Credit: A. Miglan

Politics and public trust shape vaccine risk perceptions

Public mistrust of vaccines is heightening, fuelled by new communication environments such as social media. Using the recent case of the Dengvaxia vaccine, Heidi Larson explores public and political reactions to vaccine risks.

There is something about vaccines, and getting vaccinated, that touches nerves — personal, political and cultural nerves. It's not natural; it hurts ("just a little bit"), and sometimes has side effects. Although these are mostly minor issues, they still provoke vaccine anxiety, reluctance and refusal. Vaccines are regulated, and sometimes mandated, by government, and vaccination is resisted by those who feel their personal freedom is being imposed upon. And those who do not trust the government — often for reasons unrelated to vaccines — sometimes extend their distrust of government to distrust of vaccines, as well as towards the people and systems that deliver them. In addition, vaccines are produced by the pharmaceutical industry, which — even in its most generous and humanity-driven moments — aims to generate profit, provoking public concerns about motives. Finally, adding to these other multiple levers of influence on public trust is a mix of cultural, religious and philosophical views on health and disease prevention. Together, this complex mix of human behaviours shapes the Achilles' heel of vaccination, mediating and disrupting the potential to leverage the full 'power and strength' of vaccine technology.

It is, in many ways, a formidable achievement that local and global immunization efforts over the past four decades have managed to navigate these challenging external factors to achieve relatively high vaccine coverage, at least of basic childhood vaccines. But the tide is changing. What were once isolated, local pockets of vaccine resistance or refusal, whether for political, cultural or other reasons, are now becoming more mainstream, more connected and more complicated to address. The radically changed communication environment allows social media and the Internet to fuel the viral spread of vaccine sentiments globally, as well as allowing organizations of like-minded individuals to connect across remote locations.

It is revealing to look at how memes of quickly spreading vaccine questions and concerns find fertile ground in some settings, and gain little traction in others. In other words, politics and distrust in one setting can fuel a vaccine panic, while the same issues raised in another context can wither and die, with little impact on the vaccine programme.

Consider the recent saga around Dengvaxia, the first promising vaccine against dengue fever, a disease that afflicts millions of people globally. In early 2016, the World Health Organization issued a statement supporting this new vaccine for countries with high burdens of dengue. In April 2016, the Philippines was the first country to introduce the vaccine, and in August 2016, Brazil also approved their Dengvaxia vaccine programme. Both countries were facing serious outbreaks of dengue and the new vaccine was a glimmer of hope to mitigate the individual and social distress caused by the disease.

> Political science, digital epidemiology, social anthropology and risk science are all needed to genuinely understand and address the new realities around vaccines.

In November 2017, a notice was issued by Dengvaxia's producer, Sanofi, calling for a relabeling of the vaccine to indicate an additional risk. In short, Sanofi reported that while the vaccine provided protection against future severe dengue fever among those who had already been exposed to dengue, there was new evidence that confirmed that those who had not previously been infected by dengue were at risk of more, rather than less, severe dengue.

Although the announcement did not call for a withdrawal of the vaccine, but recommended a more targeted use of it, countries that had previously approved the vaccine reacted very differently. The Philippines made international headlines with public outrage and a suspension of the vaccine programme, as well as legal action against the manufacturer. The social media tirades and political tensions continue, with news reports that the Dengvaxia panic is spilling over to public hesitation around other vaccines. Brazil, on the other hand, recognized that the vaccine still had benefits and did not suspend the vaccine, but brought special attention to the risks and need to target the use of the vaccine.

There are clearly vaccine risks that need to be addressed, and reasonable questions around whether these risks could have been reported earlier, but the scope and scale of the public and political reaction in the different settings reflects the different underlying political contexts as well as political players. What do these different public and political reactions to vaccine risks — real or perceived — tell us?

These larger-scale dynamics are different from the individual doctor-to-patient influences on vaccine acceptance. These dynamics need different research methods than studies investigating individual decision-making if we are to understand what triggers these varied reactions over time and place. Political science, digital epidemiology, social anthropology and risk science are all needed to genuinely understand and address the new realities around vaccines. These new realities include a far more complex vaccine environment, an era of overall low trust at many levels (with a consequent heightened risk aversion), and a dramatically changed communication environment allowing the rapid spread of emotional contagion and its behavioural consequences. ❐

Heidi J. Larson
Vaccine Confidence Project, Department of Infectious Disease Epidemiology, London School of Hygiene & Tropical Medicine, London, UK.
e-mail: Heidi.Larson@LSHTM.ac.uk

Published online: 26 March 2018
https://doi.org/10.1038/s41562-018-0331-6

Competing interests
The Vaccine Confidence Project has received funding from GSK and Merck to convene research symposia. The Merck funding was to convene a research symposium in June 2017, and was not to conduct research. Funding from GSK is to address emerging vaccine confidence issues and to build a global research project (surveys, in-depth interviews and focus groups in 15 countries) on acceptance of vaccines during pregnancy. We have developed the research protocol and are awaiting approval of the full proposal for the second stage of funding to start the global study. In neither case has GSK or Merck, or anyone else, seen the manuscript or influenced the content. The pharmaceutical industry had no role in the conceptualization and writing of the article or in the decision to publish.