Joe Lombardo
Governor

Richard Whitley, MS
Director

DEPARTMENT OF
HEALTH AND HUMAN SERVICES

NEVADA DIVISION of PUBLIC
and BEHAVIORAL HEALTH

Cody Phinney, MPH
Administrator

Ihsan Azzam,
Ph.D., M.D.
Chief Medical Officer

Date: May 17, 2024

To: Nevada State Board of Health

Through: Richard Whitley, MS, Director DHHS
Cody Phinney, MPH, Administrator, DPBH

From: Ihsan Azzam, PhD, MD, MPH, Chief Medical Officer

Re: Report to the Board of Health for June 07, 2024

Introduction

According to the United States Department of Agriculture (USDA), since late March 2024, the Highly Pathogenic Avian Influenza (HPAI) with the H5N1 Influenza A Virus has been found in 42 dairy cow herds across nine states. Inadequate tracking of this concerning infection leaves dairy workers at risk. Farmworkers have been exposed to milk infected with this virus. But there has been virtually no testing on farms, and little is known about the extent of exposure among humans. So far one single mild human case of H5N1 influenza viral infection among dairy farm workers in Texas was reported to the Centers for Disease Control and Prevention CDC.

It seems that this ongoing H5N1 influenza outbreak at the nation's dairy farms began months earlier and is probably much more widespread than previously thought. However, CDC continues to emphasize that the virus poses little risk to humans.

So far, the outbreak has affected large dairies that increasingly dominate the industry and often rely on migrant workers. It's unclear at this time if this virus is going to evolve to become a pandemic strain, but certainly large numbers of farmworkers are at risk of being exposed to infected herds with a limited ability to be tested or vaccinated against this virus. Many of the dairy farmworkers are migrants who may lack access to medical providers, and surveillance of such workers is not nearly as accurate as it's observed among other population groups.

Wastewater was identified as a new approach to help early detect possible increases in influenza and other pathogenic biological and chemical agents. It can provide additional data that isn't captured in other surveillance systems. Wastewater testing has revealed the presence of the H5N1 virus in nine Texas cities, with virus levels comparable to those observed during seasonal influenza.

Public health professionals are now anxiously watching for any sign that H5N1 virus, could cause another pandemic so soon after the last one. COVID-19 was likely transmitted from animals to humans, and the simmering concerns over avian influenza should leave no doubt that the health of humans and animals are closely interconnected.

For many years, public health experts emphasized the importance of the *One Health Philosophy* which regards the health of humans, the environment, and animals as one that requires a comprehensive integrated approach - as the health of one species affects the health of all others. However, the slow implementation of livestock surveillance for avian influenza is just a recent example of that struggle to implement the one integrated health approach.

Update on The Highly Pathogenic Avian Influenza (HPAI) A H5N1 among Dairy Farms in the U.S.

Sporadic human infections with HPAI A H5N1 Virus, with a wide spectrum of clinical severity and a cumulative case fatality exceeding 50%, have been reported in 23 countries over the past 20 years.

HPAI with Influenza A Virus H5N1 clade 2.3.4.4b have been widely spreading again among wild birds worldwide since 2020–2021, resulting in outbreaks in poultry and other animals. Recently, HPAI with Influenza A H5N1 clade 2.3.4.4b viruses were identified in dairy cows, and in unpasteurized milk samples, in multiple U.S. states, and in late March 2024 an adult dairy farm worker had onset of redness and discomfort in the right eye. Subconjunctival hemorrhage and thin, serous drainage were noted in the right eye. Vital signs were unremarkable, with normal respiratory effort and an oxygen saturation of 97% while the patient was breathing ambient air. Auscultation revealed clear lungs, and there was no history of fever, respiratory symptoms, changes in vision, or other symptoms.

The worker reported no contact with sick or dead wild birds, poultry, or other animals but he reported direct and close exposure to dairy cows that appeared to be sick; showing signs of Influenza A H5N1 viral infection (e.g., decreased milk production, reduced appetite, lethargy, fever, and dehydration). The worker reported wearing gloves when working with cows but did not use any respiratory or eye protection.

