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## The world must accept that the HPV vaccine is safe

*But the science alone will not be enough to build public and political confidence, says Heidi Larson.*

Every year brings 528,000 new cases of cervical cancer and 266,000 deaths, linked to human papillomavirus (HPV). We have a highly effective HPV vaccine, but suspicion stands in the way of its adoption in many countries. How can we dispel this mistrust?

On 20 November, a report from the European Medicines Agency (EMA) confirmed the vaccine's safety. The agency had been asked by Denmark to reinvestigate after symptoms of dizziness, fainting, aches and pains were reported in adolescent girls and suspicion fell on the vaccine. It is not the only country to report such events.

The good news is that public concern about these reactions is being heard and has prompted further investigation. The EMA report is one of many to confirm the safety of the vaccine and conclude that there is no need to change vaccination policies.

The not-so-good news is that not everyone believes them.

Evidence suggests that the events were 'psychogenic illnesses', psychological reactions that can spread fast, especially when girls are vaccinated in groups at school and witness each other's reactions. A growing collection of YouTube clips is also fuelling anxieties.

My research group studies situations in which public, provider or political trust in vaccines has been broken. We have heard many testimonies of the anxiety that politicians and decision-makers face when pressured about suspected vaccine reactions while also hearing that scientific evidence exonerates the vaccines. We have learned the importance of monitoring public sentiment, responding promptly to concerns and engaging and listening to the public early on when vaccines are being introduced.

In some nations, politicians side with the science. In others, they bend to minority opinions. Japan reacted ambiguously to reports of HPV vaccine side effects: it withdrew 'proactive' recommendation of the vaccine while it investigated, but continued to provide the vaccine for those who demanded it. The investigations found no clear causal link to the vaccine, but the recommendation remains suspended.

In another case, in 2010, we investigated the suspension of HPV vaccine demonstration projects in two Indian states. Vaccination acceptance was high in the projects; the pressure had come from an activist women's group far away in New Delhi. When the group's demands for public dialogue about the safety, efficacy and cost-effectiveness of the initiative were not answered, it found, and widely reported, seven deaths among girls who had participated.

These deaths were judged unrelated to the vaccine, but the projects never resumed. Nearly five years later, millions of women are missing out on the chance to prevent cervical cancer. One-quarter of global cervical-cancer deaths are in India.

Some governments stand by the science even when faced with public panic. Last year, 600 girls in a Colombian municipality reported symptoms after HPV vaccination. Faced with local anxieties and some anger, the Colombian government expressed empathy, and the vaccination programme continues. England reached 87% full-dose coverage in 2014, having averted a potential public-confidence crisis in 2009, when a 14-year-old girl died after being vaccinated. Health officials expressed concern, promptly investigated the girl's death and found it unrelated to the vaccine.

Psychogenic reactions are not unique to HPV vaccination. During the 2009 H1N1 influenza pandemic, there were 23 episodes of mass psychogenic illness in Taiwan's school flu-vaccination programme. In Iran, people panicked after 10 girls in a class of 26 experienced psychogenic reactions after tetanus shots.

I learned about the Iran situation while working with UNICEF just over a decade ago, when I was asked to help plan a nationwide measles campaign — and, specifically, to design ways to preempt the type of panic provoked by the tetanus vaccine reactions. The measles campaign was a success, but it took considerable advance work that included gathering local input into communication materials and outreach early in their preparation; engaging young people (the campaign was targeting everyone under 25 years old); and working with schools, local leaders and the media.

The HPV vaccine carries unique challenges. Because the first thing it prevents is sexual transmission of HPV, use of the vaccine evokes moral judgements around sexual behaviour.

The United States is struggling to get HPV vaccination coverage above 40%. Some parents are anxious that the vaccine will make their daughters more promiscuous, even though multiple studies have found no such effect. Other reports cite 'embarrassment' in some cultures about accepting the vaccine.

The HPV vaccine touches nerves, and acceptance needs strategies that vary between cultural and political settings. Despite the challenges, more than 80 million girls and women around the world have received the vaccination.

We should not underestimate the potential for progress to be disrupted by the mass spread of vaccine reactions and concerns, the amplification that can follow through social media and the vulnerability of political processes, which sometimes find themselves paralysed between public and scientific opinion. ■

**THERE ARE BROAD  
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