

Avian Influenza

Ounce of prevention better than a pound of cure

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Primary Message Now is Prevention

▶ Biosecurity



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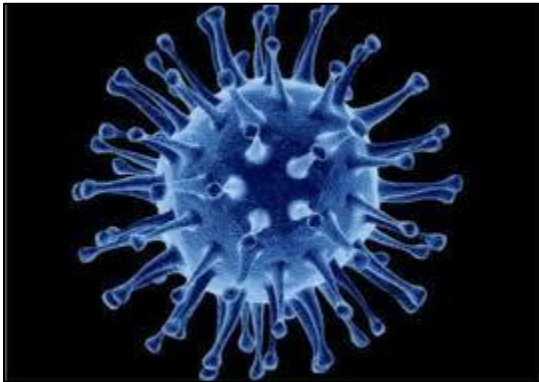


Limit visitors



Avian Influenza

- ▶ Caused by a virus
- ▶ Many different strains
- ▶ Named after proteins on their envelope
- ▶ H for Hemagglutinin (1-16)
- ▶ N for Neuraminidase (1-9)



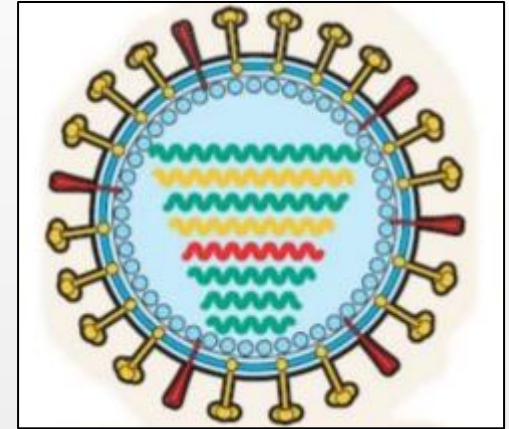
HPAI Strains →

Number	Year	Country/Region	Strain
1	1959	Scotland	H5N1
2	1961	South Africa	H5N3
3	1963	England	H7N3
4	1966	Canada	H5N9
5	1975	Australia	H7N7
6	1979	Germany	H7N7
7	1979	England	H7N7
8	1983-84	USA	H5N2
9	1983	Ireland	H5N8
10	1985	Australia	H7N7
11	1991	England	H5N1
12	1992	Australia	H7N3
13	1994	Australia	H7N3
14	1994-95	Mexico	H5N2 **
15	1995 and 2004	Pakistan	H7N3**
16	1997	Australia	H7N4
17	1997	Italy	H5N2
18*	1996-2015	Eurasia/Africa	H5N1
19	1999-2000	Italy	H7N1
20	2002	Chile	H7N3
21	2003	Netherlands	H7N7
22	2004	USA	H5N2
23	2004	Canada	H7N3
24	2004	South Africa	H5N2 (ostriches)
25	2005	North Korea	H7N7 **
26	2006	South Africa	H5N2 (ostriches)
27	2007	Canada	H7N3
28	2008	England	H7N7
29	2009	Spain	H7N7
30	2011-13	South Africa	H5N2 (ostriches)
31	2012	Chinese Taipei	H5N2
32	2012-15	Mexico	H7N3 **
33	2012	Australia	H7N7
34	2013	Italy	H7N7
35	2013	Australia	H7N2



Avian Influenza

- ▶ Caused by a virus
- ▶ Named after proteins on their envelope
- ▶ H for Hemagglutinin (1-16)
- ▶ N for Neuraminidase (1-9)
- ▶ In waterfowl, usually cause no disease
- ▶ In gallinaceous birds,
 - ▶ **cause mild disease (LPAI)**
 - ▶ **to severe catastrophic disease (HPAI)**
- ▶ HPAI is a foreign animal disease
- ▶ AI has an incubation period of 3-7 days
 - ▶ Depending on



Avian Influenza

- ▶ AI has an incubation period of 3-7 days
- ▶ Depends on
 - ▶ Viral dose
 - ▶ Poultry species
 - ▶ Route of exposure



