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poisons on our Plates

Michele Morrone explains why Americans should be afraid of the rise of foodborne illness and the lack of industry safety nets



In October 2003, Dr. Marcus Eubanks was working at an emergency room outside of Pittsburgh. Within a few days he treated eight people with Hepatitis A—a high number of cases for a rural hospital. Fearing it was an epidemic, he notified the Pennsylvania Department of Health.

Health officials soon learned that all eight patients ate at Chi-Chi's Mexican restaurant in the Beaver County Mall in Monaca, Pennsylvania. The restaurant voluntarily closed, but it was too late to stop the outbreak.

For a few months in 2003, western Pennsylvanians lived in fear of contracting Hepatitis A. More than 600 people became ill and four people died.

Reports of food poisoning seem all too common. Salmonella-tainted peanut butter sickened 628 people; a cruise ended prematurely when passengers contracted the Norwalk virus; E. coli-tainted bagged spinach caused a massive recall.

In her new book *Poisons on our Plates: The Real Food Safety Problem in the United States* (Praeger Publishers), Ohio University researcher Michele Morrone explores the reasons why 76 million Americans suffer from food poisoning each year.

“What are you afraid of? Terrorism? Cancer? Flying in an airplane? What about bacteria? If you are like most Americans, you probably are more afraid of dying from cancer than dying from diarrhea. There are real reasons that this is the case, including the fact that cancer is more exotic than diarrhea and less familiar to us; most of us perceive diarrhea as curable and cancer incurable,” Morrone writes in the introduction of the book.







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ANATOMY OF AN EPIDEMIC

The number of annual cases of food poisoning is on the rise, reports Morrone, an associate professor of environmental health and director of environmental studies at Ohio University. The Chi Chi's incident illustrates just one cause: food imported from foreign countries with less stringent sanitation standards. The restaurant's scallions originated at a Mexican farm. The farm's bathrooms didn't have proper drainage, and the waste often flooded into the fields. After picking the scallions, employees put them on ice made from unclean water and stored them in a dirty facility.

According to the U.S. Department of Agriculture, foreign imports make up about 15 percent of all food in the U.S. supply, and the agency expects that percentage to increase. Yet there are not enough food sanitation professionals to provide thorough inspections. As threats such as bioterrorism and the avian flu increase, public health funds are spread thinner, Morrone explains.

When it comes to imports, Morrone points to China as a cause for concern. Though the American public has been fixated on toys contaminated with lead paint and tainted dog food, the researcher argues that we should be equally on alert about seafood imports.

"These imports are one of the biggest concerns—especially when it comes to shellfish," she says. "If the fish or shrimp are not being raised in sanitary water, some pathogens like bacteria and viruses infect the fish."

The United States receives about 12 percent of its seafood from China. In June 2007, the United States banned five types of farm-raised seafood from the country after discovering that farmers gave the fish illegal antibiotics, which have been linked to cancer. Farmers often raised these fish in water contaminated with raw sewage. In January 2008, China admitted it struggles to keep its water clean.

"Water quality is the top issue for Chinese aquaculture," Ding Xiaoming, the director for aquaculture in the fisheries bureau, told *The New York Times*.

Even though the Chinese government identified dirty water as a problem for its seafood farmers, the FDA warning stressed the dangers of the antibiotics—not the water. While these can cause cancer, scientists have known for hundreds of years that dirty water causes diarrhea and other stomach ailments.

But the problem with food safety isn't limited to imports; the USDA manages to check only 16 percent of meat farms and processing plants in the United States. According to an article in the *International Herald Tribune* in January 2009, the USDA has vacancies in 30 percent of its positions, which impedes its ability to carry out inspections. There are just as many examples of domestic products hosting pathogens, such as homegrown green onions that sickened 100 people and the E. coli-tainted spinach that sickened 205 and killed three. Both incidents happened in 2006.

Occurrences of foodborne illnesses also are increasing because of the industrialization of agriculture and the food supply system. One example is the E. coli-infected spinach, which grew on a sprawling 37,000 acre-farm. On the edge of the fields, feral pigs infected with the bacteria were defecating on the crops. Another vulnerability in agribusiness is egg farming, Morrone says.

