Why are Internet anti-vaccine messages dangerous

July 19 2011, By Karene Booker

Evidence has long shown routine vaccines to be safe and effective, but a growing community of critics still claims that they pose more danger than the diseases they prevent. A Google search of "vaccine," for example, produces links to government and science-based vaccine websites on the same screen as official-sounding anti-vaccination links.

Given the success of vaccines in preventing a long list of diseases, why is opposition to vaccination gaining hold? Decision-making expert Valerie Reyna contends that it's because anti-vaccination messages tell a compelling story compared to official sources, and they meet people's need to understand rare adverse outcomes.

"In the era of Web 2.0, the contagion of ideas, transmitted rapidly through social media, is as concerning as the contagion of diseases because of their power to reduce vaccination rates, leaving populations vulnerable to preventable death and disability," said Reyna, professor of human development in the College of Human Ecology and a co-director of the Center for Behavioral Economics and Decision Research.

This spring, the Centers for Disease Control reported that the United States is experiencing the highest number of measles cases in more than a decade. According to the alert, measles was declared eliminated in the United States in 2000 due to a high vaccination rate. This could change should vaccination rates decline.

Reyna presented her model of vaccine decisions at the University of

Erfurt, Germany, in May to an international meeting of scientists examining the implications of the Internet and social media such as Twitter on public health messages about vaccination.

Being informed about vaccines involves more than having the facts. According Reyna's research, people primarily rely on the meaning or "gist" of a situation rather than details to make judgments and decisions.

"Gist is simple, but not simple-minded," Reyna said. "It involves connecting the dots -- building on background knowledge, life experience and values. When people lack background knowledge, they tend to rely on anecdotes, personal experience and the little information that is widely available."

Since most people don't understand how vaccines work, the Internet, which facilitates users across the globe to sharing personal experiences and ideas about health care, fills the vacuum.

According to Reyna, anti-vaccination messages are expected when people don't understand how vaccination works and when adverse events that are difficult to explain appear to be connected. Autism, for example, is diagnosed in children during the same time period that children receive a battery of vaccinations. Despite research to the contrary, anti-vaccination messages have claimed vaccines are to blame. Official sites, on the other hand, tend not to provide a convincing narrative story line that helps people connect the dots.

Under these circumstances, how do people approach the decision to vaccinate? In Reyna's model, the decision to get a flu shot, for example, could be a seen as a decision between feeling OK (by not getting the vaccine) or taking a chance on not feeling OK (due to a vaccine side effect). Without better information, most people would choose not to get a vaccine.

"Public health messages need to be designed so that the correct 'gist' pops out," Reyna said, "because the drive to extract meaning, combined with widespread lack of background knowledge about how vaccination works, is fertile ground for misleading explanations to take root."

Provided by Cornell University

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