

# Avian Influenza and Food Safety



Kristin G. Holt, DVM, MPH  
Office of Public Health Science  
USDA, Food Safety and Inspection Service  
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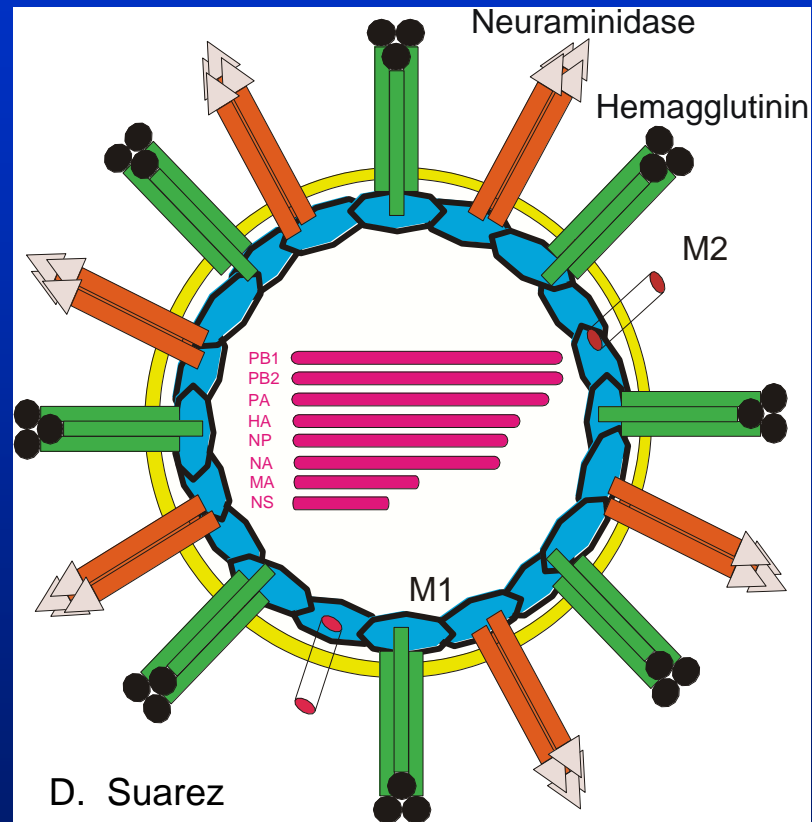
# The current word on AI and food safety...

“There is no evidence that any human cases of avian influenza have been acquired by eating poultry products.” CDC, February 24, 2004