Avian Influenza

- ▶ Two types based on ability to produce the disease (pathogenicity)
 - ▶ **Low Path AI**
 - ▶ commonly occurs in wild birds. In most cases, it causes minor symptoms or no noticeable symptoms. It is rarely fatal in birds.
 - ▶ **High Path AI**
 - ▶ fatal in chickens and turkeys. HPAI spreads rapidly and has a high death rate



Avian Influenza

- ▶ This virus does not affect humans (not zoonotic)
- ▶ Public Health Department will be monitoring
- ▶ AI viruses can change and adapt
- ▶ Concern is paralysis of the industry, loss of production and trade



History of HPAI in the US

- ▶ 1983 - Large outbreak PA: Destruction of 17M chickens
- ▶ 1983 Single flock in TX

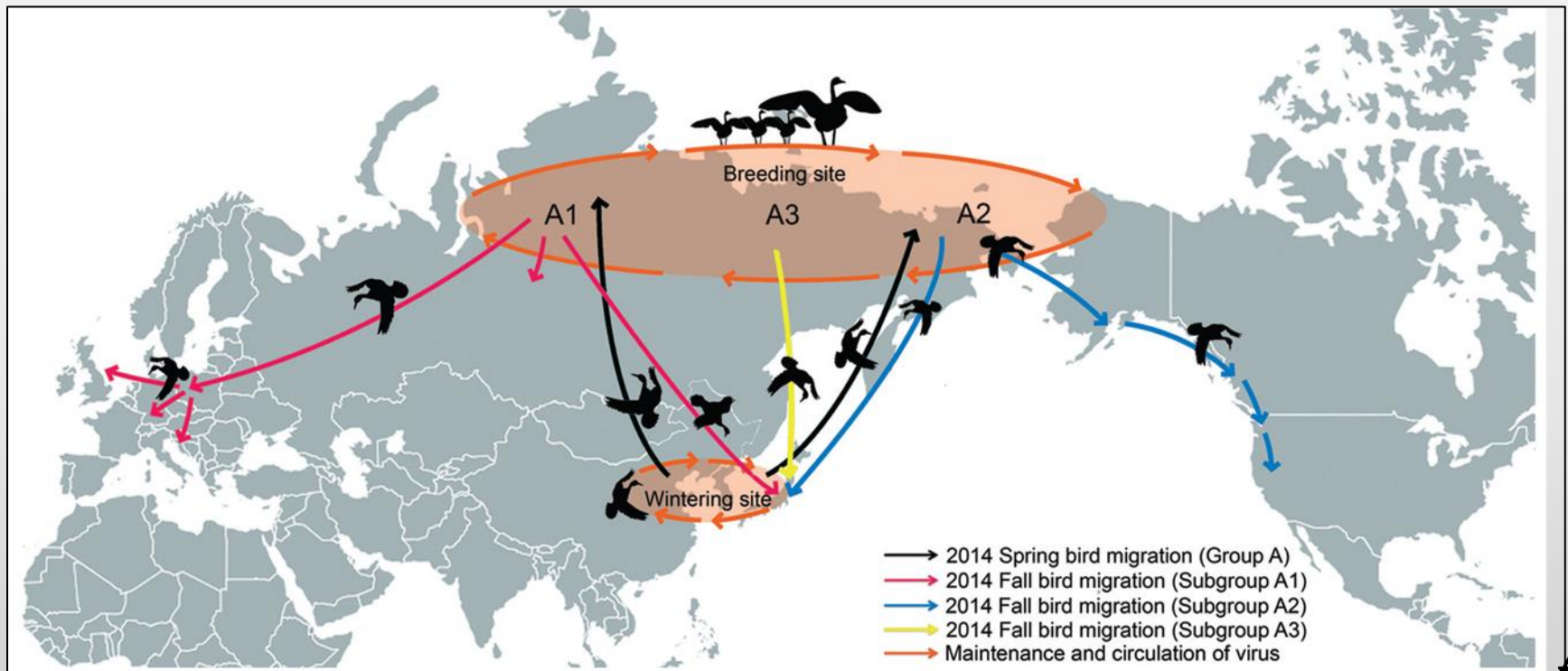


What is going on now?



