

► PRESIDENT'S MESSAGE



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Prairie Dogs and Professional Development

We have all been there. It is the “Friday at 4:30 p.m.” call that your Spidey Sense warns you, “Do not answer,” but you do anyway. A manager of a local business is on the line. Several employees called in sick that morning, and five more got sick at work. Two days ago, they ate catered-in lunch. Most had vomiting and diarrhea, and three said, “I have never been so sick.” Or your department’s epidemiologist calls just before you head out the door and tells you that the state laboratory reported four cases of *Legionella*, and they all used the same spa. Or the local fire department calls to report a hazardous materials spill affecting a creek. Or any other incident that you know will ruin your weekend plans; challenge your knowledge, skills, and abilities; and remind you how important your work is in protecting the public’s health, and why you love your career.

My first big one was approximately 2 years into my position as an environmental health specialist with the state of North Dakota. It was July 2, and I was 1 day away from a long-overdue vacation. The phone rang, and I was the only one in the office. It was the superintendent of Theodore Roosevelt National Park, which is located in the rugged, beautiful badlands of western North Dakota. The superintendent’s voice was strained, and he needed help.

A ranger patrolling hiking trails found something alarming—hundreds of dead prairie dogs. One week earlier, they were all alive and chirping. I listened attentively and asked a lot of questions. After he ruled out poisoning and other possibilities, that left me with

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a scary hypothesis: “Could this be bubonic plague?” Fortunately, I recently attended an in-person vectorborne illness training hosted by the National Environmental Health Association (NEHA) and the Centers for Disease Control and Prevention (CDC) that covered *Yersinia pestis* and plague. Adding to the concern, a popular hiking trail bisected this prairie dog town, so fleas carrying plague could possibly infect people or pets visiting from anywhere in the U.S. I recommended that the superintendent close the hiking trail, and stated I would get back to him as soon as we had a plan of action.

I immediately called my boss, who contacted the state epidemiologist laboratory director. We also called CDC’s vectorborne disease specialists in Fort Collins, Colorado, and shared what we knew and asked for their expert guidance. They thought it might be plague, even though plague had not been found in North Dakota for more than 40 years. CDC gave guidance on how to “flag for fleas,” and told me to “avoid getting bitten by fleas, but don’t use any insect

repellent.” They also said go to an emergency department immediately if I developed symptoms of plague—WAIT, you just told me WHAT?

This situation had gone from an interesting episode of *Stranger Things* to a horror movie, and I was in it. We came up with a plan. You guessed it, that plan was to send the newbie environmental health specialist to investigate a plague outbreak in a remote area of a national park alone. You know how in horror shows, you always know who is going to die? In this episode of Environmental Health Horror Stories, I was that guy.

I called my wife and said I had good news and bad news. The good news was that we were going to leave early for vacation. The bad news was that on our way, I had to make a quick stop to investigate a plague outbreak. Did I mention that she is a medical microbiologist? You can imagine she had a few questions and suggestions about safety protocols. Her concerns were heightened by the fact that we had a 9-month-old son.

Never having flagged for fleas before, I had to get creative fast. Calling on my inner MacGyver, I grabbed a fishing pole, clothespins, cloth diapers, Ziplock bags, tweezers, a Sharpie, my trusted backpack, and large garbage bags. We finished packing and threw everything in the car.

Once we got to the park, my “workplace hazards” included hiking past startled prairie rattlesnakes (I was startled, too!) and a huge bison about 50 yards off the trail, bashing his head aggressively against a stout juniper tree, and, of course, potentially plague-infested fleas. Just part of our jobs sometimes, right?

After hiking approximately 2 miles in the vividly colored badland canyons, I came to the huge, 45-acre prairie dog town. As I approached, not a single prairie dog stood tall and sounded their distinctive high-pitched intruder alert. There was a deathly quiet. I'll never erase the image from my mind—hundreds of dead, bloating prairie dogs, eyes bulging and purple marks on their skin. The odor, well, let's not go there.

I developed a sampling strategy and hoped to find some live fleas. I slowly inserted a diaper on the end of my fishing pole into a prairie dog burrow. Upon retrieving it, I immediately realized that finding live fleas would not be a problem. Using tweezers, I carefully plucked about a dozen fleas off the “diaper flag” and placed them into sample bottles. Fleas were also jumping around on the ground. I repeatedly checked my clothing for fleas. About 2 hours and hundreds of fleas later, a shadow fell over me—the sun was setting behind a large butte. Not wanting to hike around bison and rattlesnakes in the dark, I quickly packed up the gear and headed back to my patient wife and son, who were waiting at the car.

When I got to the car, I stripped off all my clothes and double-bagged everything in plastic garbage bags. There I stood—naked in a national park parking lot. My wife and I carefully searched my body for fleas. Once we were triple-sure I was flea-free, I dressed and we continued driving to Billings, Montana. Despite being exhausted, I could not sleep. My mind was racing. If even one flea escaped before I sent the samples to CDC, I could be responsible for a plague outbreak in Montana's largest city. Thankfully, that did not happen.

Bringing this adventure story to an end, CDC found *Yersinia pestis*, the plague bacteria, in the fleas. Based on our advice, Theodore Roosevelt National Park had already closed the area, posted signs, and the public's health was protected. And, despite the risks of contracting plague, being gored by a bison, or being bitten by a rattlesnake—I loved every minute of it!

My story highlights competencies we need to possess to be effective environmental health professionals:

- **The value of a science education:** Courses in microbiology, epidemiology, and ento-

mology provided the foundational knowledge to understand the disease risk and transmission to other animals, including humans, by fleas.

- **The value of professional development:** Practical knowledge from the NEHA/CDC vectorborne disease course built on my education and empowered me as an environmental health professional to take effective actions to protect public health.
- **The value of building professional relationships:** The creation of these relationships at trainings and conferences, such as the NEHA Annual Educational Conference, is invaluable. While Google and AI have a lot of answers, talking with people who have real-world field experience is next level.

This story also highlights why NEHA exists—to build, sustain, and empower you to be an effective environmental health professional. You have stories, too. Let us all tell our stories! 🌿

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Photos courtesy of the National Park Service (NPS), NPS/Nathan King, NPS/Albert Myran, NPS/E. Eddy, and NPS/Laura Thomas.