VACCINATION ADVOCACY

Listen, Understand, Engage

Mundus mutatio, vita opinion. (The world is change. Life is opinion.)
–Marcus Aurelius

THE TWITTER HASHTAG “#VACCINESWORK” MAY SEEM REDUNDANT TO GENERATIONS who experienced polio firsthand. Along with clean water and proper nutrition, vaccination is a pillar of every public health program. Vaccines prevent disease and death (at least 3 million lives per year), save suffering and money, and generate health and wealth—but not if they stay in their boxes.

In May 2012, the Decade of Vaccines (DoV) (1) collaboration presented for ratification a Global Vaccination Action Plan to the World Health Assembly. This document acknowledges that all stakeholders must do better with public acceptance of vaccination. Here, we propose a comprehensive new framework for vaccination advocacy that calls for a better understanding of public perceptions to build and sustain individual and community acceptance of vaccines.

VACCINATION ADOPTION = ACCESS + ACCEPTANCE

The challenges of achieving and sustaining widespread vaccination coverage—essential for successful disease control—were clearly illustrated in polio and measles eradication efforts. The Global Polio Eradication Initiative has taken longer than expected in large part as a result of low vaccination coverage in the remaining endemic countries: Pakistan, Afghanistan, and Nigeria. The Measles Initiative showed great initial progress, but suboptimal vaccination coverage rates in Europe, North America, and Africa have led to recent disease outbreaks, squelching hopes of eradication.

With both polio and measles, adoption of vaccination is hampered by both access and acceptance issues. Access remains a global challenge: Inadequate health systems prevent 250 million children born each year from being vaccinated (2). However, acceptance remains a small but fragile part of the equation. As recently as 2003, religious and political leaders endorsed rumors in Nigeria that the polio vaccine was a Western plot to sterilize Muslims, leading to widespread vaccination refusals in five northern Nigerian states. Poliovirus subsequently spread to 20 other countries, eroding any hopes of polio eradication in that decade.

Most vaccination advocacy approaches are based on the “deficit model” of science communication, in which “empty public vessels” must simply be filled with sufficient facts and information to obtain their support for science. In fact, this method doesn't work very well, and ironically, this evidence-heavy approach is not evidence based (see http://www.youtube.com/watch?v=DDOh4_qzhhM). The realization that data-based, rational decisions do not figure widely in people's health-seeking behaviors comes as no surprise to scholars in the cognitive and social sciences.

Cognitive psychology has shown that the rational-actor model, which underpins the global economic system, fails to describe the ways people make decisions. Instead, our decisions emerge from both deliberative and nondeliberative pathways. The deliberative pathway uses the more familiar Promethean gifts of logic, reflection, and analysis, whereas the nondeliberative route is fast and intuitive; the former draws on factual information and details, the latter on values, worldview, emotions, cognitive biases, and beliefs (3). Social pressure and expectations are also strong determinants of our beliefs and behaviors. In a study in The Gambia, social demand—not information and education—was identified as the main driver of vaccination acceptance. Data from large attitudinal studies in the United States and the United Kingdom suggest that for the majority of these populations, vaccination remains a social norm. Modern economists get it: The new discipline of behavioral economics now informs economic policies across the world. This same understanding should be used to build the discipline of behavioral public health, for which vaccination provides an excellent model.

ADAPTING TO A CHANGING WORLD

In the 21st century, patients are becoming consumers, evidence is balanced with values, risks loom larger than benefits, and trust in scientific authorities has eroded. Patients in-
creasingly expect their values, beliefs, and personal viewpoint to be considered along with the evidence base. In this context, vaccination takes a double hit. A victim of its own success, the decreased visibility of diseases tips the balance further toward risks in the public mind. And as people take increasing responsibility for their health care, the societal benefits of community (herd) immunity that come from vaccines defer increasingly to perceived individual benefits. Technology is facilitating these trends. The health-related information on the Internet is indiscriminate and vast, and social media constitutes one huge conversation in which vaccination is being discussed, often erroneously. To sustain public trust in this shifting world, scientists and policy-makers must translate and apply insights from the cognitive and social sciences to the ways they communicate and engage with a public that wishes to be part of the conversation.

