



# Know These Two Bad Actors

An update on virulent Newcastle  
Disease and Low Pathogenic  
Avian Influenza

By Maurice Pitesky, DVM, MPVM, Dipl., ACVPM

**O**ver the last calendar year, the state of California has had outbreaks of virulent Newcastle Disease (vND) in backyard chickens and Low Pathogenic Avian Influenza (LPAI) in commercial poultry. That doesn't sound like much of a headline, but LPAI and vND are a big deal in the world of poultry infectious diseases.

This is because:

- there is no cure (apple cider vinegar doesn't work)
- they are highly infectious
- they can result in the death of your flock.

For those reasons, even if you don't live in or near California, this article is intended to tell you what you need to do to protect your flock from these devastating diseases.





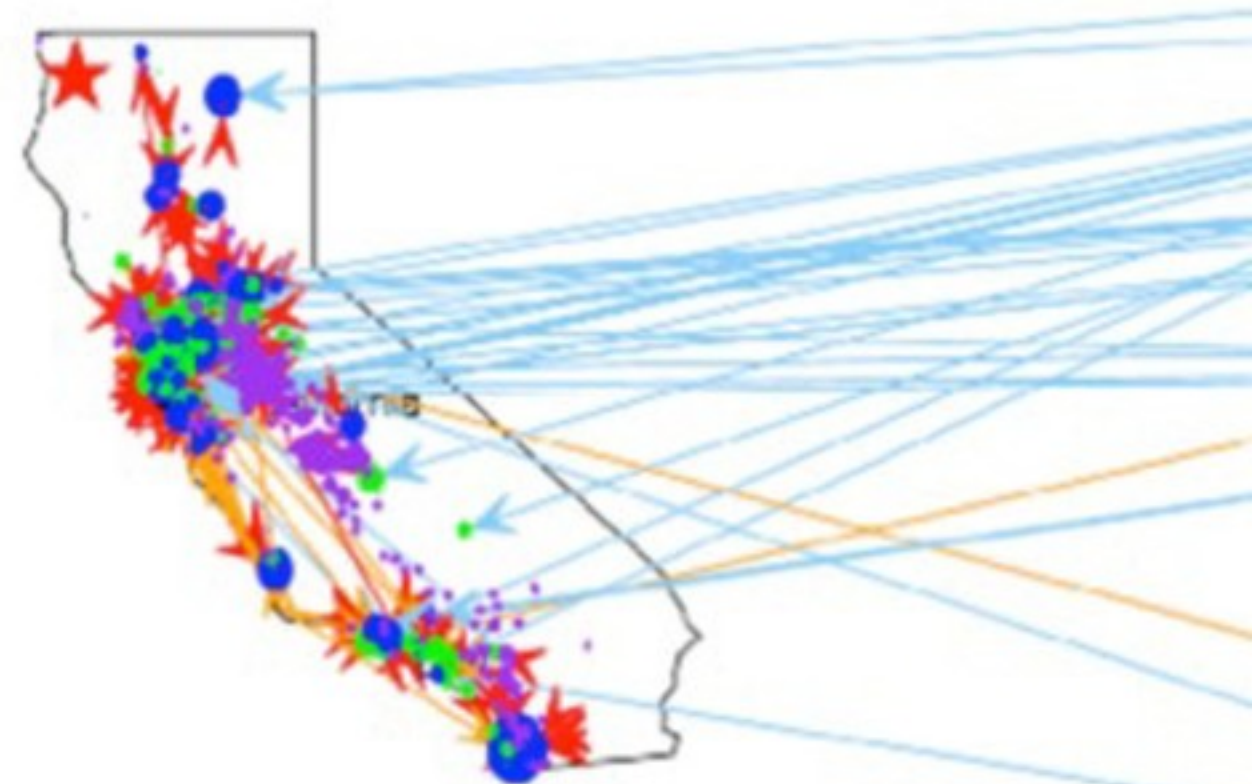


### The current LPAI outbreak

In the fall of 2018, up to five commercial farms in the central valley of California were infected with the low pathogenic H7N3 strain of avian influenza. The H5 and H7 strains are particularly concerning since they are capable of mutating into highly pathogenic strains. To prevent this from happening, the affected birds were euthanized with the goal of preventing the further spread of avian influenza.

