

## Viewpoint

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# Counteracting Health Misinformation A Role for Medical Journals?

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The growing toll of popular fallacies about health and illness is evident given outbreaks of measles and other preventable communicable diseases in many nations. This “medical misinformation” phenomenon has been described as “a health-related claim of fact that is currently false due to a lack of scientific evidence,”<sup>1</sup> but that may be a generous interpretation. Complementary and alternative medical approaches, without firm evidentiary bases, have coexisted uncomfortably with mainstream scientific medicine for decades, and they persist.<sup>2</sup> By contrast, contemporary misinformation of greatest concern is supplanting well-proven interventions and ideas with unproven ones that are clearly false and, in some cases, harmful.

## Crowd-Sourced Lies, Fake Experts, and Misleading Leaders

Medical misinformation is nothing new but has become pervasive. Multiple digital sources represent a “new frontier” without editorial oversight or curation. Nearly anyone can say almost anything and be taken seriously at least by some consumers. With billions of individuals online every day, health misinformation can spread at a rapid pace.<sup>3</sup> Worse, exciting falsehoods apparently spread faster than boring truths on social media.<sup>3,4</sup>

This new online world facilitates direct-to-consumer marketing by phony experts, celebrities with armies of Twitter followers, and legions of independent digital scammers, including some physicians. The result has been torrents of misinformation on topics as varied as the safety and effectiveness of vaccinations, the Zika virus outbreak, water fluoridation, genetically modified foods, and treatments for common diseases.

Moreover, in countries such as India, Italy, and the United States, negative attitudes about science appear to have risen in lockstep with ultranationalist sentiments and the emergence of populist leaders and movements.<sup>5,6</sup> For those disadvantaged, despairing, and understandably distrustful of government, these “alternative truths” align with shared skepticism about scientific medicine and belief in traditional remedies.

## Do Medical Journals Have a Role in Addressing Medical Information?

Chou et al<sup>1</sup> highlighted the need for research to address medical misinformation and determine how intervention might constrain or refute messages with adverse health implications. Apart from publishing such research, should medical journals be more active?

At first blush, the role of medical journals otherwise seems limited because their content is relatively inaccessible to laypeople. However, many journals have embraced the need to more broadly translate medical knowledge. Some produce open-access “patient pages” to assist physicians in educating patients and allow patients to educate themselves, and some produce simpler and briefer summaries of research findings. Others have developed digital and social media tools to promote relevant content, supplementing conventional print media. Most journals have the capacity to solicit submissions on particular topics and publish entire issues focused on themes of broad scientific, public, or professional interest. Some have natural alliances with the medical profession through sponsors such as medical societies and associations. These and other capabilities position journals as potentially powerful agents in counteracting medical misinformation.

## Specific Actions Medical Journals Might Take

The [Table](#) outlines 4 broad strategies sometimes recommended to help address medical misinformation. The first—containment of dissemination—provides opportunities for journals to shine light on prominent misinformation sources and prompt others to act. While censorship targeting sites on the worldwide web is challenging in most jurisdictions, social media companies own their platforms and can take action. For example, Facebook took several recent steps to contain the spread of antivaccination claims even though it has so far declined an outright ban on antivaccination groups. Containment is more straightforward with curated or edited media of all types, exemplified by Canada’s *Globe and Mail*, which has publicly rejected any “false balance” wherein “proven science” is set against “unproven beliefs and conspiracy theories” about vaccinations.<sup>7</sup>

**Table. Potential Strategies for Counteracting Medical Misinformation**

Category	Agents	Goals/Tactics
Containment of dissemination	Physicians and medical journals	Identify purveyors of clear-cut misinformation
	Regulators, social media executives	Limit their capacity for dissemination
	Editors in traditional and new media	Avoid legitimizing falsehoods about health and illness in the name of “balance”
General immunity through science literacy	Primary and secondary schools/educators	Ensure that high school graduates understand how and why the scientific method works and possess some critical-thinking tools
	Colleges and universities	Ensure that every baccalaureate has meaningful exposure to common cognitive errors and logical fallacies involving both qualitative and quantitative information
Health-specific inoculation and education	Health professionals, faculties, and organizations; public health agencies; communications experts; medical journals	Promote general understanding of medical science and communicate about common misconceptions using websites, digital media, town halls, and conventional print and broadcast media. Prepare the next generation of health professionals to navigate a world of “truthiness” and pseudoscience
Debunking myths and discrediting purveyors	Journalists and journals/media outlets; health professionals and researchers; medical journals	Direct rebuttals of medical misinformation using a variety of media platforms. Undertaking critical reviews of the provenance of misinformation, unveiling purveyors’ credentials and conflicts of interest

## Potential Strategies for Counteracting Medical Misinformation

General enhancements of *science literacy* are the province of educators and policy makers at all societal levels, and represent both a form of immunization against broader

misinformation and a long-term investment in a better-informed citizenry. On the other hand, physicians and medical journals could have involvement with *health-specific inoculation* by fostering science literacy and education about human health and illness.

One approach would be commissioning evidence-based reviews of areas in which quack nostrums and dangerous fallacies have gained popular traction. Journals could then use their in-house communications expertise to compile and widely disseminate accessible summaries in multiple media showing the comparative effectiveness and safety of scientific vs crowd-sourced treatments. These could be promoted as public interest pages alongside patient pages. Medical journals could also solicit and publish research on medical misinformation, including studies of the effectiveness of different strategies designed to mitigate the influence of misinformation. Such efforts could be foundational for medical educators as they prepare the next generation of health professionals to navigate a world of endemic health-related misinformation.<sup>8</sup> The resulting combination of relevant scientific content and lay-accessible summaries would also equip individual physicians, journalists, and others in 2 respects: (1) for broad public education and advocacy and (2) for activism against pseudoscience by directly debunking myths and discrediting purveyors of medical misinformation (Table).<sup>3</sup>

## A Global Collaboration?

Medical journals have a history of forging a global consensus and taking action on matters of broad scientific and public interest. The International Committee of Medical Journal Editors, for example, has addressed issues such as criteria for authorship, requirements for registration of clinical trials, and more recently, data sharing. International collaborative efforts regarding medical misinformation are still in their infancy, although many cardiovascular journals published an identical editorial warning about this phenomenon in January 2019.<sup>9</sup>

One possibility would be to extend this model by coordinating efforts related to specific topics affected by medical misinformation. In this regard, *JAMA* and other journals have previously coordinated global theme issues on topics of wide relevance to public health. This collaborative strategy could be very effective in addressing issues for which medical misinformation has had adverse effects. For example, a group of general and relevant specialty journals could commit to publishing research reports and opinion articles specifically addressing the issue of childhood vaccines, and publish them at an opportune time, for example, during World Immunization Week. These efforts could promote cross-disciplinary, cross-national and cross-cultural learning, and would very likely capture global media attention. Such collective action may today seem unthinkable, yet, until recently, so too was the reemergence of myriad preventable infectious diseases and the current epidemic of pseudoscience and willful ignorance.

## Conclusions

The rising tide of medical misinformation is already having adverse effects on global health. It requires a robust and coordinated response from health professionals, organizations, institutions, and mainstream media. Medical journals now have an opportunity to galvanize and support this important effort.

## Article Information

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