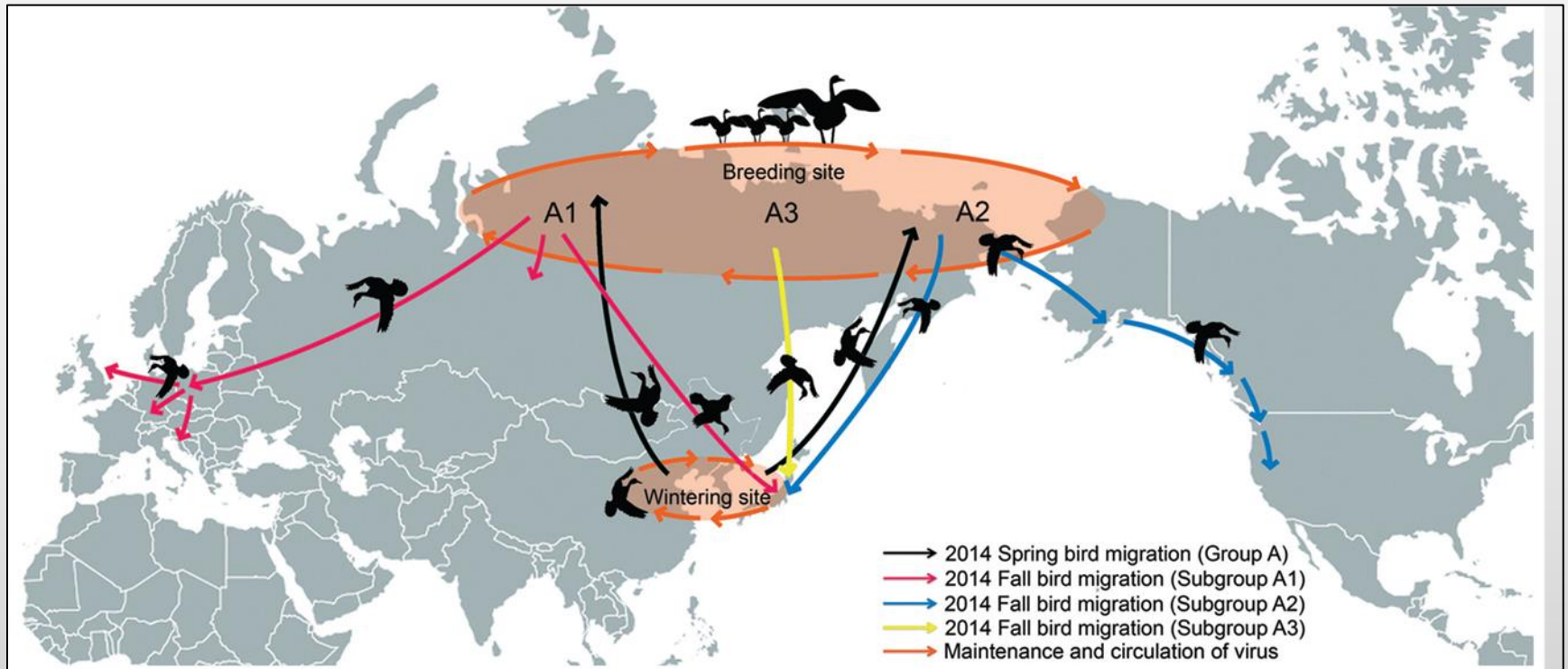
Started in Europe/Russia

- ▶ Virus present last year in Europe, Asia and Russia
- ▶ Birds mingled in Siberia
- ▶ Migration brought virus to BC, Canada
- ▶ Then Washington, Oregon, California