***It is important to understand that viruses can only replicate in living cells.***

From a practical perspective, then, this means that one of the most effective ways to stop an outbreak of an infectious disease in animals is to euthanize the affected animals. It is important to note that this is rarely done, however. But for diseases like avian influenza (AI) and vND, it is often necessary in order to prevent the further spread of the disease.



**Figure 1.** Inter- and intra-state movement patterns of backyard poultry (Cadena and Pitesky, 2018). Lines represent movement of chickens. Due to the ease of movement it is important to protect your flock from other flocks/birds with unknown infectious disease status. Purchasing birds from National Poultry Improvement Program (NPIP) certified facilities is an essential first step toward protecting your flock. Make sure to ask your hatchery or feedstore if the chicks you are purchasing are NPIP certified.



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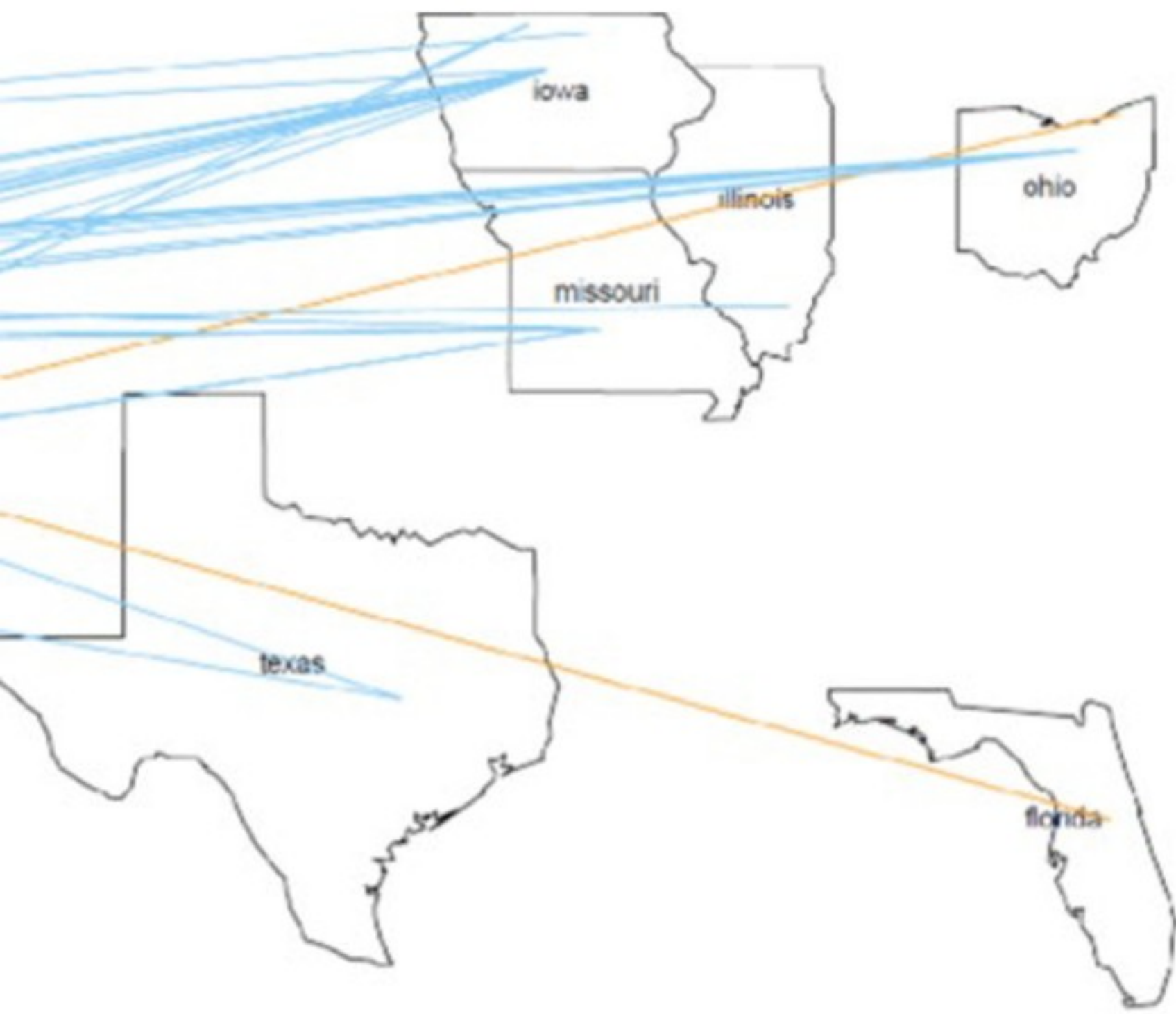


