

Farm animals are hauled all over the country — so are their pathogens.

Transfer of bird flu to cattle highlights danger; Utah is among states with their own disease testing, requiring some cattle to test negative or be vaccinated for brucellosis.

By EMILY ANTHES and LINDA QIU

The bird flu virus that is spreading through American dairy cows can probably be traced back to a single spillover event. Late last year, scientists believe, the virus jumped from wild birds into cattle in the Texas panhandle. By this spring, the virus, known as H5N1, had traveled hundreds of miles or more, appearing on farms in Idaho, North Carolina and Michigan.

The virus did not traverse those distances on its own. Instead, it hitched a ride with its hosts, the cows, moving into new states as cattle were transported from the outbreak's epicenter to farms across the country.

Live animal transport is essential to industrial animal agriculture, which has become increasingly specialized. Many facilities focus on just one step in the production process — producing new young, for instance, or fattening adults for slaughter — and then send the animals on.

The exact number of chickens, cows and pigs being transported on trucks, ships, planes and trains within the United States is difficult to pinpoint because there is no universal national system for tracking their movement.

But estimates from official sources and animal advocates offer a sense of the scale. In 2022, some 21 million cattle and 62 million hogs were shipped into states for breeding, or feeding, according to the Agriculture Department; these figures do not include poultry, movement within the same state or journeys to slaughter. That same year, more than 500,000 young dairy calves, some only a few days old, were shipped from just six states, according to the Animal Welfare Institute, a nonprofit group. Some traveled more than 1,500 miles.

"The movement can contribute to long-distance transport of pathogens and make outbreaks, and the management of outbreaks, challenging," said Colleen Webb, an expert on livestock epidemiology at Colorado State University.

Many livestock pathogens, including bird flu, are zoonotic, meaning they can jump from animals into humans. Bigger, longer-lasting livestock outbreaks can increase the odds that people come into contact with infected animals or contaminated food products and create more opportunities for pathogens to evolve.

Since March, bird flu has been confirmed in 51 dairy herds in nine states, and infected at least one dairy worker. Last month, in an effort to curb the outbreak, the USDA began mandating influenza A testing for lactating cows crossing state lines.

"But that's only getting at a very small fraction of the problem," said Ann Linder, an associate director at the animal law and policy program at Harvard Law School.

The United States imposes few restrictions on farm animal transport, which poses an often overlooked threat to animal and human health, experts said. The movement of livestock presents what Linder called "a perfect mix of factors that can facilitate disease transmission."

SHIPPING FEVER

Every step in the transportation process provides opportunities for pathogens to spread.

Trucks and holding facilities may cram animals from multiple farms into small, poorly ventilated spaces. In one randomized study, researchers found that 12% of chickens slaughtered on farms harbored *Campylobacter* bacteria, a common cause of food poisoning. After being transported, the bacteria were found on 56% of the birds.

The conditions of transport can also take a physical toll. Animals may be subject to extreme heat and cold, hauled for hundreds of miles without a break and deprived of food, water and veterinary care, experts said. There is virtually no data about how many get sick or die from the journeys.

Such stressful conditions "compromise the animal's health and welfare and also weaken their immune system, which obviously increases the risk of disease transmission," said Ben Williamson of Compassion in World Farming, an animal-welfare nonprofit.

Numerous studies suggest that transportation can suppress the immune systems of cows, leaving them vulnerable to bovine respiratory disease, often known as "shipping fever."

As they travel, farm animals can also leave pathogens in their wake. In one study, scientists found that disease-causing bacteria, including some that were resistant to antibiotics, flowed off moving poultry trucks and into the cars behind them. The trucks were "just disseminating these antibiotic-resistant bacteria," said Anna Rule, an expert on biosecurity at Johns Hopkins University Bloomberg School of Public Health and an author of the study.

Contaminated transport vehicles have also been known to spread pathogens long after the infected animals have disembarked and may



BORY DOYLE The New York Times

Left ▶ A truck carrying live chickens is driven through Wildersville, Tenn., in November. The exact number of chickens, cows and pigs being transported in the United States is difficult to pinpoint.

Below ▶ Cattle are loaded onto a truck for transport from a feedlot in Hereford, Texas, in September 2020.

be playing a role in the dairy cow outbreak, officials have said.

Infected animals can then spark outbreaks at their destinations, including livestock auctions, which often attract animals too old, sick or small for the commercial food supply. Such auctions "would be a great place for H5N1 to move from cattle into swine," Linder said.

GAPS AND LOOPHOLES

The Agriculture Department has the authority to restrict the interstate movement of livestock, but in practice there are few barriers to cross-country transport. "I think the USDA, for the most part, wants to make that life-cycle journey as seamless as possible," Linder said.

Under a federal law first passed in 1873, livestock being transported for longer than 28 consecutive hours must be afforded for at least five hours for food, water and rest. But critics say the 150-year-old law is more lax than regulations in comparable countries and rarely enforced. The Animal Welfare Institute found just 12 federal investigations of potential violations in the past 15 years.

The law also exempts shipments by water or air. Compassion in World Farming has documented the use of "cowtainers" to transport calves from Hawaii to the continental United States, on boat journeys that can last five days or longer.

Livestock traveling between states must carry a certificate of veterinary inspection, issued by the state agriculture department or an approved veterinarian, declaring the animals to be healthy. But those visual inspections would not catch infected but asymptomatic animals, which has probably played a role in spreading bird flu to new dairy herds.

Some states have their own disease testing requirements. Utah, for example, requires some cattle to test negative or be vaccinated for brucellosis, a bacterial infection, while Maryland requires chickens to test negative for pullorum disease and typhoid.

But most routine disease surveillance happens at the end of the supply chain. "There are inspectors at the slaughter plants that are inspecting the carcasses as they come through for signs of disease," Webb said.

When inspectors identify sick animals, experts can conduct epidemiological investigations to determine where the animal originated. But those investigations are not always successful.

Many countries in Europe now have mandatory livestock identification and tracking systems, which log the movements of individual animals over the entirety of their lifetimes. "It's a no-brainer in the modern world, where we're so connected," said Dr. Dirk Pfeiffer, a veterinary public health researcher at City University of Hong Kong.

Although a handful of states, including Michigan, have created similar systems, there are none at the national level. A USDA spokesperson defended the American system in an email, noting that the U.S. livestock industry is much larger than that of any European nation.

A national tracking system might have allowed officials to quickly trace the paths of dairy cows infected by bird flu, identify affected farms and, perhaps, contain the outbreak, scientists said.

"The faster you have the data on where infectious animals might be, the faster you can get your controls in place," Webb said. "When you're trying to control an outbreak, it's really

a race against time."

Animal welfare advocates urge the passage of new livestock transportation regulations. One bill, proposed by Sen. Cory Booker, D-N.J., would reduce the 28-hour law to eight hours, and require more stringent record keeping. Rep. Dina Titus, D-Nev., plans to introduce another bill that strengthens enforcement and requires adherence to international transport standards.

"Consumers and Americans should care about the way that farmed animals are transported because they're sentient beings, capable of suffering," said Dena Jones of the Animal Welfare Institute. "But also because their well-being impacts the safety of our food and our health."

This article originally appeared in *The New York Times*.



SAY HELLO TO For You Banking.

Customized banking designed specifically **For You.**

Whether you're looking to open a new checking account, save for the future, take out a loan or plan for tomorrow, we're ready to help with banking that's meant **For You.**

Zions Bank is For You

ZION'S BANK