



# BIRD FLU AND YOU

## A QUICK GUIDE TO PROTECTING YOURSELF AND YOUR FAMILY FROM BIRD (PANDEMIC) FLU

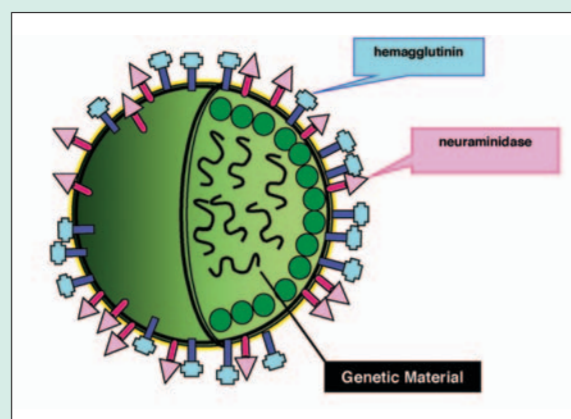
Prepared by: Robert Armstrong, PhD<sup>1</sup> and Stephen Prior, PhD<sup>2</sup> with Natalie Tedder, BS<sup>3</sup>, Mary Beth Hill-Harmon, MSPH<sup>4</sup>, and Nicki Borkowski, MS<sup>5</sup>



### What You Need to Know

#### What is the flu?

Influenza, also called the flu, is caused by a virus. The virus is an organism too small to be seen by the naked eye, but looks like the picture shown on the right. The virus is shaped like a ball with two types of "spikes", an "H" spike and an "N" spike, sticking out of the ball's surface. (The H stands for hemagglutinin; the N stands for neuraminidase. These are both special types of proteins. Unlike the protein you eat, these proteins are not good for you.) A flu virus can have one of 15 different H proteins and one of 9 different N proteins. Scientists name the flu viruses by indicating which H protein is present and which N protein is present. (For example, the virus that caused the 2003-2004 flu was named H3N2.) These "spikes" help the flu virus attach to the cells in your body. Once attached, the virus puts its genetic material into your cells and uses your cells to help make more virus particles. It is this process that makes you ill.



#### The Symptoms:

H5N1 symptoms are the same as seasonal flu:

- Fever
- Body ache
- Cough
- Fatigue

At first, based only on symptoms, you cannot tell the difference between H5N1 and seasonal flu (unlike seasonal or pandemic flu, a common cold does not normally include body ache).

**Human H5N1 cases reported to date have usually started very suddenly with:**

- fever (from 102<sup>o</sup>-104<sup>o</sup>) lasting 3-4 days
- headache
- severe muscle aches
- general weakness/extreme fatigue

These symptoms are accompanied by:

- dry cough
- sore throat
- runny or stuffy nose

Stomach or intestinal symptoms, for example nausea, vomiting, and diarrhea, are much more common in children than adults.

**You should see a healthcare provider or go to an emergency room immediately if you or your child have any of the following:**

- Severe or prolonged (10 days or more) symptoms
- Difficulty breathing; rapid/painful breathing
- Bluish skin
- Dizziness or fainting
- Return of fever or cough after symptoms have improved
- Dehydration (feeling of dry mouth or excessive thirst)
- Cough with yellow mucus or saliva
- Confusion
- Severe or persistent vomiting
- Worsening of an existing serious medical condition (e.g., heart or lung disease, diabetes, HIV, cancer)

#### Treatments for H5N1:

##### Antiviral Drugs:

H5N1 can be treated with antiviral drugs, which require a doctor's prescription. (Antibiotics are not effective against H5N1.) Limited supplies of an antiviral drug called Oseltamivir (Tamiflu®) are being stockpiled, but its effectiveness in a pandemic will not be known until H5N1 is more widespread in humans.

Antiviral drugs for treatment of H5N1 have several limitations:

- Treatment must begin no later than two days after symptoms start. Full treatment lasts for five days.
- Over time, the drugs may become ineffective against H5N1 as it mutates.
- There may not be enough drugs to treat everyone.

##### Vaccine:

- The vaccine against seasonal flu will not protect against H5N1.
- Scientists have developed an H5N1 vaccine that is likely to provide protection. However, many problems need to be resolved before it is ready for general use. To date, there is no solid estimate as to when a vaccine will be available for general use.

#### Announcements from WHO and Government Organizations:

The WHO (World Health Organization) will inform governments when a pandemic starts and the CDC (Centers for Disease Control and Prevention) will provide information to the media and make announcements on television, radio, in print, and via the Internet when the United States is going to be affected.

