that widely disseminate alternative health information that sometimes opposes evidence-based approaches, leading to harmful outcomes. In recent months, medical leaders have cited the rampant spread of health-related misinformation as the major threat to public health (Laine et al, 2025) and proposed a call to action. Given the imperative that we not compromise the right to free speech, it is essential that we honor our professional integrity and obligation by not letting false information go unchallenged. Medical education in recent decades trains doctors to offer scientific facts and evidence-based strategies as the core communication strategy to convince patients and the public to make informed choices for their health. Providing "just the facts," however, is not proving persuasive or effective in countering influential campaigns of misinformation that may put our patients' or public health in jeopardy.

A recent survey from the Physicians Foundation, a nonprofit research group, found that >60% of physicians report that their patients have been influenced more than moderately by misinformation or disinformation over the past year, and 90% responded that the incidence has increased compared to five years ago (The Physicians Foundation, 2025). This is corroborated by a 2023 Kaiser Family Foundation poll in which 83% of Americans believe that false and inaccurate information is a "major problem" (Kaiser Family Foundation, 2023). Misinformation can result in tragic outcomes: recent increases in illness and deaths caused by vaccine-preventable measles and pertussis infections coincide with declining vaccination rates due to an increase in vaccine hesitancy. Accordingly, traditional educational strategies and tools for clinical discourse, especially in the face of strong disagreement, are no longer sufficient. Health care professionals need more effective approaches to guide patients to make choices that enhance their own health, are evidence-based, and protect the public. We developed a

curriculum for medical students to address medical misinformation that incorporates the necessity of self-awareness and regulation of emotions when met with mistrust or misunderstanding, emphasis on shared identities as a key method to create trust, and use of narrative as a critically influential tool.

Background and Significance

Even though communication experts agree that a dialogic approach is generally most effective, current patient education practices still rely heavily on the conceptual model of providers as the holder of medical information, and patients as willing recipients of medical information from their physicians. Doctors frequently use a highly detailed approach to sharing information, perhaps couched in terms of scientific nuance for the sake of accuracy, that often wins neither the hearts nor minds of the listener. On a broader societal level, unidirectional communication campaigns intended to promote public health repeatedly failed during the COVID-19 pandemic. While health professionals struggled to explain and assure within the natural limitations of the scientific method, conspiracy theories -- facilitated by widespread dissemination through the internet and social media -- circulated to stoke doubt and undermine potentially life-saving immunizations and medications. Data drawn from numerous sources - sociology, political science, psychology, and medical education -- all point to the ineffectiveness of the medical field, and medical providers in particular, to effectively combat misinformation. Several factors converge to perpetuate this challenge, further discussed below: 1) declining trust in the healthcare system, 2) political polarization and the prevalence of echo chambers, and 3) the importance of identity and emotion in predisposition to beliefs.

Trust in physicians decreased significantly from 2020-2024: 71.5% to 40% (Perlis et al, 2024). Research informs us about various factors that influence trust between patients and providers. These may include the length and quality of the relationship, identities of patient and provider, and shared communities. Lack of longitudinal patient-provider relationships in our health care system poses a significant challenge in building trust. In addition, hierarchical or efficiency-driven systems within healthcare settings may impede effective communication. When a physician is too busy to address patients' questions, patients will often ask those questions of ancillary clinical staff, friends and family, or social media, with variable outcomes regarding evidence-based, trustworthy answers (Forgie et al, 2021).

Political polarization, facilitated by social media, normalizes extreme views and mutes moderate ones, thereby efficiently disseminating misinformation. In his comprehensive book, *Misguided: Where Misinformation Starts, How It Spreads, and What to Do About It*, Matthew Facciani (2025) notes four characteristics of social media that enhance an environment of chaos: information overload, engagement bias, echo chambers, and manipulation by bots. The resultant environment of opinionated homogeneity enables a sense of purpose, community, and self-worth among those with more extreme opinions (Bail, 2022). In addition, simply showing

individuals the same information repeatedly can increase the likelihood that they will believe it is true even if they are told it is false (the “illusory truth effect”; Hasher et al, 1977), further cementing beliefs and leading to a perpetually reinforcing spiral (Stein et al, 2023). Complicating this dynamic in the current political climate is mistrust of government agencies, pharmaceutical corporations, insurance companies, and elite academic institutions, some of which is understandable and even well-founded. It is noteworthy that growing mistrust in government agencies that were originally created to provide sound, evidence-based guidance to policymakers and the public is fueled by some prominent leaders currently within those agencies.

Research from neuroscience provides striking evidence that identity and emotion, rather than reason, enables information uptake. Neuroimaging studies demonstrated that when participants were presented with information that challenged their political beliefs, rather than rationally sorting through them, the part of the brain associated with negative emotions was highly active (Zmigrod and Tsakiris, 2021; Kaplan et al, 2016). Conversely, subjects whose emotional centers were less active when reading information that challenged their political beliefs were more likely to change them. Further evidence demonstrates that when shown opposing political information, people focus more on their selves and identities than on objective analysis, i.e., people use emotion rather than reason (Moore et al, 2021), and people are more likely to believe positions related to their identity (Unsworth and Fielding, 2014). Additionally, people are motivated to seek media that affirm their identities (Slater, 2015). Attempts to refute or modify perspectives merely with scientific facts and explanations ineffectively address these critical elements of identity and emotion. Conversely, self-affirmation can make people better able to handle identity-threatening information (Klein et al, 2011).

