

# Bird Flu

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### INTRODUCTION

On the basis of antigenic differences in two major proteins (NP) and (M) influenza virus are classified as A, B, and C. This is further sub-grouped according to the characteristics of their membrane glycoprotein hemagglutinin (HA) and neuraminidase (Na) influenza A (H5 N1) variations in these allow influenza to attack repeatedly.

The present virus now prevailing is influenza type A (H5 N1). This occurs mainly in birds and is highly contagious.

- Outbreaks of H5 N1 were on going in a number of countries.
- The H5 N1 influenza a virus subtype that occur mainly in birds and is highly contagious.
- Mostly cases are those that are in direct contact or close contact with poultry. There are chances that one day H5 N1 will infect human and spread very easily from one person to another. As it does not affect human, there will be hardly any immunity against it if it attacks.
- Experts from all over the world are watching the H5 N1 virus in Asia and Europe; that it may begin to spread more easily from person to person.

### WHAT IS BIRD FLU?

Not every country has proper poultry controls in place to help reduce the spread of bird flu. Monitoring of the migratory patterns of wild birds should provide early alerts of the arrival of infected flocks meaning they could be targeted on arrival. Because birds carry it does not mean it will be passed to domestic flocks. Experts say proper poultry controls such as preventing wild birds getting in to poultry houses, which are present in the UK, should prevent that happening. Even within the H5 N1 strain, variation is seen, and slightly different strains are being seen in the different countries affected in this outbreak. Because birds carry it, there is no way of

preventing its spread. Pakistan has seen cases of the H7 and H9 strains of bird flu in poultry but no cases of these strains being passed to humans. Like humans and other species, birds are susceptible to flu. Migratory wildfowl notable wild ducks are natural carries of the viruses, but are unlikely to actually develop an infection.

### FROM WHERE NEW PANDEMIC WILL START.

Experience from past shows that it will appear in Asia but it can strike anywhere and in any season.

Bulgaria has tightened border control with neighboring Turkey and Romania in an attempt to stop the spread of bird flu. Avian flu was thought only to infect birds until the first human cases were seen in Hong Kong in 1997. Symptoms are similar to other type of flu-fever, malaise, sore throats and coughs. People can also develop conjunctivitis. Birds excrete the virus in their feces, which dries and become pulverized, and is then inhaled. Humans catch the disease through close contact with live infected birds. Some researchers are worried that many illness, and even deaths, though to have been caused by something else, may have been due to the bird flu virus. Researchers are now concerned because scientists studying a case in Vietnam found the virus can affect all parts of the body, not just the lungs.

The drug Tamiflu reduced the severity of flu symptoms. Experts say avian flu is not a food borne virus so eating chicken is safe. However antiviral drugs, which are already available, may help limit symptoms and reduce the chance the disease will spread. Millions of birds have been culled in an attempt to stop the spread of the disease among birds, which would in turn stop it being passed on to humans. Worldwide experts predict anything between 2 million and 50 million deaths if there was a large outbreak of bird flu. General Practitioners should be sent guidance on how to manage an outbreak and who should receive

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anti flu drugs in the event of a pandemic. Does this mean there is likely to be a large outbreak of bird flu? Experts are concerned that this could happen. But in some cases like the Thai case the virus has only been passed to close relatives and spread no further. The UK government has purchased around 14.6 million courses of the antiviral drug Tamiflu--- enough to treat around a quarter of the UK's population.

### **MODE OF TRANSMISSION**

Transmission by small particle aerosols generated by:

- Sneezing.
- Coughing and speaking and by direct contact on surfaces, door knobs, telephone etc.
- Transmission is more likely at the onset of symptoms when large amount of viruses are present.
- The latent period is 48hours.
- Sympoms
- Similar to other type of Flu.
- Sudden onset of fever.
- Cough.
- Headache.
- Extreme tiredness.
- Aching muscles.
- Respiratory symptoms such as sore throat.

### **COLLECTION OF SPECIMEN**

- Early as possible within 72 hours of onset of disease.
- Nasal Washing.
- Nasopharyngeal aspiration.
- Nasopharyngeal swab.
- Nasal and throat swab are routine specimens for influenza diagnosis.

### **DETECTION OF VIRUS**

EIAOR Flourimmuno direct from specimen the plaque assay is the conventional assay for drug sensitivity testing.

Since antigenic and genetic analysis of circulating virus is mandatorv for global surveillance and vaccine strain selection therefore cell culture should also be done.

### **VACCINATION**

Vaccinations against H5 N1 Avian Flu currently occurring in Asia are under development.

### **TREATMENT**

- Antiviral drugs are usually helpful and should be taken within 48 hours. Antiviral should be taken by the poultry workers and cullers.
- Antibiotics will not be effective as this is a viral infection.

### **PRECAUTION DURING AN OUTBREAK**

#### **a) Management Phase**

- Kill all suspected birds.
- Educate the domestic workers, poultry farmers and people involved in wholesale and retail outlets of chicken and eggs.
- Proper laboratory should be setup for the prompt identification of the agent causing this particular type of Influenza and its prevention.
- Strict ban on import of live and frozen chicken.
- Strict biological security of each individual working in poultry and poultry raising areas.

#### **b) Individual Level**

- Keep informed as to when the virus mutates and it is likely to happen in South-East Asia.
- Avoid traveling to areas and keep the children at home.
- Minimize your contact with other.
- The latent period is two days before symptoms and a week after recovery. This is the time when the virus is shed and you may be vulnerable.

### **WASH YOUR HANDS**

- Flu virus can be transmitted from the hand to mouth contact. You can be infected.
- It is important to wash your hands properly.
- The H5 N1 virus settles in the canyons of the fingerprints. Only scrubbing for 20 seconds will remove them.
- Stock up on food and water.
- Buy enough antiviral medicine for each member of the family.
- Choose one room in house that can be used for isolation.

### **RECOMMENDATIONS**

In the absence of an effective cure, it is important to adopt preventive measures of which culling of infected birds is the most effective. Although it is safe to eat poultry and eggs, make sure you take the following measure.

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1. Make sure that the outside skin of the chicken does not come in contact with the meat.
  2. Wash the meat properly before cooking.
  3. Cook the meat properly (70° C).
  4. Avoid semi-cooked or raw eggs.
  5. Avoid contact with the any sort of secretion or excretion from the chicken, and in case of contact wash your hands immediately with warm water and soap.
  6. Make sure that any utensils such as knives and cutting boards are washed in warm water soapy water that come coming in contact with raw meat.

### CONCLUSION

A lot of scientific research needs to be done on bird flu. We need a lot more and we'll get a lot more. Being proactive is what we need to do, as this is such an enormous problem involving the entire global community. Laurie mentioned that we alone, even

though we are far ahead of others in this regard, we alone are not going to solve the problem. It's got to be global collaboration.

### REFERENCES

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