Chickens in so-called factory farms live in close quarters, which are littered with feces, bugs, and dead chickens (all of which can spread pathogens). If one chicken contracts Salmonella, the whole farm could become infected. Farmers thought they could prevent the spread of these diseases by feeding their animals antibiotics, but this practice can create antibiotic-resistant super bugs.

"We can't handle food the way people a generation ago did," Morrone says. "This is not the same food supply that existed 50 years ago."

Two government agencies—the FDA and USDA—are charged with protecting the public by inspecting food. But the way the two divide up their duties can be illogical, critics say. According to the *International Herald Tribune* article, for example, the FDA inspects frozen cheese pizzas while the USDA inspects frozen pepperoni pizzas. And the FDA devotes most of its resources to regulating pharmaceuticals.

Americans should be concerned not only about the difficulties of managing and inspecting the global food system that puts dinner on our plates, Morrone notes, but the fact that once pathogens get in the system, they can spread quickly. The microscopic size of these bugs makes it easy for people to spread them without realizing it. An outbreak of the Norwalk virus occurred every month in 2007, Morrone found. One bartender with the virus sickened partygoers, even though he didn't serve food. Food poisoning causes more than 300,000 hospitalizations and 5,000 deaths a year.

Without proper intervention, the United States is vulnerable, yet officials rarely stop to think about the impact of food on security.

"I think the contribution (of *Poisons on our Plates*) was particularly important because it redefines the scope of what we mean by environment or security," says Peter Liotta, executive director with the Pell Center for International Relations and Public Policy



Photo: Dreamstime.com

at Salve Regina University, who edits the book series on politics and environment.

The Council on Foreign Relations reports that with the current level of surveillance, it would be easy for a terrorist group to infiltrate food sources. Even without a terrorist threat, the agency has stated that U.S. food sources are unsafe.

The more Americans worry about other issues, though, the less likely the government is to protect its people from tainted food sources. Frequently the government reacts to a crisis instead of being proactive.

“We need more of an emphasis on public health prevention on all levels of government,” Morrone says, “and we have unfortunately turned our attention away from non-sexy pathogens on our food.”

WHY WORRY?

For Morrone, Chinese seafood serves as a perfect example as to why she wrote *Poisons on our Plates*. Americans are more afraid of anything that might be linked to cancer and substances such as antibiotics than microbial pathogens that lurk in dirty water.

“Really my interest was not so much in food safety as much as it was trying to understand why people are afraid of one thing more than another,” she says.

Morrone’s interest in fear started when she was earning her doctoral degree at Ohio State University. For her dissertation, she examined public opinion regarding a proposed radioactive waste site. No matter how many scientists testified at public hearings that the waste site would not impact people’s health, residents tearfully admitted they did not want the site in their neighborhood. They believed radioactive waste would sicken or kill them.

She sees countless examples of this when it comes to food poisoning. People fear the unknown more than pathogens such as Hepatitis A, Salmonella, or E. coli.

“Bacteria are less exotic; people get complacent about bacteria,” she says.

Emotions trump reason in many situations, and the media feed into this, Morrone found. Few media outlets want to report about diarrhea and vomit when they can focus on Mad Cow Disease, which purportedly causes permanent brain damage. Often, the media don’t wait until all the research is in—and needlessly scare the public, she argues. Mad Cow Disease might not be the public health threat once feared.

In the book, Morrone describes Alar as a classic case of public fear overcoming facts. Beginning in 1963, apple farmers used Alar on their crops to extend the life of the fruit. Alar is also a component of rocket fuel. She recounts a *60 Minutes* episode from 1989 that changed how Americans thought about apples.

“The most potent cancer-causing agent in our food supply is a substance sprayed on apples to keep them on the trees longer and make them look better,” the announcer intoned.

Actually Alar itself wasn’t the problem. Its byproduct, UDMH, was considered the carcinogenic agent. Yet at the time, there was no evidence UDMH caused cancer. That didn’t put a dent in public opinion, however. After the *60 Minutes* report, Americans feared Alar. Even Meryl Streep became involved in the controversy, testifying before Congress about the dangers of the substance. Within a year, it was almost impossible to find any trace of Alar on apples.