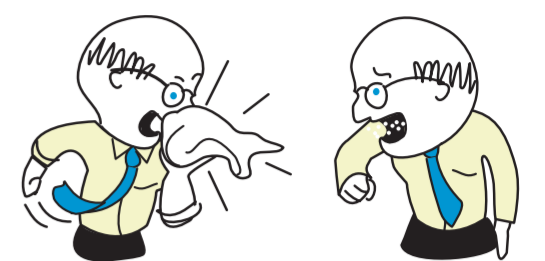
The CDC website can be found at: [www.cdc.gov](http://www.cdc.gov)  
The WHO website can be found at: [www.who.int](http://www.who.int)

### What You Can Do

#### FOUR SIMPLE THINGS YOU CAN DO TO PROTECT YOURSELF AND YOUR FAMILY

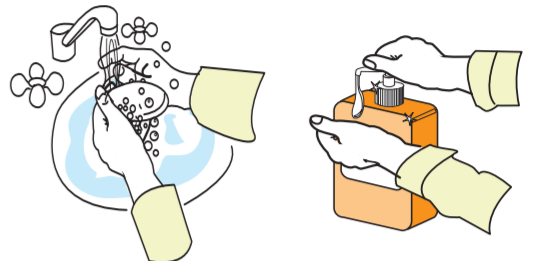
##### COVER YOUR COUGH AND SNEEZE

- Cover your mouth and nose with a tissue
- Put your tissue in the trash can
- If you do not have a tissue, cough or sneeze into your upper sleeve, not your hands



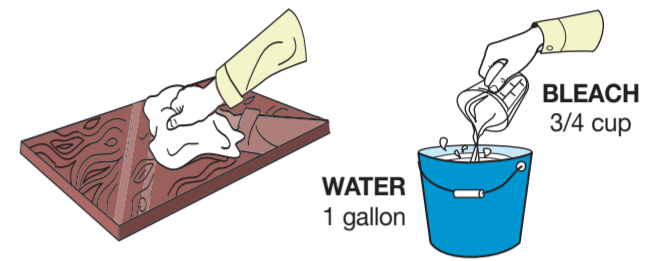
##### WASH YOUR HANDS

- Wash hands with warm, soapy water for at least 10-15 seconds OR use a hand sanitizer after:
  - Coughing or sneezing
  - Using the bathroom
  - Caring for a sick person
  - Handling garbage or animal waste



##### KEEP LIVING AND WORK AREAS CLEAN

- Clean areas with household detergents (dishwashing liquid, laundry detergent, hand soap).
- Sanitize surfaces with bleach or alcohol



##### KEEP YOUR DISTANCE

- Avoid crowds
- Limit your travel
- Travel to and from work during off-peak hours, if possible
- Work from home, if possible



There are many common sense, non-medical steps you can take to protect yourself, your coworkers and your loved ones. Following these procedures can significantly limit the spread of the virus—both H5N1 and the virus causing seasonal flu.

Seasonal Flu	Pandemic Flu
Occurs every year	Occurs infrequently; there were three in the last century
Occurs during the winter; in the U.S. flu season begins in December and ends in March	Occurs at any time of the year
Most people recover within one or two weeks without requiring medical treatment	Some people will not recover even with medical treatment
The very young, the very old and the very sick are most at risk of serious illness	People of every age may be at risk of serious illness

Newspaper and radio/TV reports have also used the following names for the disease caused by the H5N1 virus:

- Highly pathogenic avian influenza (HPAI)
- Avian Influenza (flu)
- H5N1
- Chicken flu
- Bird flu
- Chicken Ebola
- Bird flu virus
- Fowl Plague

#### What does the word "pandemic" mean?

A pandemic is an outbreak of a disease that covers a wide geographic area and affects large numbers of people. The H5N1 flu virus (bird flu) could become a pandemic flu.

#### Why is a pandemic flu deadlier than the seasonal flu?

- Pandemic flu is caused by a new virus or one to which humans have not been exposed in a very long time (probably not within the lifetime of anyone currently living).
- Pandemic flu spreads rapidly and is seen worldwide.
- Pandemic flu infects large numbers of people of all ages and causes serious illness and deaths.

#### How long would an H5N1 pandemic last?

An H5N1 pandemic would probably come in waves. In each wave about 1/4 of the population could be infected. People who become ill in the first wave could also become sick in later waves. Each wave could last about 8-12 weeks, and the period between waves could vary between 8-20 weeks. Most likely, an H5N1 pandemic would have at least three waves and could last for over 12 months.