International AI

- ▶ Australia and South America are only regions not affected with AI right now



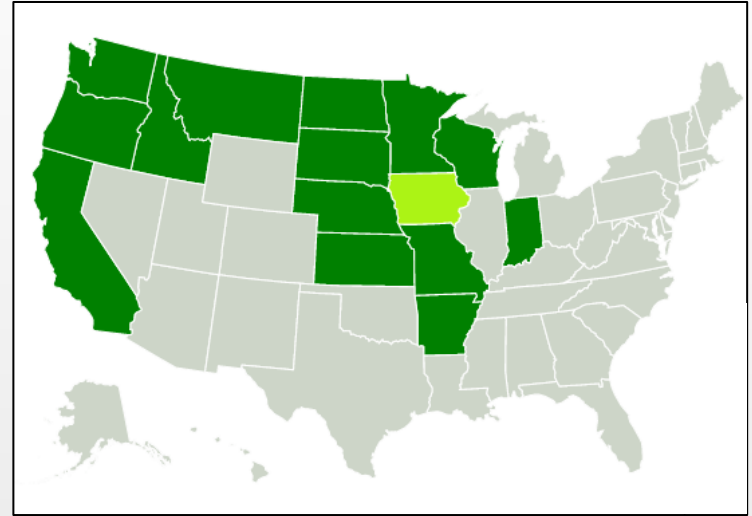
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- ▶ Virus present last year in Europe, Asia and Russia
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- ▶ H5N8 and H5N2



Current outbreak

- ▶ Backyard flocks first (exposure)
- ▶ Moved to commercial poultry
- ▶ Moved across flyways
- ▶ Moved to MN turkeys (84+)
- ▶ Moved to IA layers (46+)
- ▶ **Now 15 states affected (160+Comm, 20+by)**



USDA APHIS



Avian Influenza

- ▶ Virus does not infect humans
- ▶ Poultry meat and egg products are safe to eat...
- ▶ Even during an AI outbreak
- ▶ Why?
 - ▶ No meat or eggs from infected flocks leave the farm
 - ▶ Cooking kills the virus
 - ▶ Not zoonotic



Economic Impact

▶ Minnesota

- ▶ Estimate impact on state economy ~ \$1.5 billion
- ▶ Affected 2,500 jobs
- ▶ Estimated \$170 million loss in wages



Economic Impact

- ▶ Iowa
 - ▶ \$427,000
 - ▶ Income, egg sales, grain sales
 - ▶ 8,500 jobs affected



Economic Impact

▶ Georgia

▶ Economic Impact of the Chicken Industry in Georgia

	Direct	Supplier	Induced	Total
Jobs (FTE)	47,911	72,223	32,651	152,785
Wages	\$2,597,656,000	\$4,360,942,800	\$1,514,633,000	\$8,473,231,800
Economic Impact	\$24,193,016,800	\$16,126,985,800	\$4,488,094,800	\$44,808,097,400



Georgia Poultry Statistics

- ▶ Ranks # 1 in poultry
- ▶ # 1 Ag. Business (~50%)
- ▶ 1.4 billion broilers annually
- ▶ 9.5 million layers
- ▶ 8 million breeders
- ▶ \$4.5 billion farm gate
- ▶ \$15.0 billion total impact



Severe Impact on Grower Income

- ▶ **Broilers**
 - ▶ 5-7 flocks annually
 - ▶ 20-40% of annual income
- ▶ **Breeders**
 - ▶ 1 flock annually
- ▶ **Pullets**
 - ▶ 2 flocks annually
 - ▶ 40-50% of annual income



Avian Influenza Symptoms

- ▶ Lack of energy and appetite
- ▶ Decreased egg production and/or soft-shelled or misshapen eggs
- ▶ Swelling of the head, eyelids, comb, wattles, and hocks
- ▶ Purple discoloration of the wattles, combs, and legs



Purple discoloration of comb & wattles



Swelling of head, face, comb and wattles



Avian Influenza Symptoms

- ▶ Depression, reduced vocalizations
- ▶ Nasal discharge, coughing, sneezing
- ▶ Stumbling or falling down
- ▶ Diarrhea
- ▶ Sudden death without any clinical signs