Historically, proposals have offered the use of fundamental relationship-centered communication and motivational interviewing techniques to address medical misinformation. These important skills include open-ended curious inquiry of the patient’s perspective, close listening, responding with empathy and attempts to understand the patient’s motivations, and then asking for permission to share facts and explanations (Chou and Cooley, 2017; Limaye et al, 2020). Certainly, conversation has been shown to help depolarize beliefs (Levendusky and Stecula, 2021). Motivational interviewing has demonstrated powerful effects on behavior change (Gagneur et al, 2024). However, though an inquiry stance can help uncover inner thoughts and rationales, it is unclear if motivational interviewing alone changes beliefs about misinformation (Scales et al, 2023). Merely presenting facts in the absence of relationship (e.g., on social media) hardens positions and increases polarization (Bail et al, 2018).

Related Curricular Efforts: A small number of published reports are beginning to explore aspects of the gap in medical education around addressing medical misinformation. For example, medical educators from the University of Minnesota reported a session for third year medical students that focused on identifying false information online (McKinney, 2024). Another pilot program from the University of Buffalo included 50 volunteer interprofessional students in a

program on vaccine hesitancy (Fusco, 2023). Two MedEdPortal modules from Maine and Hofstra focus on COVID-19 (Hayman, Pelin, 2024). While these are worthwhile early efforts, even at the annual conference of the American Association of Medical Colleges (AAMC) Learn Serve Lead in November 2025, it was clear that these isolated efforts 1) have not penetrated the core curriculum for the majority of medical schools, 2) have not been updated to include the current rapid production of misinformation topics to address (e.g., measles and acetaminophen), and 3) do not yet fundamentally change the structure of physician communication to acknowledge the flattening hierarchy of the provider-patient partnership due to immediate and broad access to information and misinformation at all of our fingertips. A culture change, and a different fundamental educational approach, is urgently needed.

The specific goals of this project were to:

1. Identify best practices for respectful, persuasive discourse with patients and the public that addresses misinformation beyond refuting it by providing scientific evidence.
2. Develop and pilot a curriculum for early medical students and toolkit for clinician educators that incorporates self-regulation, shared identity, and narrative-based strategies. ([Winning Hearts and Minds: A Clinical Playbook for Addressing Medical Misinformation Presentation](#))

Project design and methods for implementation

Communication skills training for first- and second-year medical students currently and importantly focuses on fundamentals in gathering information, building rapport with patients, and avoiding jargon or complex language. These learning sessions, done in small group settings using role-play, standardized patients, and in some cases actual patients, are intended to reinforce basic frameworks in patient-provider interactions prior to the clinical immersion of the third year and beyond. The landscape of misinformation requires that more intensive work focus on these additional elements:

Self-awareness / self-regulation of emotions (slide 13): Currently, many interviews for medical students appropriately focus on development of fundamental skills in simulated settings and, when available, friendly patients. Consequently, students may lack a framework for handling negative emotions that may arise in interactions centering on medical misinformation. We proposed two additional structured debrief questions for all patient interviews throughout the early clinical skills course: 1) “what are your emotions after having done this interview?” and 2) “if this patient (had) said something that you disagreed with, how did/would you handle those emotions in the moment?” These simple brief questions emphasize the high importance of personal awareness in every encounter and prime learners for the specific misinformation cases we consider. They also emphasize the supremacy of human connection in clinical interactions.

Relating to shared identities (slide 14): The close relationship between one’s identities and one’s beliefs, and the trust that accompanies shared identities, indicates that finding

commonalities in experiences can deepen mutual understanding and humanize conversation partners with differences (Packer and Van Bavel, 2022). Social influence from our networks can have a powerful effect on our behaviors and beliefs, but this process is strongest when the social influence comes from those most like us and those closest to us (Sinclair and Agerstrom, 2023). Using the fundamental communication skills already emphasized in the early clinical skills course, we propose one additional debrief question for patient interviews: “what possible shared identities do you have with this patient?” Exploring connections through identity highlights our humanity and increases the potential to penetrate a perspective that initially may appear defensive and fixed.

Motivational interviewing (MI; slide 15): Concepts of MI are currently introduced in the first two years of medical school, and MI clearly demonstrates powerful, proven effects on driving actual behavior change (Gaugner et al, 2024). It allows the clinician to adapt an inquiry stance to uncover the patient’s inner thoughts and hidden rationales. While it is unclear if MI alone is sufficient to permanently change underlying beliefs about misinformation (Scales et al, 2023), it can be a helpful tool to explore the patient’s underlying assumptions and beliefs, using phrasing like, “tell me more about...”

