

MONOGRAM

DECEMBER 2024

H5N1 UPDATE

Avian influenza has been detected in the Town of Mammoth Lakes sewage system on routine virus surveillance testing since November 13. Avian influenza (influenza H5N1) infections in California dairy herds and commercial poultry flocks are currently widespread and numerous localities have recently found H5N1 in wastewater.

Elsewhere in California, a preschool-aged child in Alameda was recently diagnosed with a mild case of avian influenza, the first pediatric case and only the second U.S. case without exposure to sick dairy cows or poultry.

Most recently, influenza H5N1 flu has been detected a couple of times in raw milk sampled in Santa Clara County retail stores.

The Mammoth wastewater detection is the second time influenza H5N1 has been detected in Mono County. The first was when two mountain lions, a mother and female offspring, were found dead near Mono Lake during the winter of 2022-23, apparently killed by the virus.

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WHAT DOES THIS NEW WASTEWATER DETECTION MEAN?

We are not sure where the avian influenza detected in Mammoth's wastewater is coming from. It does not appear to be a sign of human H5N1 infections, since we are seeing very little human influenza now. State experts advise that we are most likely detecting virus in milk that has been dumped down the drain.

Pasteurization of milk kills germs and makes it safe to drink even if it has been contaminated with avian influenza H5N1. The tests used in wastewater testing do not distinguish between living and dead virus. Many dairy herds in California and other states are affected by H5N1, and infected cows have high levels of virus in their milk, so it's no surprise that virus is detectable in milk.

Pasteurized milk remains safe to drink, whereas consuming raw milk may be riskier at this time. Raw milk can carry a number of pathogens and human disease from raw milk happens occasionally. The H5N1 detections in raw milk have resulted in a product recall by Raw Farm, LLC. We don't know whether ingestion of H5N1 is dangerous in people. It appears to be lethal in barn cats that consume contaminated unpasteurized milk.

While it is difficult to rule out the possibility that people infected with avian influenza are the source of the virus in the town's wastewater, that does not appear to be the case. Just over 30 people in California have been infected with H5N1 this year and all but one have worked with sick cows. H5N1 has not been found to spread between people. Mono County seems an unlikely place for H5N1 human infections to turn up right now since there are no commercial dairy or poultry operations. Nonetheless, Mammoth Hospital is asking healthcare workers to keep avian influenza in mind as a possibility when they see someone with respiratory illness or conjunctivitis (pink eye). And for the time being, any positive flu tests at Mammoth Hospital will be sent to referral labs for virus sub-typing, to rule out H5N1.

It is also theoretically possible that wild birds carrying H5N1 are responsible for the virus being in the wastewater, but this seems unlikely as the town's sewage system is largely closed to the environment. The Town of Mammoth Lakes water supply is drawn in part from Lake Mary, but the lake is currently frozen and not attracting waterfowl.

BIGGER PICTURE

The H5N1 situation in U.S. dairy cows, as well as in poultry operations, is concerning to health experts who monitor both animal and human diseases but does not pose an immediate risk to people outside affected work sectors. In cows, the virus has only been seen in dairy cows (the kind that produce milk), and not in beef cattle (the kind raised for meat like most of those in our area).

Influenza viruses mutate easily and the ongoing worry for human health is that if H5N1 keeps spreading among animals it will eventually develop the ability to more easily infect people and spread from person to person. That could produce a potentially dangerous epidemic because people have less immunity to such new flu viruses than we do to seasonal human flu viruses.

We are not sure how dangerous H5N1 could turn out to be in humans if it spreads among us. Everyone known to be infected by this avian flu strain in the United States (50+ farm workers, as well as two persons without known farm animal or wild bird contact) has had mild illness, but in other countries many H5N1 cases have been severe.

A lot of effort is going into ensuring that if H5N1 develops into a real threat to public health that America is better prepared than we were for COVID-19. Numerous public health and other labs in California can already test for H5N1, masks, and respirators are widely available, a vaccine has been developed and is being produced in moderate just-in-case quantities, and existing anti-influenza medications seem to be effective against H5N1.