Conjunctival and nasopharyngeal swab specimens were obtained from the right eye for influenza testing. The results of real-time reverse-transcription–polymerase-chain-reaction (RT-PCR) testing were presumptive for influenza A and A(H5) virus in both specimens. On the basis of a presumptive A(H5) result, home isolation was recommended, and oral oseltamivir (75 mg twice daily for 5 days) was provided for treatment of the worker and for postexposure prophylaxis for the worker's household contacts (at the same dose). The next day, the worker reported no symptoms except discomfort in both eyes; reevaluation revealed subconjunctival hemorrhage in both eyes, with no visual impairment. Over the subsequent days, the worker reported resolution of conjunctivitis without respiratory symptoms, and household contacts remained well.

Viral sequences from cattle and from the farm worker maintained primarily avian genetic characteristics and lacked changes in the hemagglutinin gene that would affect receptor-binding specificity and transmission risk to humans. However, the virus identified in the worker's specimen had a change (PB2 E627K) that has been associated with viral adaptation to mammalian hosts which was previously detected in humans and other mammals infected with the HPAI Influenza A Virus H5N1 and other avian influenza A virus subtypes, including A(H7N9) and A(H9N2).

No genetic markers associated with reduced susceptibility to influenza antiviral drugs approved by the Food and Drug Administration were identified, and the hemagglutinin of the virus was found to be closely related to two existing clade 2.3.4.4b A(H5N1) candidate vaccine viruses.

Because influenza A H5N1 viruses have pandemic potential, these candidate vaccine viruses can be made available to manufacturers and could be used to produce vaccine if needed.

Enhanced emergency rooms, hospitals and sentinel surveillance efforts didn't detect so far, any additional cases of highly pathogenic avian influenza among humans in the U.S. While this significant viral presence can be concerning, no additional human cases have been reported.

The critical indicators of associated epidemic influenza emergence may include

- Report by a hospital of abrupt or overwhelming emergency department or inpatient admissions for influenza-like illness.
- Report by a hospital of healthcare workers with influenza-like illness that is considered unusual or unexplained by residual seasonal influenza activity.
- Report of sudden multi-sector workforce absenteeism due to influenza-like illness.

So far very little is known about how the virus is evolving and how it is spreading among cows. The US Food and Drug Administration (FDA) and the Department of Agriculture (Ag) are regularly testing milk and ground beef for the virus. The Ag. Department regulates large commercial farms and can mandate testing of animals but not of farmworkers.

At this point in the influenza season, most states including Nevada have low seasonal influenza activity. The DPBH is closely collaborating with the FDA, the Nevada Department of Agriculture, state veterinary practitioners; rural clinics and hospitals and trusted community organizations to educate farmworkers on the importance of using protective gear (e.g., goggles, face shields and gloves) to prevent infections. The DPBH will be providing proper personal protective equipment (PPE) to reduce exposure risk among farm workers. However, despite the risks to their health, farmworkers are not required so far to wear protective equipment.

Measles National Outbreak

Recently the Centers for Disease Control and Prevention (CDC) released a Health Advisory to call the attention of the state and local public health authorities and medical healthcare providers to an increase in measles incidence in the United States and abroad.

Measles is a highly contagious viral illness and can cause severe health complications, including pneumonia, encephalitis, and death, especially in unvaccinated populations. Measles typically begins with a prodrome of fever, cough, coryza and conjunctivitis, lasting 2 to 4 days before rash onset. The incubation period for measles from exposure to fever is usually about 10 days, with a range of 7–12 days, while rash onset is typically visible around 14 days after initial exposure with a range of 7–21 days. The virus is transmitted through direct contact with infectious droplets and contaminated surfaces or by airborne spread when an infectious person breathes, coughs or sneezes, and can remain infectious in the air and on surfaces for up to two hours. Individuals infected with measles are contagious from four days before the rash starts through four days afterward.

As measles activity in the United States continues to increase, the DPBH issued several technical bulletins highlighting the increased of measles in United States and providing recommendations for healthcare providers to consider measles in their differential diagnosis especially among the unvaccinated or under-vaccinated individuals of all ages with a febrile rash, especially those who have a recent exposure or travel.