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In addition, to prevent the further spread of this strain of AI in California, a 10-kilometer “protection zone” was established around each of the infected farms. Within this zone, enhanced surveillance is carried out in order to make sure those potentially higher risk flocks are healthy and to prevent the possible spread of avian influenza.

It’s important to recognize, as an owner of poultry, that there is risk from other flocks in your neighborhood in addition to other contacts you may have, based upon your social connections (Figure 1). Remember to practice good biosecurity in order to protect your flock.

While the source of this California infection has yet to be determined, it is noteworthy that Stanislaus County (the location of the 2018 outbreak) was also the affected country during the highly pathogenic H5N8 avian influenza case in January 2015. As you may

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know, waterfowl are the primary reservoir of avian influenza and the central valley of California—this is a common wintering ground for waterfowl.

### The vND outbreak

Virulent Newcastle Disease (vND) is a second highly infectious and deadly poultry virus that is affecting backyard poultry in Southern California. Interestingly, the virus is affecting backyard poultry in largely the same urban geographical area that was affected during the previous outbreak of vND in 2002.

The complexity of dealing with this outbreak—as opposed to the avian influenza outbreak described above—reflects the challenges in dealing with a highly infectious disease in backyard poultry in highly urban areas.

Once vND is introduced into domestic avian populations, subsequent spread is normally caused by domestic bird-to-bird contact or through contact with contaminated people, feed or equipment. Just the simple task of identifying where other birds are



in close proximity to an infected bird (i.e. surveillance in the “protection zone”) requires proper biosecurity, timely door-to-door visits that require excellent inter-personnel skills, language skills, and the building of trust in order to convey the severity of the situation.

Virulent Newcastle disease (VND), formerly known as Exotic Newcastle Disease, is a serious and highly contagious viral disease that can affect poultry and other birds. It is important to note that in very rare cases, humans that have exposure to infected birds with vND may get eye inflammation or may have mild fever-like symptoms. These clinical signs generally resolve without treatment. However, medical care should be sought if symptoms persist. Infection is easily prevented by using standard personal protective equipment. In addition, virulent vND is not a food safety concern (i.e. properly cooked poultry eggs and meat are safe to eat).

In affected birds, the virus is found in respiratory discharges and feces and may cause high rates of sickness and death in susceptible birds. Among avian species, chickens and some parrots including Amazon parrots are thought to be the most susceptible and the most capable of shedding infectious virus; ducks and geese are the least susceptible. It is also important to note that some birds may not show any symptoms at all and may still be able to spread the disease.

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There is no effective cure for virulent Newcastle Disease. Like AI, the virus can only replicate in living cells. Hence, the most effective way to eradicate the disease is to euthanize affected birds; otherwise, the disease will continue to spread and kill additional flocks.

**What does this mean for you?**

As mentioned earlier, even if you don't have poultry in California, it is important to understand the potential for risk of disease transmission. As an example, Figure 1 shows movements of backyard poultry both within the state of California and between different states.

***Movement of infected poultry is one of the primary ways that infected bird diseases can be spread.***

In summary, as we prepare for the possibility of new outbreaks of AI and vND in North America, it is essential that all poultry owners to focus on reducing the risk of infectious disease transmission to their flock. Practicing good biosecurity is the best way to reduce risk and help ensure your flock of poultry remain healthy and productive. 🐔

**About the author**

*Maurice Pitesky* is a faculty member at University of California Cooperative Extension (UCCE) with an appointment in poultry health and food safety epidemiology. Pitesky earned his BS in biology from UCLA and his DVM and MPVM from UC Davis. Pitesky is also boarded in preventative veterinary medicine (DACVPM).



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