#### When will the next flu pandemic occur?

No one knows for sure. The period between flu pandemics does not follow any regular pattern. Many scientists think the H5N1 virus is showing signs of becoming a pandemic flu virus, though they are not certain when an H5N1 pandemic might start. Before it reaches the U.S. there will be national and international media reports of the initial cases of pandemic flu. If a pandemic reaches the U.S., an announcement will be made on television, in newspapers, on the Internet or the radio.

#### What will happen if a flu pandemic occurs in the U.S.?

A flu pandemic would spread across the U.S. within weeks and could cause:

- Disease in large numbers of people (up to 25% of the population).
- Potential deaths in all age groups.
- Significant pressure and disruption to all health services.
- Potential disruption to all aspects of daily life.
- Possible emergency measures that will affect the entire nation.

(See "What You Can Do" for tips on staying healthy during a flu pandemic.)

### FREQUENTLY ASKED QUESTIONS

#### Can my pets (cats, dogs) contract H5N1? Can I contract H5N1 from them?

See diagram.

#### Can I get H5N1 from eating infected poultry or eggs?

In general, scientists do not think you can get H5N1 from eating infected poultry or eggs. To avoid any possibility of getting sick, follow safe cooking practices: Cook chicken or eggs at temperatures above 70°C (158°F); keep raw and cooked foods apart; wash your hands when handling raw foods; clean all cutting boards, counter tops and utensils; do not eat raw, undercooked poultry or poultry products, or raw runny eggs.

#### Can I get H5N1 from working with/around poultry? What if I work on a farm?

Exposure to infected poultry and their droppings or dust contaminated with poultry droppings has been associated with human infection; however, this is a rare occurrence. The Centers for Disease Control and Prevention (CDC) and World Health Organization (WHO) have developed recommendations for people working with poultry.

#### Is H5N1 the same as SARS?

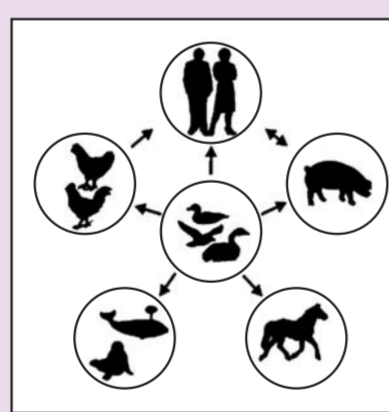
No. H5N1 is a completely different virus from the one that causes Severe Acute Respiratory Syndrome (SARS).

#### Is it safe to visit other countries that have reported cases of H5N1 infection?

To date, the World Health Organization (WHO) has not advised any travel restrictions. When visiting affected countries, avoid farms and live poultry and birds, and adopt good hygiene practices. The CDC provides updated information for travelers. For further details, visit their website: [www.cdc.gov/travel](http://www.cdc.gov/travel)

#### Are there any supplements, herbs or natural food products I can take to help protect me from H5N1?

To date, dietary supplements and herbal remedies have not been evaluated or approved by the Food and Drug Administration (FDA) for H5N1. Because supplements and over-the-counter products can interfere with prescription medicines, consult your healthcare provider before using such products.



This diagram shows how humans and animals interact to catch and spread H5N1. For example, it can pass to a farmer's chickens, then pass to humans. Likewise, it can pass to a farmer's pigs and then pass to humans. In a pandemic flu, the virus will change (mutate) so that it can also easily pass from one human to another.

- There is evidence that cats can catch H5N1, but it is not certain that they can pass it to humans.
- There is no known case of dogs catching or spreading H5N1.
- Pet birds can catch H5N1 and spread it to humans. However, there should be no concern if bird owners keep their birds in clean conditions, away from wild birds, and continue to wash their hands after handling birds or coming into contact with bird droppings.

#### Will my annual flu shot (vaccination) protect me against H5N1?

No. Your yearly flu vaccination will not provide any protection against H5N1.

#### What should I do if I am pregnant during the pandemic?

Make sure you get your seasonal flu shot, even though it will not protect you from H5N1 it will still protect you from the seasonal flu. Keep all appointments with your doctor. At the first onset of flu symptoms, go see your doctor.

#### Should I stockpile food and water? If so, for how many days?

Experts recommend stockpiling 3 days worth of non-perishable food and stockpiling 3 gallons of water for each person in your household, per day. This is a standard approach for any emergency that might limit your ability to leave your home.

