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## Bits from “Bullets and Brains”: When Mass Hysteria Strikes

### Dr. Wilner:

You're listening to Book Club on ReachMD. I am Dr. Andrew Wilner, and today I'll review one of the more than 100 essays from my book *Bullets and Brains*.

In 2012, I wrote a blog about mass hysteria, which was published in *Bullets and Brains* as chapter 38, *An Explanation for Mass Hysteria*. That article reviewed the then current case of more than a dozen high school girls suddenly affected with Tourette-like symptoms in the small town of Le Roy in Western New York State. The girls exhibited twitches, spasms, and vocal outbursts. This apparent outbreak of neurologic disease was highly publicized with articles in the *Huffington Post*, *New York Times*, NPR, local news stations, as well as YouTube videos and Facebook posts. Two of the affected girls even appeared on *The Today Show* accompanied by their mothers.

Potential etiologies, such as environmental toxins, postinfectious pediatric autoimmune neuropsychiatric disorders associated with *Streptococcus* infection, or PANDAS, and other unlikely theories were put forth. The vast publicity seemed to worsen the girls' condition. When the dust finally settled and neurologists examined the patients, it became clear that these shared symptoms represented a case of mass hysteria. Mass hysteria is also known as collective or epidemic hysteria or

mass psychogenic or sociogenic illness. The Le Roy teenagers were involuntary mirroring activity they saw in others.

Hysteria is defined as a disturbance of body function characterized by neurological sensory or motor symptoms for which the available medical explanations either do not explain or fail to account for the severity of the patient's impairment. Hysteria is nothing new. The first documented case appears on a papyrus from 1900 BCE. Much later, the French neurologist, Jean-Martin Charcot, devoted particular attention to patients with hysteria. Joseph Babinski, known for his eponymous sign indicating corticospinal tract injury, correctly argued that hysteria was psychological, not neurological in origin. Hysteria may be considered synonymous with the modern Freudian concept of conversion disorder where psychological stress results in somatic symptoms. The neurobiology of conversion disorder has not been determined. False body mapping and mirror neurons have been proposed as possible explanations. Episodes of mass hysteria require a common precipitant affecting a relatively closed and interconnected community. In the above case, the precipitant was tic symptoms that suddenly appeared in a popular high school cheerleader, which rapidly spread to other school girls. The closed and interconnected community was a small town school.

Here is an update on mass hysteria from another strange episode in a very distant part of the world. In July 2015, thousands of school children in the Southern Philippines reported sudden onset of symptoms such as abdominal pain, diarrhea, dizziness, headache, loss of consciousness and vomiting after ingesting an albendazole deworming tablet on National School Deworming Day. In the Philippines, soil-transmitted intestinal parasites affect millions of people. While treatment side effects can occur, particularly in heavily infected children, reports of toxic effects far exceeded expectations. Eighty-five percent of cases came from the Zamboanga Peninsula on the island of Mindanao, a relatively isolated area. I've been to Zamboanga a couple of times for medical mission work, and it is definitely off the beaten track. It turns out that children in this region were exposed to a text message falsely claiming that several students treated with the deworming medication had died. False information was also spread on social media that children had received expired albendazole tablets. Mainstream media amplified these fabricated claims. Widespread panic occurred. Many children were rushed to the hospital, even those who did not have symptoms. The deworming tablets were checked and found not to be defective. No one died. The health department held community assemblies and offered national press releases to reassure the public of the safety of the deworming medication. The authors of this report observed that schools in other countries, including Canada, China, Italy, Jordan, and Iran, have also reported mass hysteria after a health intervention.

To conclude, physiologic symptoms without physiologic explanation constitute hysteria, which has been documented since man began to write on papyrus. In the case of the Le Roy teenagers, neurologic

symptoms in a popular girl led to an outbreak of mass hysteria. In the Philippines, credible false information that expired antiparasitic drugs were administered as well as inaccurate reports of deaths contributed to widespread panic affecting thousands of children. In both the New York and Philippine cases, the spread of information by mass media magnified and probably sustained the outbreaks.

Mass hysteria exists in the borderland between neurology and psychiatry. It remains a contemporary problem, and we have much more to learn about this strange phenomenon. These episodes also emphasize the danger of false medical information. To limit future outbreaks, we must find ways to prevent the spread of misinformation by individuals and the media.

For more information on my book, *Bullets and Brains*, and to access other episodes of this series, visit [ReachMD.com/BookClub](https://ReachMD.com/BookClub) where you can Be Part of the Knowledge. For ReachMD, I'm Dr. Andrew Wilner. Thanks for listening.