Use of narrative (slide 16): Instead of merely telling facts to refute misinformation, telling compelling stories has the advantage of moving hearts rather than just minds (Fetters, 2019). Significant data show that personal stories reduce negative attitudes, for example towards transgender individuals (Kalla and Broockman, 2020). Like many preventive practices we recommend for patients, these narrative approaches may not always work when used once, but an empathic, caring orientation has a better chance of being effective than doubling down on facts. When identity and emotion drive belief, stories that affirm shared humanity can decrease defensiveness and facilitate shared reflection. In this curricular module, informed by best practices from experts, students will analyze a well-known non-medical story for its effective elements: clear beginning, middle, and end; detailed setting and characters; and engagement. Students will then apply the framework to a medical setting and practice telling narratives with feedback from peers.

The four elements above comprise a new fundamental skills-based toolkit to instruct medical students on how to engage with patients who decline or question standard evidence-based treatments, with two clinical scenarios as exemplars. Cases will focus on common topics of medical misinformation: the first case centers on vaccine hesitancy related to the measles vaccine (slide 17), and the second addresses the safety of acetaminophen use in pregnancy (in development).

Evaluation plan

We conceptualize our evaluation plan using the four levels of Kirkpatrick's model (Kirkpatrick, 1959). The mixed-method approach will yield quantitative and qualitative data, self-assessment, skills demonstration, and observation data.

Kirkpatrick Level 1: Learner Satisfaction -

As part of the core medical school curriculum, which is embedded in existing courses and elements, standard learner satisfaction questions will be included to explore students' perceptions of this curriculum. Numeric ratings and open comments will be available to gather learner input for continuous improvement.

Kirkpatrick Level 2: Knowledge –

During the learning session, students will complete brief pre- and post-survey questions using Likert scales as well as open comments to gather self-assessed confidence and knowledge data on whether they have (1) learned a framework for addressing medical misinformation and (2) applied a practical communication tool to address misinformation in one content area. They will also be invited to participate in individual verbal debrief or focus groups to discuss their experience with curriculum leaders.

Kirkpatrick Level 3: Skills –

In simulation, students will demonstrate their skills for relationship building and discourse. Rating rubrics to evaluate the simulated patient interactions will address the four elements we propose for the communication skills curriculum: a) fundamental communication skills, b) self-awareness and emotional self-regulation, c) ability to relate to shared identities, and d) effective use of narrative. Because of the novelty of the approach, there is not (to our knowledge) an established rubric that addresses all these factors; we plan to adapt existing tools listed below to create a concise instrument as part of this project.

Sample existing tools as starting points for our adaptation include the following: a) To assess fundamental communication skills, the Four Habits rubric [link [here](#)] is a validated tool for healthcare providers; b) For self-regulation of emotions using self-assessment as well as observation, the Learnlife Impact Rubric is one example [link [here](#)]; c) For relating to shared identities, the Multicultural Rubric contains many relevant measures as one place to start [link [here](#)]; d) For effective use of narrative, the analytic rubric for story telling [link [here](#)] is one potential tool.

In future years, the Kirkpatrick Level 4 (patient outcomes) data of this curriculum can be explored in real clinical settings in the clinical years of training, either in hospital or ambulatory settings. We plan to broaden the delivery of this curriculum beyond medical school to

postgraduate training (i.e., residencies, fellowships) and practicing clinicians and hope to pursue data of the real-world implications of this work.

Plan for sustainability

Given the timeliness and consequential importance of this topic, we garnered support from UCSF School of Medicine leadership for integration of this content into the curriculum for early medical students. We plan to pilot this curriculum in fall of 2026 for a small group of learners (16-32 students) before launch into the larger UCSF medical school curriculum (~160 students per year) in 2027. We have engaged two junior faculty members as mentees to continue work on this curriculum; they plan to program specific case contents (including background information on the topics, frequently cited misinformation, as well as the proposed communication strategies for providers to engage patients) into a scalable artificial intelligence (AI) platform to create a virtual chatbot that can replicate patients who are skeptical of the medical provider's recommendations. AI simulation will allow students to practice elements of the toolkit and receive feedback from AI on how they execute elements of the toolkit. Faculty development materials to prepare faculty to assist students to utilize the proposed communication strategies are still under development.

While this toolkit was initially developed for medical students, our vision is to adapt the toolkit for other learners, such as postgraduate trainees, interprofessional health care team members, and practicing clinicians (including faculty in academic medicine). We already presented this toolkit in June 2026 to a local community-based health system of primary care providers who gave positive feedback about the usefulness of this approach and appreciated practical skills to apply in clinical practice. We also envision dissemination of this curriculum (e.g., MedEd Portal is a well-known peer-reviewed venue for sharing specific curricular elements and lesson plans, such as the cases after the next phase of development and implementation) as the first step in a broader movement to enhance awareness of the prevalence of medical misinformation, develop effective methods of addressing it in individual patient-provider encounters, and apply these methods to widening influence that potentially includes additional stakeholders in healthcare, the community, and in advocacy arenas.

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