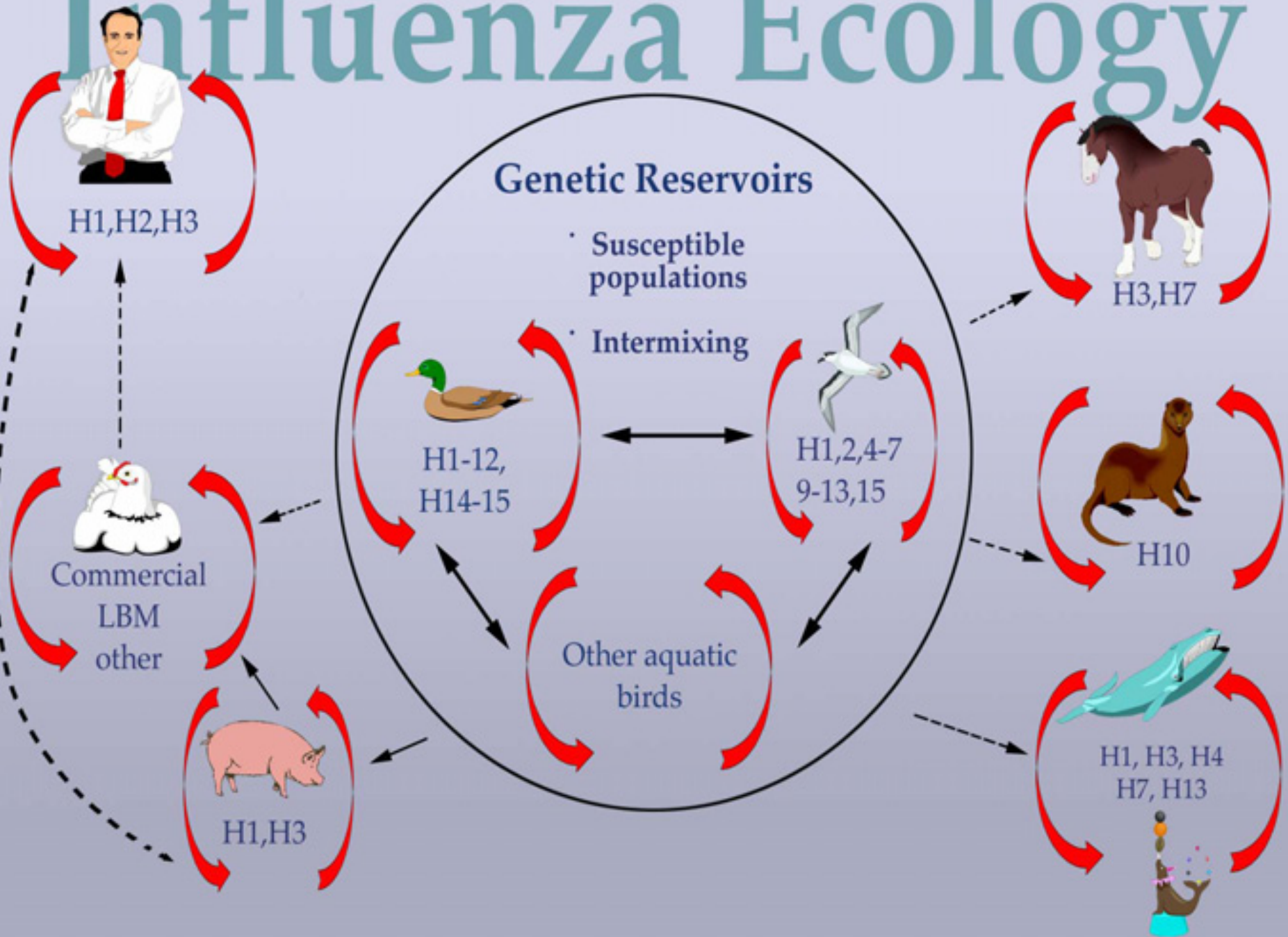
“To date there is no epidemiological information to suggest that the disease can be transmitted through contaminated food or that products shipped from affected areas have been the source of infection in humans.” WHO, January 24, 2004

# Influenza A viruses

- Type A orthomyxoviruses
- Endemic and cause infection and disease in humans, horses, pigs, and various avian species
- Outbreaks/experimental infections – mink, marine mammals, rodents, carnivores, etc.



# Influenza Ecology



# Influenza A viruses that infect birds are referred to as avian influenza viruses.

## Low pathogenicity avian influenza (LPAI) virus

- Clinical syndrome: low mortality; subclinical or respiratory syndrome
- Virus isolation: respiratory tissue and intestinal tract
- H 1 - 15 and N 1 - 9

## High pathogenicity avian influenza (HPAI) virus

- Clinical syndrome: severe illness and death
- Virus isolation: ~ all tissues
- H5, H7

# Influenza A viruses that infect birds are referred to as avian influenza viruses.

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## High pathogenicity avian influenza (HPAI) virus

- Clinical syndrome: severe illness and death
- Virus isolation:

“The virulence of H5 and H7 viruses in chickens does not correlate with their ability to infect and cause disease in humans.”

Swayne et. al. JAVMA 2003



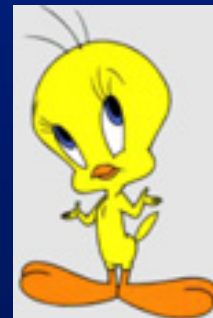
# Live birds in the U.S.

- Commercial poultry
- Backyard flocks
- Wild birds
- Game birds
- Pet birds
- Research birds
- Imported birds



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# Why focus on avian influenza?