#### Will I need to be quarantined?

If pandemic flu occurs in the United States, it is likely that authorities will ask people to voluntarily restrict their travel and other day-to-day activities. For those who are infected with H5N1, mandatory (enforced) movement and activity restrictions may be imposed to limit the spread of H5N1. (See "Social Distancing and Movement & Activity Restrictions.")

#### Who should I contact if I think I'm infected with H5N1?

If you believe you are infected or have been ill for longer than 10 days or have a fever above 104°F, contact your healthcare provider.

#### Can I go to my doctor/healthcare provider and be tested for H5N1?

To date, there is no routine test for H5N1.

#### Am I at a greater risk for being infected with H5N1 if my immune system is already weakened due to HIV, cancer treatment or other health problems?

People with weakened immune systems are at greater risk of H5N1 related complications and, if infected, may be capable of spreading the virus for longer periods of time.

#### Are there any devices or products that will boost my immune system and provide protection for H5N1?

If a pandemic occurs, it is highly likely that many people will be offering to sell you a variety of products that they will claim are designed to protect you from H5N1. In nearly all cases, such products will be of little to no value and just cost you money. Follow the advice of public health officials and your personal doctor.

#### Can H5N1 live on everyday surfaces like clothes, telephones, door handles, toys, grocery carts, etc.?

Some reports suggest H5N1 can live for several days on a variety of everyday surfaces. Follow the suggestions noted in "Cleaning and Sterilizing" for treating your working and living areas. Washing clothes in hot water will kill any H5N1 particles that could be on them. Wearing disposable gloves, or using paper towels or napkins as a barrier, will reduce your chances of getting H5N1. Wash your hands frequently during the day and avoid touching your mouth, nose, or eyes.

#### Cleaning and Sterilizing:

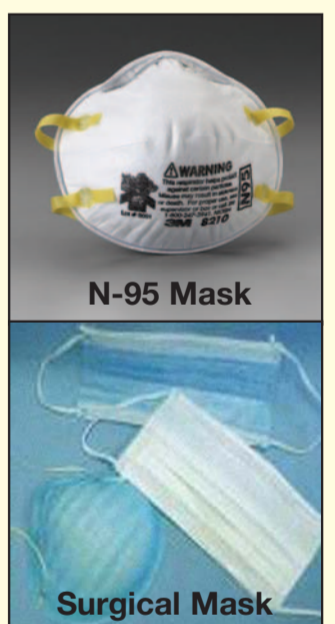
H5N1 is killed by alcohol and bleach. Cleaning furniture, work areas, food prep areas, etc. with household detergents (e.g. dishwashing liquid, laundry detergent, hand soap) followed by a sterilizing solution (alcohol or bleach) is recommended. The table gives you directions on how to prepare and use a sterilizing solution.

Sterilizing Agents	Recommended Use	Precautions
<b>Household (Laundry) Bleach:</b> Dilute 3/4 cup of bleach into one gallon of water.	Disinfection of material contaminated with blood and body fluids.	Use in a well ventilated area. Wear gloves while using/handling bleach. Only mix bleach with water.
<b>Rubbing Alcohol:</b> (e.g. 70% isopropyl alcohol or 60% ethyl alcohol) Do not dilute; use straight from bottle. Items with lower alcohol concentrations, such as whiskey, vodka and rum, will <b>not</b> be effective.	Smooth metal surfaces, tabletops and other surfaces on which bleach cannot be used.	Flammable and toxic. Use in a well ventilated area. Do not inhale. Keep away from heat sources, electrical equipment, flames and hot surfaces. Allow to dry completely.

Keep bleach and rubbing alcohol away from children. Do not drink bleach or rubbing alcohol.

#### Personal Protective Equipment:

- According to the World Health Organization (WHO), the use of personal protective equipment (PPE) may reduce, but not eliminate the possibility of becoming infected with H5N1.
- Certain individuals, such as those exposed to poultry and poultry products, veterinary workers, and healthcare workers, should wear PPE. Supply of this equipment should be discussed with your employer.
- Family members or other people who care for H5N1 infected patients should wear a mask and disposable latex or plastic gloves. H5N1 patients should wear a mask when in contact with other people. The preferred type of mask is an N-95 mask (see photo), which can be purchased at local hardware stores or through medical supply companies. A second option is a surgical mask (see photo). Surgical masks and gloves can be purchased at local drug stores.
- Discard masks after 4-6 hours of use. Do not re-use or share them. Put used masks and gloves in a sealed plastic bag and throw away with your household trash. The use of PPE does not replace basic sanitary measures such as hand washing. **Hand washing is essential to preventing the spread of H5N1.**
- If asked to wear a mask, be sure to wear it properly. This includes:
  - Securing ties behind head or placing elastic bands behind ears.
  - Fitting the flexible band at top of the mask to the bridge of your nose.
  - Fitting the mask snugly to your face and below your chin.
- Wash your hands immediately after removing and disposing of a mask.
- While there is some debate about whether or not masks are effective for every day use, it is clear that wearing a mask will not cause harm.