To prevent the spread of measles, it is critical that health care providers promptly recognize, isolate and test patients who might have measles. Additionally, health care providers must report suspected and confirmed cases of measles to public health authorities within 24 hours.

Measles is almost entirely preventable through vaccination. Mumps, Measles and Rubella (MMR) Vaccines are safe and highly effective, with two doses being 97% effective against measles (one dose is 93% effective).

In the United States from Jan. 1 to April 18, 2024, there have been 125 cases of measles in 17 states. 83% of these cases were not vaccinated or had unknown vaccination status. So far no cases of measles were detected in Nevada this year.

Opportunities for Preventing Congenital Syphilis.

Congenital syphilis has more than tripled in recent years. Over ten times as many babies were born with syphilis in 2022 than in 2012. Congenital syphilis is preventable with timely testing and treatment before or early during pregnancy. Syphilis during pregnancy has dramatically increased in Nevada in recent years. When left undetected, undiagnosed, and untreated, syphilis can lead to serious illness for pregnant people and their babies. Effective interventions will require innovative, multidisciplinary partnerships.

Missed opportunities persist for timely and appropriate treatment of syphilis during pregnancy. Less than two-thirds of people with syphilis in Nevada received adequate or timely treatment. People without proper prenatal care (at least one visit more than 30 days before the end of pregnancy) or without any type of prenatal care are less likely to be timely detected and adequately treated. Nevertheless, even those with timely prenatal care (about one third of all congenital syphilis cases) were still inadequately treated.

People with complicated life or behavioral experiences, such as those with history of substance use/miss use or being unhoused, were twice as likely to receive inadequate or no treatment. Such concerning findings reveal unique insights for the need to develop more effective timely interventions to protect pregnant people and their infants from syphilis.

In addition to improving access to prenatal care, we are implementing approaches to improve syphilis care in settings outside of traditional prenatal care, including emergency rooms, substance use treatment facilities, Nevada Department of Corrections, jails/prisons, and shelters serving unhoused individuals. Every healthcare encounter during pregnancy provides the opportunity to improve outcomes for pregnant people and babies by ensuring prompt syphilis screening, diagnosis, and timely treatment.

National Drug Shortages

Drug shortages have reached record levels, hitting a new national shortage peak of 323 medicines for which demands have exceeded supply during the first three months of 2024. That tops the record of 320 active shortages in 2014.

The current shortages extend broadly beyond the widespread used injectable weight loss drugs, to include life-saving cardiovascular medicines and chemotherapy preparations for oncological treatment. Numerous essential antibiotics including penicillin which is extremely needed to treat reemerging serious infections such as syphilis and to prevent congenital syphilis are in short supplies. The DPBH issued several technical bulletins to reserve penicillin for pregnant people diagnosed with syphilis. Additionally, hospitals were running out of erythromycin ointment supplies required to prevent gonococcal eye infections among newborn babies. The DPBH closely coordinated with healthcare providers and neonatologists to explore alternative approaches to prevent newborn gonococcal eye infections.

Some of the most worrisome shortages involve the generic sterile injectable medications, including cancer chemotherapy drugs and emergency medications stored in hospital crash carts and procedural areas. Ongoing national shortages of therapies for attention-deficit/hyperactivity disorders also remain a serious challenge for clinicians and patients.

In some extreme cases, people searching for scarce medications like the diabetes drug Ozempic, and its weight loss counterpart Wegovy turned to substitutes, such as compounded versions, that can result in more side effects. This situation led the FDA to issue a warning for patients to avoid compounded versions and to be alert that some drugs may be marketed as having the same active ingredient when they don't and may had not been shown to be safe or effective.

The FDA continue to maintain an updated shortage list and recently added new and popular weight loss injectable drugs such as Zepbound and the version of tirzepatide used for diabetes which is called Mounjaro. This shortage comes just months after Zepbound was approved by the FDA, and the agency reports "limited availability" is likely to persist through at least June this year.