

## Volatility of vaccine confidence

Last week, the European Medicines Agency declared the AstraZeneca COVID-19 vaccine to be safe and effective, after several European Union member states suspended its use because of blood clot concerns. Will the public trust this message? This week's news in the United States could help-- phase 3 clinical trials of the vaccine show 79% efficacy in preventing symptomatic COVID-19. But numbers alone are not enough to change the minds and hearts of the public. Sentiments about vaccines are volatile and they reflect external events as well as internal emotions.

Various polls on vaccine willingness made early predictions of low vaccine uptake due to vaccine hesitancy. But with the ups and downs of virus swells, and more information – and misinformation – around the vaccines, confidence levels also had their ups and downs. Vaccine willingness started to climb with early news of a highly effective Pfizer vaccine, a second wave of infection, the emergence of new variants, and more lockdowns. Now, it's a reported safety risk and consequent anxieties that has sent sentiments plummeting in some countries.

Author and physician Danielle Ofri called this undulation of sentiment “emotional epidemiology” as she reflected on the seeming eagerness, then hesitation or refusal, to receive the H1N1 influenza virus vaccine during the 2009 pandemic. COVID-19 is affecting the world at a much larger scale than H1N1; thus, vaccine hesitancy could pose a great threat to controlling the pandemic.

Scientists, politicians, and public health officials may not always recognize that vaccine hesitancy is not the same as being “anti-vaccine.” The vaccine hesitant are often mischaracterized as “anti-science” or simply “anti-vaxx.” But being hesitant or undecided in the face of a possible safety risk is not being anti-vaccine. A failure to understand the distinction can feed both fires.

What distinguishes the vaccine hesitant from anti-vaxxers? The “Anti-Vaxx Playbook,” recently published by the Center for Countering Digital Hate, underlined three key messages used by organized anti-vaccine groups: COVID-19 is not dangerous, the vaccine is dangerous, and vaccine advocates cannot be trusted. This builds upon a long history of “anti-vaccine tropes” identified by health anthropologist Anna Kata, including questioning the safety and efficacy of vaccines, promoting alternative cures, infringing individuals' civil liberties, promoting conspiracy theories, and claiming that vaccines are immoral. These themes are widespread on social media (nearly 150 anti-vaxx organizations have over 10 million followers online). Although frequently portraying themselves as grassroots activists, anti-vaccination advocates typically represent well-organized entities with explicit agendas, ranging from financial interests (such as selling alternative cures) to ideological or political commitments (such as opposing specific legislation). These organizations also frequently shift their goalposts, claiming that vaccines cause any number of maladies, and expressing simultaneous support for opposing political platforms.

The vaccine hesitant are those who are undecided. Unlike highly organized anti-vaccination groups, these individuals are highly diverse. Modalities of hesitancy range from those who might delay receiving a vaccine because of anxiety around safety concerns, to fears due to historic individual or community experiences, to those who simply have questions about COVID-19 vaccines. Those who refuse vaccines are not necessarily “anti-vaxx” although vaccine hesitant individuals may consume content from anti-vaxx organizations as they search for evidence to confirm or dispel their concerns. The vaccine hesitant are therefore vulnerable to manipulation by anti-vaccine activists. At the same time, they risk being judged or stigmatized as being “anti-vaxx” by the very people – health care professionals – who are best positioned to encourage healthy behaviors.

How can vaccine hesitancy be effectively addressed? Communication about vaccines needs to be delivered in an empathic and sensitive manner to avoid judging or stigmatizing those who question inoculation. This requires leveraging established, trusting relationships to directly address the bottom-line concerns of the vaccine hesitant. Examples include the Engaging in Medical Education with Sensitivity initiative during the 2019 measles outbreaks, in which Orthodox Jewish nurses used empowered parents in that community to reach their own conclusions about vaccines while listening to their concerns and helping them contextualize information. Also, the University of Maryland's Health Advocates In-Reach and Research network of Black barbershops and salons trains personnel as health educators to encourage their customers to pursue healthy behaviors.

In addition to the official regulatory endorsements of the safety of the AstraZeneca vaccine, it is these locally trusted voices who will help build confidence in COVID-19 vaccines. The world needs all the safe and effective vaccines that exist to end the pandemic. But it needs people who believe in them.

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