#### Social Distancing and Movement & Activity Restrictions (MAR)

Contact with an infected person increases your risk of catching H5N1. Limiting contact between infected and uninfected people will help prevent the spread of H5N1. The two most effective ways of doing this are social distancing (SD) and movement & activity restrictions (MAR).

##### Social Distancing:

The goal of social distancing is to increase the distance between people so that H5N1 cannot easily spread. Steps you can take that will increase social distancing include:

- Avoiding crowded places (including movie theaters, malls and sporting events).
- Working from home.
- Changing work schedules and patterns to minimize contact.

##### Movement and Activity Restrictions (MAR):

MAR reduces contact between people by limiting public gatherings and temporarily closing locations where many people might gather. Restrictions could be placed on you as an individual, or as part of larger public health precautions taken for the whole community. Public health authorities may impose movement and activity restrictions on you as an individual if:

- Authorities think you may be infected because you have been in contact with a known infected person or place-even though you may show no symptoms.
- Authorities think you may be infected because you have been in contact with a known infected person or place-and you are showing symptoms.

In each of these cases, an adult would most likely be restricted for 10 days (14 days for a child of 12 and younger). **It is important to remember that early in the illness you may not be showing any symptoms but can pass H5N1 to other people.**

Historically, MAR has included quarantines. During the early stages of a pandemic, enforced quarantines may be used, but a more widespread voluntary home quarantine (also known as "self-shielding" or "snow days") will likely be recommended. Public health authorities will ask for wide-scale voluntary cooperation when they declare "snow days."

In addition to wide-scale voluntary actions, public health officials may take the following measures on a community level:

- Temporary closing of schools, universities, businesses, factories and places of worship.
- Limiting mass transportation (including subways, train services, and airports).

Remember, during a pandemic, limit your contact in public but continue to communicate (phone, Internet, etc.) with friends and family.

#### For more information, contact:

Centers for Disease Control & Prevention (CDC)  
1600 Clifton Rd., Atlanta, GA 30333  
(404) 639-3534 • (800) 311-3435 • [www.cdc.gov](http://www.cdc.gov)

Department of Health & Human Services (HHS)  
200 Independence Avenue, SW, Washington, DC 20201  
(202) 619-0257 • (877) 696-6775 • [www.hhs.gov](http://www.hhs.gov)

National Security Health Policy Center  
Potomac Institute for Policy Studies  
901 N. Stuart Street, Suite 200, Arlington, VA 22203  
<http://www.potomacinstiute.org/academic/nshpc/nshpc.htm>  
[fl@potomacinstiute.org](mailto:fl@potomacinstiute.org)

World Health Organization (WHO)  
Regional Office for the Americas  
525 23rd Street, NW, Washington, DC 20037  
(202) 974-3000 • [www.who.int](http://www.who.int) • [www.paho.org](http://www.paho.org)

To request copies of "The Bird Flu & You" Poster, contact:  
Center for Technology and National Security Policy  
National Defense University  
Bldg. 20, Suite #3  
300 5th Avenue SW, Fort Lesley J. McNair  
Washington, DC 20319  
<http://www.ndu.edu/ctnsp/> • [LifeSciences@ndu.edu](mailto:LifeSciences@ndu.edu)

The facts, recommendations and advice expressed or implied on this poster are those of the contributors and do not necessarily reflect the views of the Department of Defense, the National Defense University or any other agency of the Federal Government. If you are in any doubt about what actions to take you should obtain professional healthcare advice.

<sup>1</sup> Senior Fellow, Center for Technology and National Security Policy, National Defense University, Ft. McNair, Washington, DC  
<sup>2</sup> Director, National Security Health Policy Center, The Potomac Institute for Policy Studies, Arlington, VA  
<sup>3</sup> Research Assistant, National Security Health Policy Center, The Potomac Institute for Policy Studies, Arlington, VA  
<sup>4</sup> Research Associate, Center for Technology and National Security Policy, National Defense University, Ft. McNair, Washington, DC  
<sup>5</sup> Analyst, Joint Warfighting Division, ANSER, Arlington, VA

