

## Editorial

# Mad Cows and the Maddening Decade of Public Health

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Nearly 10 years ago, on March 20, 1996, the term “mad cow disease” went global. The U.K. government issued a report suggesting that bovine spongiform encephalopathy (BSE), the technical term for mad cow disease, could be transmissible to humans, who could then develop CJD—Creutzfeldt–Jacob disease.

While this may have the complexity of twentieth-century science fiction, it was simplified for the public that eating beef can cause a mad-cow-like disease in humans. The fears quickly spread beyond the United Kingdom to Europe and the rest of the world. Today, the ramifications are still felt, with bans of beef in force in Japan.

The initial announcement by the UK government a decade ago sparked concern that 16 cases affected young people under 40 were the tip of the iceberg. Mad cow was heralded publicly as an AIDS-like crisis in Britain. Scientists argued over how the infectious agent got into cows, though no one has yet proved the link of BSE to CJD, from cows to humans from eating beef.

The key question stemmed from the theoretical exposure to the believed infectious agent, the misfolded protein called a prion that is thought to cause the disease in cows, and how many victims would be fated to emerge in the years to come as CJD’s (unknown) latency runs its course. Even the U.S. Centers for Disease Control and Prevention, assuaging public fear in the United States, issued a statement in the *New York Times* linking causality: “There is no evidence that anyone in the United States has died of the *mad cow disease that has killed eight people* in Britain, the Centers for Disease Control and Prevention said today.”

In actuality, the facts today point to a diminishing incidence of variant CJD, with 153 cases reported over the past decade, and only 5 cases in 2005. There are other facts to consider: First, there is no direct evidence that CJD comes from the ingestion of contaminated beef, as the mad cow prion has never been found in solid muscle meat like the roasts, steaks, and other cuts commonly consumed. There also are still a number of scientists who believe the prion is not the carrier of the disease.

The question a decade later is not whether we can prove science right that CJD was spread from eating beef. What is at stake today goes well beyond infected beef: It involves questions of how we should respond to other future outbreaks. As few people publicly challenge the veracity of the claims or the quality of evidence with

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a scientifically plausible argument, the policy response to potential, theoretical health threats such as SARS, avian flu, and the next food scare is at stake. History is not the best guide in these cases. Most decisions on banning imports or changing feedstocks in the British scare were made not by scientists but by politicians and business people concerned with political and economic considerations rather than with actual risk to human health. Competing messages by news organizations, politicians, watchdog groups, and medical officials continue to make the public uneasy. In the recent case of avian flu, the top World Health Organization (WHO) official coordinating the response suggested that the Avian flu could kill 150 million people IF it mutated for human-to-human transmission. But the probability of the jump from bird to human has yet to be established. This was further extrapolated to an economic catastrophe estimated by the World Bank for the first year to be more than \$1.1 trillion, warranting a significant response to mitigate risk. There has yet to be adequate funding for multiple stakeholders who appropriately assess probability in concert with preparation for the ideal global response. The recent loss to the Asian poultry sector is already around \$18 billion, in line with the loss to British farmers in the initial crisis phase.

At a recent pledging conference in Beijing, Margaret Chan, WHO assistant director challenged the 800 representatives of 100 countries: “Whatever resources you put in place—compared to the potential pandemic cost—it is peanuts. It is nothing.” Such a feeling of hopelessness is in line with the response developed during the years when mad cow disease was thought to be confined only to cows. Creating a robust public health system to address infectious disease in countries where limited systems are in place is not just a simple economic task; it requires deployment and expertise.

Regardless of the perceived threat, the immediate focus must be to save lives and prevent any deaths from occurring. But as a former public health researcher (I am now a vice president in governmental affairs in Europe for Johnson & Johnson, work that has no relation to the mad cow issue), I think we should also look at each new potential outbreak as an opportunity to enhance public health. For example, the potential deadly avian flu epidemic may in the end improve public hygiene if we can stress the need for environmental precaution, personal protective measures such as hand washing, and explanations to the public about the infectious nature of disease, all while reinforcing the value of epidemiologic measures including reduction of exposure to potential infectious agents.

Perhaps the last decade with mad cows and mutated viruses will advance better policy decisions based on sound science and evidence. But for now, as scientific certainty does not exist, today’s marketplace of business, media, science, and politics requires integrity, trust, and patience. “*They say* that beef can kill you” has become a reality to many. Some already believe that “*They say* that the bird flu will (or already has) spread from human to human (and hence I am at risk),” despite no real evidence. We should work so that the next “*They say*” in health should advance public health with trust and integrity. Stakeholders and others involved in all health sectors must work together with the government to advance prudent policy and with the media to communicate to the public what we really know. After all, mass hysteria over imagined fears is its own form of madness.