

Adaptive potential of zoonotic avian influenza H7N9 virus to ducks

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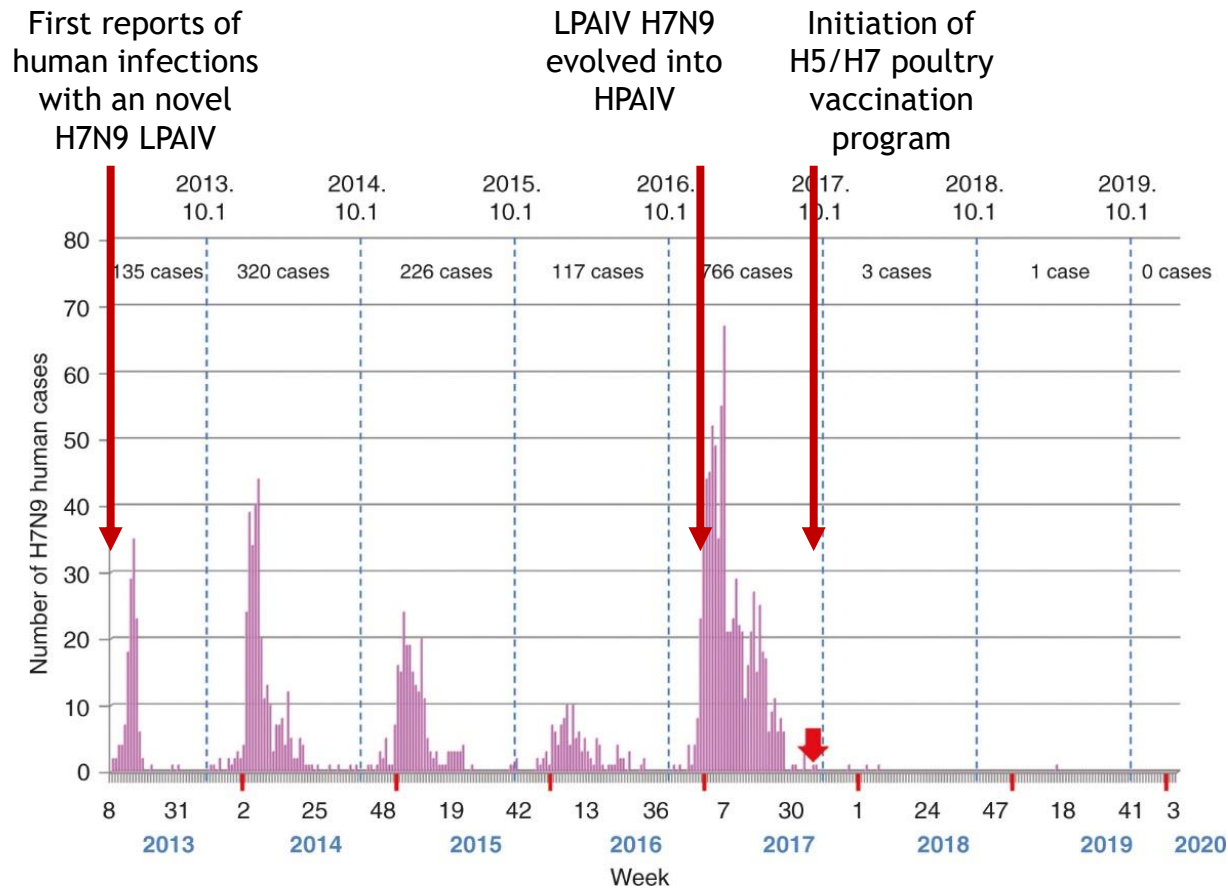
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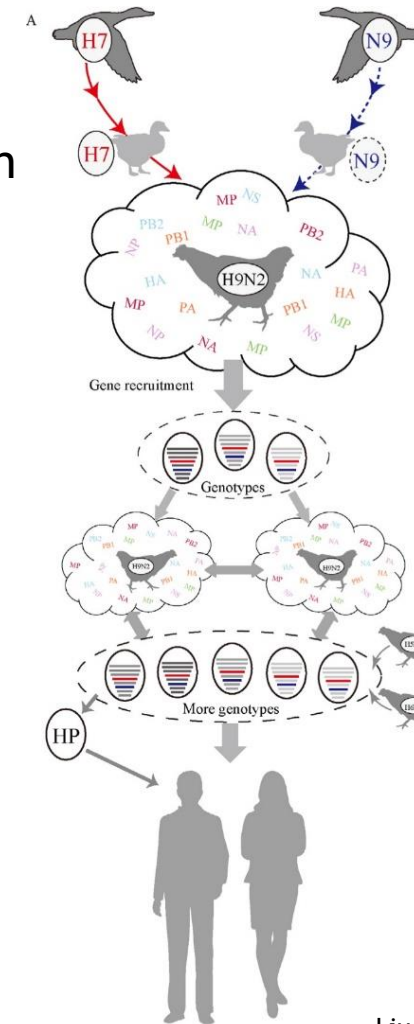
The emergence of zoonotic H7N9 in **China** in 2013

Human infections with H7N9 viruses



Li & Chen et al., 2021, modified.

Origin and evolution of H7N9 viruses



- 4 years after first isolation LPAIV evolved into HPAIV
- Extensive co-circulation of both pathotypes mainly in galliform poultry
- Emergence of numerous genotypes and H7Nx subtypes
- Confirmed reassortment events with Eurasian wild bird gene pool

Liu et al., 2021



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Characterization of zoonotic H7N9, potential adaptation to ducks?

Spillover and adaptation of either LP or HP H7N9 from galliform to anseriform poultry **would increase risks of a further spillover** into migratory waterfowl.

Presence of zoonotic H7N9 in migratory waterfowl would justify severe concerns about a possible transcontinental spread of these highly zoonotic viruses.

The potential adaptation of zoonotic H7N9 viruses to ducks was tested in three models determining the replication competence and transmission efficiencies in comparison to susceptible chickens:

1. In ovo inoculation of embryonated duck eggs
2. Determination of the intramuscular pathogenicity index (IMPI) in one-week old ducklings
3. Oronasal inoculation of four-week old ducks



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