**NEW FRAMEWORK**

Here, we propose a new framework for vaccination advocacy that pivots around three axes: listen, understand, engage.

**Listen.** The public conversation in the social media is a vast river of data, but it is indexed and searchable in real time, making it feasible to monitor discussions and rumors related to diseases and vaccination. Such monitoring could provide (i) a wealth of insight into the ways that the public understands disease and vaccination, (ii) early warnings around potential vaccination-related issues, and (iii) much-needed metrics for evaluating the impact of public health programs.

In addition to tracking opinions, researchers need to monitor vaccination-related intentions, attitudes, and behaviors. Although there are hundreds of published vaccination-related attitudinal studies, they were performed in different contexts, at different times, and with different methodologies; also, they assessed different vaccines and decision-makers. Thus, it is difficult to identify general attitudinal predictors of behavior from these studies. Psychometrically validated tools must be developed and implemented in longitudinal studies across the globe in order to capture and measure baseline attitudes to vaccination and then track their evolution in near real time.

**From assumptions to understanding.** There is already a large, diverse literature relevant to vaccination acceptance that spans a multitude of disciplines. However, inconsistent methodologies, isolation of disciplines, and physical and cultural distances between researchers have made any synthesis of the existing knowledge difficult (4).

We propose the federation of all researchers interested in immunization acceptance under a new metadiscipline: immunization decision-making. In 2010, we convened the multidisciplinary Motors of Trust in Vaccination think tank, which was a first step to mapping the key research areas and questions. This group clearly identified the need for methodological improvements to better harmonize research efforts and allow comparison of findings across different contexts. In addition to the disciplines traditionally under the umbrella of vaccinology, this systems approach to understanding the individual, social, and environmental factors that influence immunization decisions should include cognitive and social psychology, neuroscience, economics, anthropology, and communication science. The outcome of this coordinated research agenda should be new ways of understanding decision-making around vaccination and evidence-based solutions to sustaining immunization programs in different cultures and contexts.

**From broadcast to engagement.** The traditional fact-founded messages of disease, risk, and social responsibility are not convincing a public living in a socially supernetworked world. Either we join the conversation, or those who are already participating will hold increasing sway over public opinion. Other scientific disciplines began moving away from the deficit model and toward a public-engagement approach more than a decade ago (5). Switching from a monologue to dialogue with the public has been shown to increase positive perceptions about science and scientists and make people more likely to engage with their peers on the subject of nanotechnology (6).

But it will not be enough to be a part of the conversation; scientists and policy-makers must speak a language that the public understands. Risk-communication experts remind us what Aristotle said more than 2000 years ago: “For a message to have resonance, the *logos* [evidence and logic] must be tempered with *pathos* [emotion and values] and be delivered with *ethos* [credibility and authority].” A quick glance at most public health communications shows a density of *logos* but little *pathos* or *ethos*. As scientists, we prize objectivity and
often believe that our ethos comes from dispassionate delivery of sound facts. However, the attendant lack of pathos means that messages rattle rather than resonate in the public mind. Transparency is also crucial to safeguard ethos.

**CHANGING TACTICS**

Traditional approaches to vaccination advocacy have shown their limitations. Modern advocacy methods require new thinking that moves from broadcast to engagement, from assumptions to evidence, from opacity to transparency, and from polarization to collaboration. The DoV Global Vaccination Action Plan identifies some important steps toward securing acceptance of vaccination programs. But we propose that immunization stakeholders across the world adopt a broader, consistent framework for vaccination advocacy. Assuming a role as a partner in immunization, our team has initiated many of these approaches, including social media monitoring, validated instruments for attitudinal barometers, creation of a collaborative platform for vaccination-acceptance research, and an Immunization Influencers Initiative that we hope will connect immunization voices in social media across the globe. These initiatives should help catalyze a shift by the immunization community toward evidence-based public engagement.

– Angus Thomson and Michael Watson

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**Competing interests:** M.W. is chair of the International Federation of Pharmaceutical Manufacturers and Associations (IFPMA) Vaccines Committee.