



Medical Expertise — Balancing Science, Values, and Trust

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A 75-year-old man visited his primary care physician, who told him that a new Covid booster would soon be available. The patient told the doctor that, while listening to conservative radio in order to hear “opposing opinions,” he had learned that one was more likely to die from side effects of the Covid vaccine than from the disease. The physician summarized the available data about the safety and effectiveness of vaccination, but the patient was reluctant to agree. At first glance, this physician’s reaction makes sense. He used his expertise — that is, his special skills and knowledge of the topic — to inform his patient’s decision making. But over the past halfcentury, as was made especially clear by the Covid pandemic, patients have increasingly challenged their physicians’ expertise. Merely providing patients with data and advice has become an inadequate way to disseminate information and promote informed consent. It is helpful to explore this history. How and why did the expertise of physicians — which is also tied into concepts such as authority and trust — get called into question? Although social and political factors have always played a role in determining what constitutes expertise, the growing polarization in American society has led to a crisis in medicine and public health. Rather than assuming that expertise can be restored with better data, we need to understand, in a nonjudgmental way, how patients process both information and misinformation. Such knowledge can help restore the trust that was once the backbone of physician expertise (additional readings are listed in the Supplementary Appendix, available at NEJM.org).

The growing expertise of the medical profession arose from a series of political and scientific developments. The founding of the American Medical Association in 1847 began a decades-long process in which orthodox healers gained “cultural authority,” marginalizing alternative healers. By the early 1900s, driven largely by the new germ theory, researchers had achieved major scientific advances. This “golden age of American medicine” culminated with the successful vaccine against polio in the 1950s, a scientifically proven intervention against a dreaded disease at a time when most Americans still trusted physicians. But by the 1960s and 1970s, social movements — civil rights activism, anti-Vietnam War protests, and second-wave feminism — were confronting powerful groups in society. Similar grassroots campaigns would soon challenge medicine. Especially damning was the 1972 revelation that the U.S. Public Health Service had for 40 years studied untreated syphilis in poor Black men in Alabama, even withholding potentially curative antibiotics. Researchers had explicitly deceived the participants, making it impossible for them to give informed consent. This news came as little surprise to critics who believed that the benefits of American medicine were unequally distributed.

Concurrently, feminist activists were rejecting the paternalism of doctors. The book *Our Bodies, Ourselves*, published in 1971, correctly charged that standard childbirth practices were based not on good science but on patriarchal practices of often uncaring male physicians. Also in the 1970s, women with breast cancer



rejected the reflexive use of the disfiguring radical mastectomy. Once again, they demanded to see the data that supported this operation — and there were none. All these accusations directly attacked medical expertise. How could doctors recommend interventions that lacked scientific validity? The challenge to doctors' authority reached its zenith during the AIDS epidemic of the 1980s and 1990s. Faced with near-certain death, activists acquired remarkable “lay expertise,” learning the science, often explaining it better than doctors did, fighting for more innovative clinical trials of available medications, and participating in grant-review panels. Despite their lack of medical training, these groups added to scientific knowledge, again democratizing expertise.

To some degree, the AIDS model — in which patients revisit existing data or try to generate their own — has informed subsequent lay challenges to traditional expertise. One example is “right to try” initiatives in which patients attempt to get early access to experimental drugs. Conversely, the focus of complementary medicine on improving health, as opposed to identifying and curing disease, may directly challenge traditional physician authority. It's worth noting that patients often learn about these options on the Internet. Although this easy access can be empowering, it also unfortunately may lead to the spread of blatant misinformation, as in the case of the Covid vaccine.

In the meantime, additional scandals have challenged medicine's trustworthiness. For example, medical historians and journalists have recently revisited the egregious, racist experiments performed by J. Marion Sims on unanesthetized slave women and the secret harvesting of cancer cells from Henrietta Lacks, a poor Black woman who was dying from cervical cancer in 1951. The violation of trust highlighted by these revelations has led Black and other populations to raise further questions about medical expertise.

