

What the Disneyland measles outbreak of 2014-15 can teach us about how stories go viral

May 12 2016

New research published Wednesday in the journal *Vaccine* revealed a key factor for what it takes to make an article about vaccines go viral: including a clear bottom-line message explaining the meaning of vaccination. David Broniatowski, assistant professor of engineering management and systems engineering at the George Washington University, led the study.

The results of this study on news articles posted during the Disneyland measles outbreak suggest that anecdotes or stories may not be necessary for an article to go viral if the article clearly explains the bottom line, or gist, of vaccination. In a time when there is renewed discussion on the safety of vaccinations, Dr. Broniatowski and his co-authors say this has direct implications for how reporters, doctors and [public health officials](#) communicate to patients and the public.

"When hearing an anecdote or reading raw statistics, readers may not understand what the article means to them, and that the science on vaccines for diseases like the measles and the flu is clear," said Dr. Broniatowski. "Articles that included a bottom-line message, explaining what the data mean for the patient, were much more likely to go viral."

In order to understand what makes an article on vaccinations go viral, researchers analyzed more than 4,000 [news articles](#) that mentioned vaccinations during the Disneyland [measles outbreak](#) in 2014-15 that

sickened 147 people in the U.S. to assess what made them most likely to be shared on Facebook.

"The massive online interest in vaccines in the wake of the Disneyland outbreak created the perfect environment for testing these theories," said Mark Dredze, assistant research professor of computer science at Johns Hopkins University and technical lead for the study. "Computational algorithms allowed us to analyze thousands of articles and millions of social media shares."

The researchers categorized articles according to whether they contained a bottom-line meaning, statistics or stories. The study found that articles communicating a bottom-line meaning were shared more than twice as much as others. Although articles including statistics were more likely to be shared than articles without statistics, articles including a story or anecdote were not more likely to be shared. This means that stories may only be useful to the extent that they communicate a bottom-line meaning.

"Statistics alone won't convince patients," said Karen Hilyard, assistant professor of health communication at the University of Georgia and a health communications expert who co-authored the study. "The most effective way to communicate with a patient is for doctors or public health officials to help patients interpret those statistics in a meaningful way, helping them remember the main takeaways."

The study supports the findings of "fuzzy trace theory," a psychological theory that there are two types of memory: gist (bottom-line meaning) and verbatim (facts, statistics, etc.) and that communications focusing on the gist will be more compelling.

The researchers also found that articles expressing positive opinions about both pro- and anti-vaccinators' points of view were shared 58

times more often than other articles. This means that articles may be more likely to be shared if they acknowledged the other point of view, while still communicating the bottom-line meaning to their audience.

The paper, "Effective Vaccine Communication During the Disneyland Measles Outbreak," published Wednesday in the journal *Vaccine*.

More information: David Andre Broniatowski et al, Effective vaccine communication during the disneyland measles outbreak, *Vaccine* (2016). [DOI: 10.1016/j.vaccine.2016.04.044](https://doi.org/10.1016/j.vaccine.2016.04.044)

Provided by George Washington University

Citation: What the Disneyland measles outbreak of 2014-15 can teach us about how stories go viral (2016, May 12) retrieved 25 April 2024 from <https://medicalxpress.com/news/2016-05-disneyland-measles-outbreak-stories.html>

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