



Down with vaccines! Science be damned!

Is evidence-based medicine out of step with the times?

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During the recent election campaign, the online Vote Compass asked respondents to rate their agreement with the following statements:

- It really bothers me that hard scientific evidence isn't shaping public policy the way it should be.
- Contemporary politics should be driven by populism and common sense.
- I worry that the roles of experts and professionals produce elitism and inequality.

Including such statements when taking the nation's political pulse reflects awareness of growing tension between those who value scientific research and the long-standing role of physicians, and those who favour anecdote, popular opinion, and alternatives to medical doctors. The medical model is increasingly attacked as outmoded and not achieving the best health outcomes, and non-experts publicly reject evidence-based treatments. Politicians, always aware of the changing attitudes of voters, have become bolder in limiting support for research and in suggesting that academic commitments are a negative attribute for political leadership.

Replacing good science with poorly informed opinion can be devastating in health care—as has been powerfully exemplified in the history of immunization. A new book by Paul A. Offit, Chief of Infectious Diseases at the Children's Hospital of Philadelphia, drives this concern home.¹ From smallpox to diphtheria, tetanus, polio, pertussis, chicken pox, measles-mumps-rubella (MMR), *Haemophilus influenzae* type b (Hib), hepatitis B, pneumococcus, rotavirus, human papillomavirus, and influenza, this book chronicles the ongoing battle between science and the antivaccine movement. Rather than being hailed as heroes, vaccine proponents have been painted as the enemy. Celebrity "experts" like Jenny McCarthy, Jim Carrey, and Bill Maher have used mass media to promote totally unsubstantiated claims about adverse effects of vaccines and provide misleading underestimates of the effects of the diseases that could be prevented by immunization. Antivaccine proponents have claimed that vaccines cause diabetes, epilepsy, sudden infant death syndrome, multiple sclerosis, intussusception, cancer, and autism, despite research evidence totally disproving these claims.


Today's vaccines are effective and safe, with an infinitesimal incidence of serious reactions compared with the risks of the diseases they can prevent. But their effectiveness is compromised if too few people are immunized in a given community. A devastating example of this unfolded after

The Lancet published a paper by Dr Andrew Wakefield, who claimed that MMR vaccine had caused autism in several children he studied. Follow-up research could not reproduce any of Wakefield's findings, and it was found that he had been paid to carry out his studies by a group who were suing the makers of the MMR vaccine for it having supposedly caused their children's autism. *The Lancet* retracted the paper, and Wakefield's name was struck from England's medical register. Despite this, he and his supporters continued to claim that his findings were legitimate. Rates of MMR vaccination dropped considerably in many communities, resulting in loss of herd immunity and outbreaks of measles, with hundreds of hospitalizations and several deaths. The antivaccine movement continues to claim that the findings against Wakefield are part of a medical conspiracy; thousands still support him and reject the use of MMR vaccine.

Rejection of the evidence for vaccines by a non-expert populist movement has spurred debate about the relative value of scientific research versus personal belief and popular opinion and how each perspective should affect public policy. Some jurisdictions have tried to legislate mandatory immunization programs—including banning unimmunized children from school. The courts, however, have usually decided in favour of those refusing the vaccines, based on the right to religious or "philosophical" freedom.

Should the rights of a few outweigh those of the many? In Offit's book, one mother, in a community where herd immunity was inadequate to prevent an outbreak of Hib infection, almost lost her immunized daughter to Hib meningitis: "Parents need to understand that when they choose not to vaccinate they are making a decision for other people's children as well. It doesn't seem fair that someone like Jenny McCarthy can reach so many people when my little girl has no voice."¹

Another mother, in a town where hundreds were quarantined to control a measles outbreak started by 1 unimmunized child, was asked if everyone should have the right to choose not to immunize: "Yes—but they can't go to the same schools ... or stores ... or doctors' offices as the rest of us—they have to live on their own infectious diseases island."¹

The anti-doctor, research-rejecting troops are out in force fighting the evidence for vaccines. A greater concern is that they are part of a larger army that believes personal and popular opinion should trump medical research—an army that, left unchallenged, would like to see the supporters of evidence-based medicine (and not the antivaccine population) inhabiting their own island. 

Reference

1. Offit PA. *Deadly choices: how the anti-vaccine movement threatens us all*. New York, NY: Basic Books; 2011.

Cet article se trouve aussi en français à la page 631.