Other challenges have resulted from physician-researchers deliberately obfuscating the truth to support political causes or for personal gain. Beginning in the 1950s, tobacco companies paid physicians substantial amounts of money to “manufacture doubt” about the growing scientific consensus that cigarettes cause lung cancer — even though Big Tobacco knew the data supporting that conclusion were accurate. More recently, the lay media have been full of stories about retracted medical articles, such as those withdrawn in early 2024 by researchers at Dana–Farber Cancer Institute after charges that their statistics were fraudulent. And research based on questionable data continues to receive positive peer reviews and get published.

The Covid pandemic emerged amidst this environment of skepticism and mistrust. Dealing with an often fatal new disease that was poorly understood, researchers and public health officials relied on their usual strategy: science. They generated hypotheses, collected data, drew conclusions, and made recommendations. From the vantage point of 2024, most observers would agree that this process was far from perfect. Yet the often virulent opposition to traditional public health measures, such as isolation and masking, was unprecedented. At a time of great political discord, traditional libertarian, anti–public health arguments caught fire in predominantly conservative populations.



To some degree, these criticisms reflected ignorance of the scientific process, which has always relied on falsifiable hypotheses and the revision of recommendations based on new data.

There was no place for such nuance on the Internet. But perhaps, given the perceived decline in the authority of mainstream medicine that had resulted from decades of scandals, the Covid pandemic represented an almost inevitable response to a mysterious and frightening disease. After all, why would you reflexively trust members of a profession that had omitted to obtain informed consent, relied on tradition instead of the best data, demonstrated racism and sexism, and deliberately falsified information for personal gain? In retrospect, public health officials might have better acknowledged this history as they advocated for protective measures, as well as not reflexively dismissing competing concerns, such as the disruption of schooling, the costs of social isolation, and worries about occasional serious side effects of the vaccines — all of which now appear to be valid concerns.

However one judges the Covid pandemic, it has taught us something very important: the usual response to crisis — providing the best scientific information — is no longer adequate.¹ Rather, we need to understand why patients have become so resistant. Several observers have argued that the best way to do so is to understand patients' values — that is, what belief systems do patients bring to their medical encounters? To some degree, the rise of the concept of shared decision making, which encourages physicians and patients to devise care plans based on clinical data and patient preferences, is an attempt to bring patients' values into play. But in an environment where physician expertise is being questioned, a deeper dive into values is warranted. Helpful tools for eliciting and clarifying patients' values exist, and they include questions such as: What positive things do you value most about your life? Do you feel your values are sometimes violated by your health care providers? Do you have religious or moral views about medicine? If you are hesitant about a certain treatment, why? Another strategy being recommended is to have discussions that explicitly acknowledge historical reasons behind contemporary patient mistrust.

Answers to questions about values often reveal plausible concerns about conflicting scientific data, worries about being treated as a “guinea pig,” a desire to regain a sense of control, and reservations about undergoing medical interventions in order to benefit the larger population. Certain commentators speak of the “gist,” a simple and compelling meaning, such as those listed above, that drives patients' decisions. Insights revealed by nonjudgmental discussion and active listening, they argue, may enable the “rescripting” of an inaccurate gist into one that reflects and provides a better understanding of the medical intervention in question and how it is justified by science.⁵ Of course, discussions of patients' values should not be used to force particular options on them: that would represent an unwelcome return to paternalism. This caution is especially important for disadvantaged populations. The physician of the man described above followed up a few weeks later by phone and asked broader questions: Did the patient see the recommendation to receive a Covid vaccine as



different from other medical advice, which he usually accepted? Did he believe that the vaccine was unproven or unlikely to protect him? Was it important to supplement doctors' opinions with those of others? By the end of the call, the patient announced that he had changed his mind. He still believed it was important to be "open minded" and remained somewhat skeptical about the vaccine, but he had concluded that it was "more to his advantage." He now thought that conservative commentators were deliberately distorting facts, adding, "It's frightening how divided we are."

Science remains the backbone of medical advice, but learning about patients' values, both when they agree with recommendations and when they disagree with them, needs to be a component of doctor–patient communication. Respecting patients and gaining their trust should be considered essential skills of physicians.

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