



On May 22nd, 2024, a human case of **H5N1** avian influenza A was reported in the state of Michigan in a farm worker who had a regular exposure to infected dairy cows according to the US Centers for Disease Control and Prevention (CDC). Along with the earlier case in Texas, this was the second human case of A(H5N1) detected this year in the United States, and the third bird flu case ever reported in a person in the country. In Canada, only one human case of A(H5N1) has been ever reported, which was in 2014. Cumulatively, around 900 human cases of A(H5N1) have been detected worldwide since it was first detected in geese in China nearly three decades ago.

Influenza A viruses of various subtypes have a large reservoir in wild waterfowl. Avian influenza in particular, or bird flu, regularly transmits among wild water birds and domestic poultry, and is primarily a disease of birds. The current circulating subtype H5N1 is fatal for chickens in up to 90% of cases. In the past few years however, there has been a rapid spread of H5N1 in mammals too, which was relatively uncommon before. Thousands of sea lions died from avian influenza in South America in just last year alone. The most likely route of infection in these marine mammals may be through foraging on infected birds. In very rare cases, H5N1 can also **spread to humans** from close, prolonged and unprotected contact with a sick animal. Risk to humans was mainly from contact with infected birds or contaminated surfaces. And now it includes cows too.

The current two cases detected in dairy farm workers in the US are the first known instances of presumed **cow-to-human transmission** of an avian influenza A virus. Both cases only involved an eye infection. It's speculated that splashing of contaminated milk in the eye or touching the eyes with unclean hands may be how the farmers got infected. Interestingly, while the eye swab for the second human case tested positive for the virus, the NP swab tested negative. The avian-specific receptors are primarily located in the lower respiratory tract of humans, and can cause acute respiratory infections that can be fatal in 50 to 60% of cases. However, to date, the A(H5N1) has not acquired the ability to easily bind to the virus receptors that are most prevalent in the upper respiratory tract, or to transmit

among people. These avian-specific receptors are also widely distributed in the mammary glands or udder of cows, resulting in the presence of live virus particles in contaminated milk produced from the infected dairy cows that are part of the current multi-state outbreaks in United States.

No known human-to-human transmission of A(H5N1) has occurred yet and there are no signs that the virus has the ability to do so. But the rapid evolution of H5N1 in new hosts is alarming. Influenza viruses are known for their ability to constantly change and the more it spreads, the higher the probability for it to mutate. As of now, the risk for the general population remains low and higher for individuals working closely with at-risk animals. There is no risk of eating eggs, poultry, or meat if it is properly cooked as the heat will easily destroy any live virus. Pasteurization of milk and dairy products also effectively inactivates the virus. Other recommended precautionary measures include:

- Avoid consuming unpasteurized milk and dairy products. Health claims made about raw milk are not evidence-based, and do not outweigh the potential risks as it can harbour multiple other pathogens including *Salmonella*, *Listeria*, and *E. coli* (looking at you Gwyneth Paltrow).
- Avoid direct contact with wild birds, and do not touch dead wild or domestic bird.