- Protect the health of the Nation's poultry flocks
- Support an environment conducive to trade
- Protect public health



- Reportable AI: HPAI and LPAI H5 and H7
- Early detection

# Live bird/egg processing

## Commercial

- Poultry slaughter plants
- Red meat slaughter plants
- Eggs – table eggs/“breakers”



## Non-commercial

- Home/farm harvest
- Field-dressed game birds

## Live bird markets (LBMs)



# Commercial processing operations

## Inedible products

- Feathers
- Offal: head, feet, trachea, lungs, crop, intestines, spleen
- Condemned carcasses and parts
- Rejected eggs
- Egg shells

## Products for human consumption

- Bird whole carcass or parts – raw or further processing
- Liver, hearts, gizzards
- Shell eggs – pasteurized +/-
- Pasteurized egg products

# Barriers to AI in food manufacture

## Farm

- HPAI - visible illness; flocks destroyed
- LPAI - focus on H5, H7
  - destroyed
  - controlled marketed

## Processing plant

- AM/PM inspection
- Zero tolerance for feces
- Discard - head, trachea, lungs, intestines
- Antimicrobial carcass wash
- Refrigeration/freezing – little effect
- Cooking – ready-to-eat products



# Barriers to human infection during meal preparation and consumption

- The presence of live AI virus in or on food in the U.S. is an uncommon event.
- WHO website, “...good hygiene practices during handling of raw poultry meat and usual recommended cooking practices for poultry products would lower any potential risk to insignificant levels.”
- Hong Kong case-control study – 1997 H5N1



# FIGHT BAC!

**CLEAN**  
Wash hands  
and surfaces  
often.



**SEPARATE**  
Don't cross-  
contaminate.



**CHILL**  
Refrigerate  
promptly.

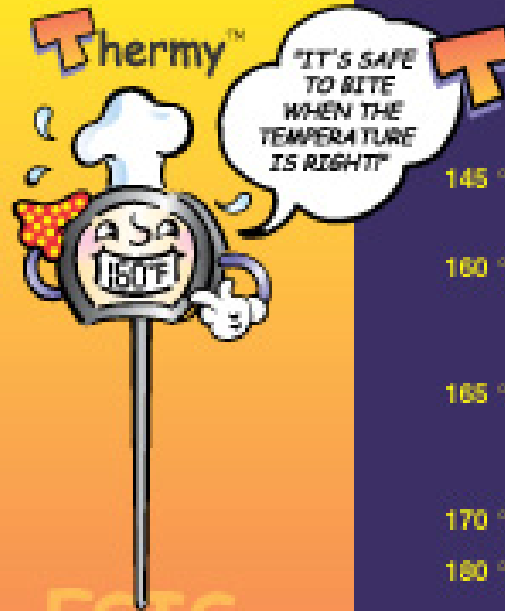


**COOK**  
Cook to proper  
temperatures.



Keep Food Safe From Bacteria

TM



**FSIS**

Food Safety and Inspection Service  
U.S. Department of Agriculture  
[www.fsis.usda.gov](http://www.fsis.usda.gov)  
E-mail: [mp hotline.fsis@usda.gov](mailto:mp hotline.fsis@usda.gov)

## Temperature Rules!

— for cooking foods at home.

- 145 °F** Beef, lamb & veal steaks & roasts, medium rare (medium—160 °F)
- 160 °F** Ground beef, pork, veal & lamb  
Pork chops, ribs & roasts  
Egg dishes
- 165 °F** Ground turkey & chicken  
Stuffing & casseroles  
Leftovers
- 170 °F** Chicken & turkey breasts
- 180 °F** Chicken & turkey  
whole bird, legs, thighs & wings

**USDA Meat and Poultry Hotline**  
1-888-MPHotline (1-888-674-6854)  
TTY: 1-800-256-7072

# In conclusion...

- There is no evidence suggesting that humans have acquired avian influenza by eating poultry products.
- In the U.S. barriers to human infection lie in food manufacture and in proper food handling and cooking.
- There is a low incidence of AI in integrated poultry operations in the U.S.

# Acknowledgements

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*The End*