Photo: Dreamstime.com

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“People listen to celebrities—they trust Streep more than they trust a scientist,” Morrone says.

Twenty years after the damning report on Alar, there is still no evidence that Alar causes cancer.

The Alar example shows how fear skews public agendas. Instead of devoting more resources to inspecting fish from China, agencies dedicate money to the “scare of the week” because of pressures from the general public and mass media, Morrone says.

“Generally speaking, I am more concerned about the microbes than the chemicals. There is really little debate about (the effects of) microbes,” she says. “The main problem in the United States is that our food safety system is not well equipped to address these causes and, until recently, the American public did not seem to care.”

That could change, however. The recent Salmonella outbreak in peanut butter is finally starting to put microbiological contaminants under the public microscope, Morrone notes.

BOOSTING FOOD SAFETY
With the number of major foodborne outbreaks increasing, the government has started examining the problem. After lawmakers called for an overhaul of the FDA, the organization launched a plan in 2007 to reduce the amount of tainted food in the United States. As part of the plan, the FDA hopes to add 130 food safety officials and extend its presence in foreign countries to ensure that food originates



at clean farms. During the first year, the FDA held meetings to flesh out the plan.

With a new strategy in place, food safety might increase, but one barrier remains. The U.S. government does not require companies to recall tainted food products. Any food recall is voluntary, says Morrone. Businesses don't have to pull infected food off the shelves, and there is no penalty imposed on companies that produce these products. The FDA and Centers for Disease Control and Prevention warn of tainted food, but infected food sits on the shelves if the company doesn't issue a recall. Because such measures are often associated with profit loss and lawsuits, many companies don't have much incentive to participate in a recall. Chi-Chi's cooperated, but the expense of the Hepatitis A outbreak contributed to the closure of the chain. Years after shutting its doors, Chi-Chi's has yet to settle all of its lawsuits.

Even with the FDA's new plan, lawmakers recently criticized the agency and considered forming a new entity. Morrone doesn't think this is the solution.

"There was a science advisory committee that examined the FDA food safety system and found that it's dangerous. (The FDA) uses management by crisis. The report was damning," Morrone says. "I don't think you scrap the whole thing. Look at where the resource needs are the greatest and fund them. Even though the food safety system is convoluted, I think with the right funding, it could be effective."



FIGHT PATHOGENS AT HOME

Every time Michele Morrone's children (now 15 and 17) ordered a hamburger in a restaurant, she would cut it open to see if it was properly cooked.

"I don't think my children ever ate a whole hamburger," she jokes.

Morrone knows that *E. coli*, *Campylobacter*, *Listeria*, and *Salmonella* lurk in undercooked ground beef. The grinding process exposes the meat to additional bacteria.

While *Poisons on our Plates* explores the problems of microbes in food, Morrone also offers suggestions for home chefs to make sure their foods are free of dangerous pathogens.

Everyone should have a thermometer and know at what temperature to cook meat.

"You should not rely on the 'looks done' type of approach," she says. "Cooking temperatures are based on science—(researchers) inoculated meat with bacteria and saw what temperature it takes to kill them."

Sometimes people contaminate their food by not properly washing their hands. After touching raw meat, it's important to wash hands with warm soap and water. Never re-use an unwashed cutting board and knives that were used on raw meat—they could harbor as many contaminants as the uncooked product.

While botulism is rare and often associated with home canning, it can still affect canned goods. Don't purchase canned goods if they are bulging or misshapen.

Be wary of bagged spinach and lettuce marked "triple washed," which suggests that there is no need to rinse the vegetables before eating. In 2006, the plastic bags provided a breeding ground for *E. coli*, and people across the nation were sickened after eating the spinach inside, Morrone says.

The spinach outbreak also highlights the paradox of having fresh produce available year-round. Because the spinach came from several different farms and was processed in numerous plants, investigators took longer to identify the cause of the contamination.

Morrone suggests that buying local might be a way to avoid some illnesses, but she stresses that it's always important to thoroughly wash fruits and vegetables, regardless of their origin.

"As a consumer you need to make sure that you make your food as safe as possible before you eat," she says. "Buying local is one tool in the prevention toolbox."