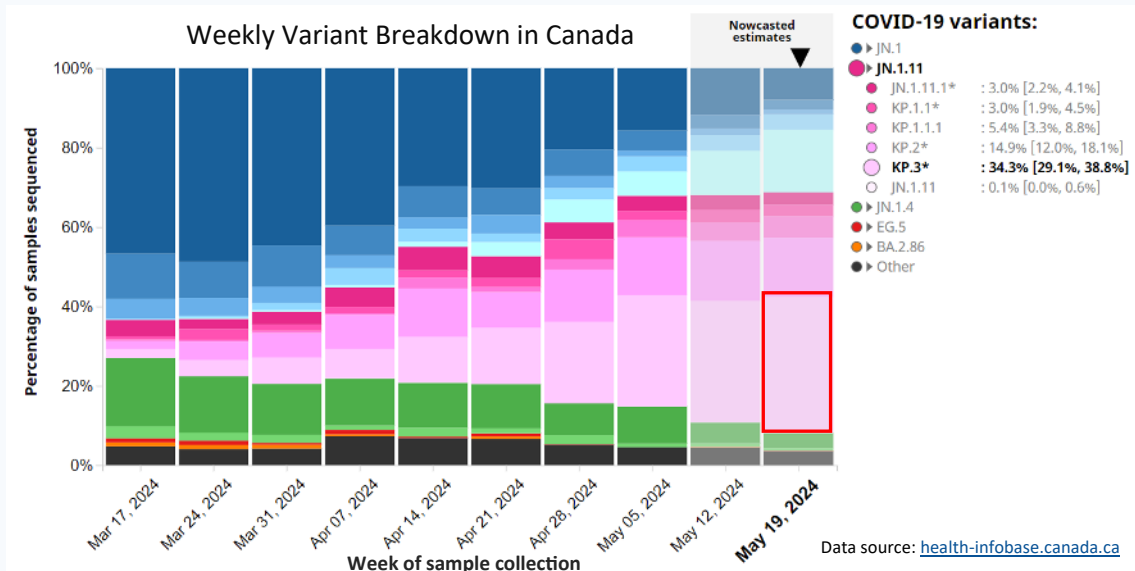
Sources: www.cdc.gov¹ | www.cdc.gov² | www.canada.ca | www.scienceupfirst.com | www.cbc.ca | www.cdc.gov³ | www.cdc.gov⁴ | www.osha.gov | www.cidrap.umn.edu | [Travel Medicine and Infectious Disease 59 \(2024\) # 102712](https://doi.org/10.1093/trstmj/taad012)

THE NEW 'FLiRT' COVID-19 SUBVARIANT AND WHAT WE KNOW SO FAR

You may have noticed some unsettling IPAC news in the past few weeks that was concerning, if not downright disturbing. The first official portrait of King Charles III was unveiled to the public at the Buckingham Palace, which contrary to the IPAC best practices, seems to be bathed in blood. Also, there are a bunch of *new* COVID-19 subvariants currently circulating around the globe. One of them, known as **KP.3**, has already emerged as the dominant variant circulating in Canada, closely followed by KP.2. An offshoot of the perpetually shooting Omicron variant, KP.3, along with KP.2 and KP.1, make up a family of subvariants labelled as the **FLiRT** variants. The name isn't randomly taken from social media as it may first appear, but is based on the spike protein mutations and amino acid changes observed in these new subvariants. The amino acid phenylalanine, abbreviated as F, replaces leucine (L), while arginine (R) replaces threonine (T). Throw in a vowel and you get FLiRT! Minds mildly blown.

The FLiRT variants are all descendants of the JN.1 subvariant that was dominant in Canada for the past several months, and continues to evolve. We do not know enough yet whether these new crop of subvariants are more immune evasive and/or more transmissible. Could these new subvariants cause a surge in COVID-19 cases this summer? It's certainly a possibility. The numbers for hospitalizations and death due to COVID-19 are at the lowest compared to the previous years. There is strong immunity present on a population level from prior vaccination and/or infections. However, the greatest impact of a potential surge would be on our susceptible populations that include people with comorbidities or

are immunocompromised, seniors, and residents in congregate living settings. The safest way our vulnerable population can increase their protection is by getting the recommended spring COVID-19 monovalent vaccine dose with an interval of 6 months from their last vaccine dose or infection. A shorter interval of at least 3 months could be used if advised by the resident’s physician.



Sources: health-infobase.canada.ca | [globalnews.ca](https://www.globalnews.ca) | www.cnn.com | publichealth.jhu.edu | www.publichealthontario.ca

UPDATED PHO POSTERS FOR HAND HYGIENE, PPE DONNING & DOFFING

Public Health Ontario (PHO) recently updated their posters on hand hygiene with soap and water and ABHR, and correct sequence for PPE donning and doffing that demonstrate the proper steps when performing these tasks. The posters can be displayed in multiple areas in your setting, especially at the entrance and outside of resident rooms when on Additional Precautions. You can access the PDFs for all the posters by clicking on any of thumbnails.