There are no acceptable or practical
treatments for AI



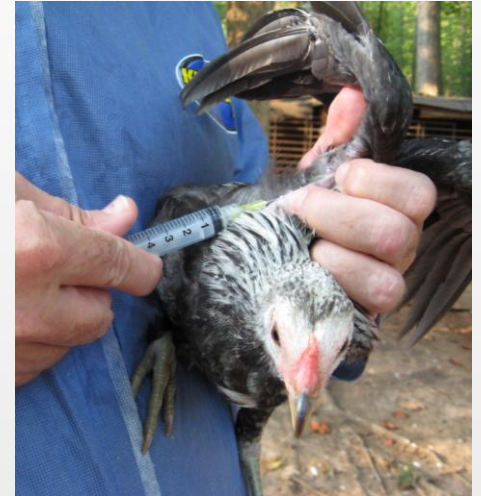
How is HPAI controlled

- ▶ **Stamping out**
 - ▶ Infected flocks quarantined and destroyed
 - ▶ Prevent infection to other flocks
- ▶ Vaccination (USDA decision)
 - ▶ No vaccine match
 - ▶ Paralyzes exports
 - ▶ Interferes with surveillance
 - ▶ Vaccine does not stop virus spread
 - ▶ If vaccine use, it will be to help with eradication



Testing for AI

- ▶ GA Testing volume: 300,000/yr
 - ▶ ACTIVE SURVEILLANCE:
 - ▶ Under NPIP:
 - ▶ all broiler flocks are testing before processing
 - ▶ broiler Breeders every 4-12 weeks
 - ▶ layer flocks 2-3 times in their life time
 - ▶ Auction and Sales: random testing
 - ▶ PASSIVE SURVEILLANCE: All birds submitted to the lab for any reason are tested



State Response Plan

1. Immediate response
(first case)

1. *Activation of Committee and GIS*
2. *REPORTING*

2. Indemnity



AFFECTED FLOCK	
Quarantine Euthanasia	
Disposal	
C&D	
Security and Biosecurity	



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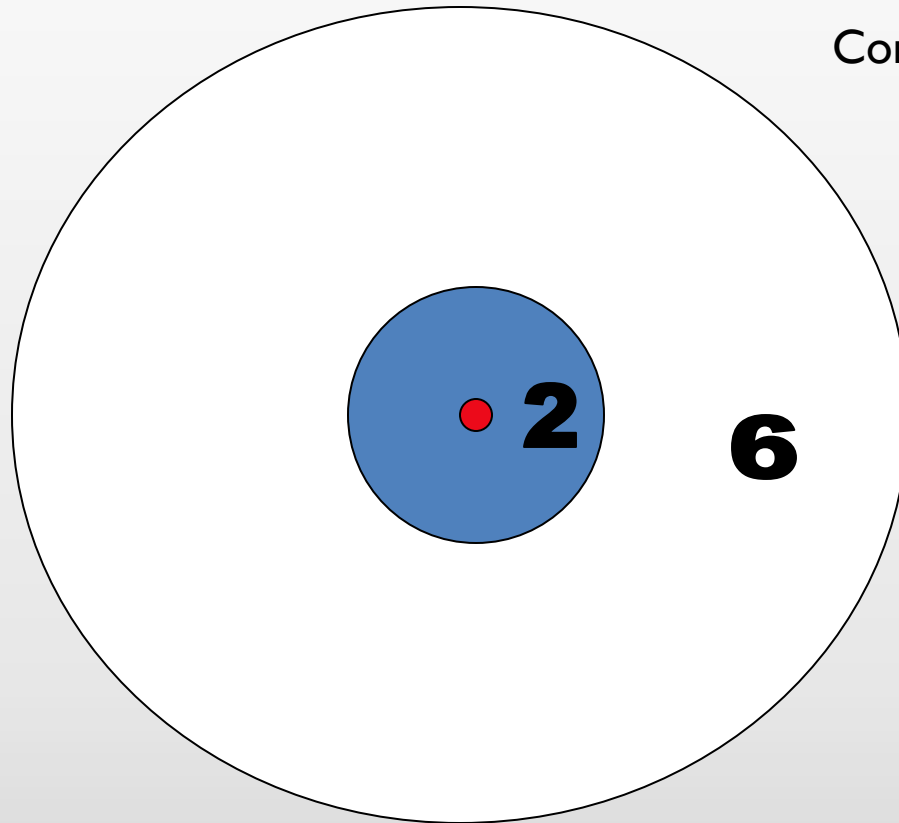


