STANDARD DEVIATIONS: Influenza for Dessert

Greetings,

How was Thanksgiving? Finish that last piece of pie? Convince your Uncle about the elections? Checked the Black Friday/Cyber Monday deals? Watch some Football, or did you get the kids out and play? Are the leaves still there? Did you survive?

Now that you are back in the lab and if the lab coat still fits you may be looking at stool cultures from the weekend food poisoning, or at CK and troponin values from the cardiac cases, or basic chemistries from automobile accident patients, because it's the most dangerous holiday in America.

Speakin' of….let's talk turkey (or birds, in general)

Jennie-O Turkey Store Sales, LLC has recalled 91,388 pounds of raw ground turkey products after the USDA found that a sample of the products tested positive for a salmonella *reading* matching the outbreak strain.

The samples were from a Sept. 11, 2018 production, and, according to the USDA, the rest of the products shipped nationwide.

The CDC first announced the outbreak linked to raw turkey products in July, but more people have gotten sick, bringing the total to at least 164 in 35 states. One person in California has died, and 63 people have been hospitalized.

But this is also the beginning of Flu season. From October through February, influenza becomes a disease of concern in the Northern Hemisphere. The CDC estimates that influenza was associated with 48.8 million illnesses, 22.7 million medical visits, 959,000 hospitalizations, and **79,400 deaths during the 2017–2018 influenza season**. This burden was higher than any season since the 2009 pandemic and serves as a reminder of how severe seasonal influenza can be. (www.cdc.gov/flu/about/burden/estimates.htm).

Influenza A(H3N2) dominated the scene through February and Influenza B viruses were more common starting in March.

Influenza A is an avian virus. Birds are the reservoir for this virus where antigenic shift and drift conspire to evolve new pathogenic varieties. Aquatic ducks and geese tend to be source of new emergent strains of influenza A but the disease is often seen in commercial poultry, including turkey. That makes turkey (and chickens, and geese, and ducks) even more dangerous than an uncomfortable full stomach.

In the clinical laboratory we are able to identify influenza by type (A, B, or C typically) but not by virulence. And it requires molecular genetic research to characterize the changes in the antigenic properties of the HA and NA proteins. That's why we (UPHL and CDC) want those samples you're your

hospitalized patients. The information guides the understanding of the current season and helps development of future vaccine. Epidemiological studies, case reporting and molecular studies are examples of tools we use for determining the emergence of new pathogenic influenzas; they permit a *retrospective* understanding.

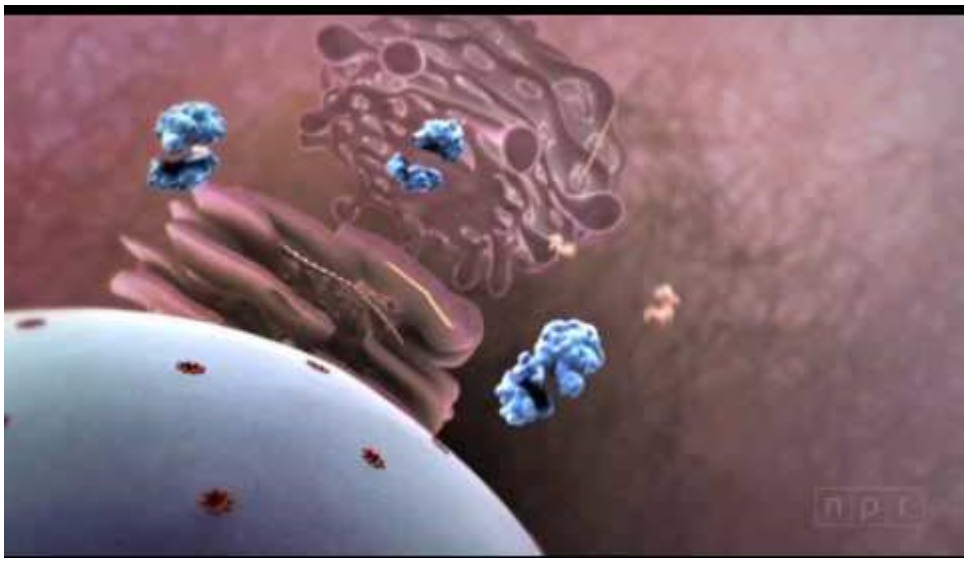
Our patient sample testing deals with unknown risk. We don't really know what we are seeing in the lab in terms of our real-time risk. Virulence and ease of transmission with respiratory virus are risk factors easily and too often underestimated.

This is why every influenza should be treated with caution and with a mindset toward biosafety. Safe laboratory practices like biosafety cabinet use, aerosol production safeguards, and stringent PPE usage are fundamental practices to protect lab workers. Adherence to biosafety principles and practices is essential to laboratory safety when flu season is upon us.

As the season ramps up the State laboratory encourages the sentinel clinical labs to reassess their testing strategies and mitigation steps in handling potentially infectious samples. Are safety cabinets used? Are they accessible, inspected and certified? *{If your lab is not using a biosafety cabinet for flu testing, maybe think about space in the lab that is isolated from traffic and changes in air flow.}* Are we using the correct PPE correctly? Do techs wear N95 or face shields? Do glove changing and hand washing receive the consideration they deserve? Are we promoting safety and risk awareness among staff? A healthy lab is something to really be thankful for!

Have a great week and be safe,

Bryan



p.s. Here is a quick, simple explanation of the molecular goings on.

p.p.s. Here is another clip that discusses antigenic shift and drift. Enjoy.