AFFECTED FLOCK	SURROUNDING FLOCKS
Quarantine Euthanasia	Monitoring by priorities and Zones
Disposal	Movement Control
C&D	
Security and Biosecurity	



Zones

Control and surveillance

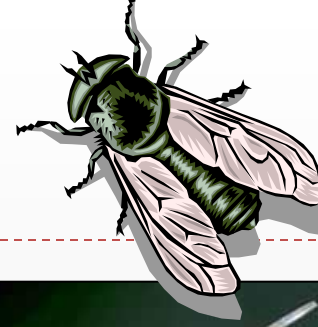


Biosecurity for Flocks

- ▶ Prevent contact with waterfowl & wild birds
- ▶ Establish good rodent control programs
- ▶ Routine cleaning and sanitation of coop
- ▶ Have designated clothes and shoes for entering coop or working with your flock



Biological Vectors



Biosecurity for Flocks

▶ Hunters

- ▶ Dress your game birds in the field whenever possible
- ▶ If you must dress birds at home, clean them in an area your poultry and pet birds cannot access
- ▶ Use dedicated tools for cleaning game, whether in the field or at home
- ▶ Always wear rubber gloves when cleaning game
- ▶ Double bag the offal and feathers. Tie the inner bag, and be sure to take off your rubber gloves and leave them in the outer bag before tying it closed.
- ▶ Place the bag in a trash can that poultry and pet birds cannot access.



Primary Message Now is Prevention

▶ Biosecurity

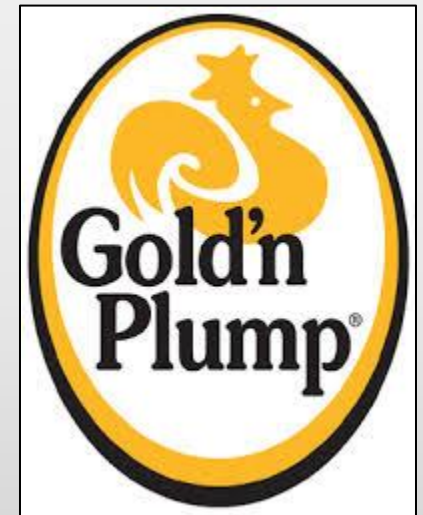


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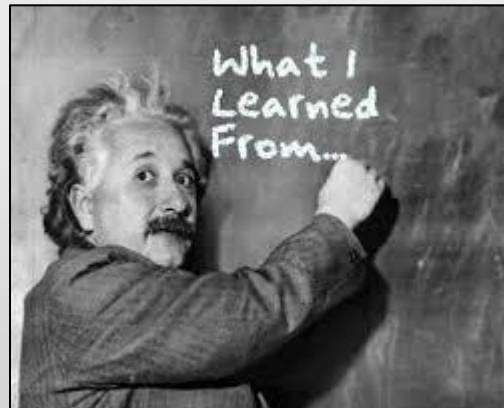
Prevention can be achieved

- ▶ **Golden N Plump**
 - ▶ Geographical center of the MN outbreak
 - ▶ Not a single case of AI
 - ▶ Good biosecurity protocols
 - ▶ Good housing
 - ▶ Proper training



Points to take away from this

1. We need to initiate BIG change-Biosecurity/Prevention
2. This is not a human virus, it is an avian virus
3. Poultry products are safe to consume
4. Water fowl are carriers and efforts should be made to minimize them from grazing near poultry facilities
5. Georgia is prepared to handle it, but with proper biosecurity, hopefully we won't have to





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The University of Georgia



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