

# What are YOU gonna do about...

## INFECTIOUS DISEASES?

The immune system is a complex network of cells, tissues, and organs that work together to defend the body against attacks by foreign invaders such as bacteria, viruses, parasites and fungi. Because the human body provides an ideal environment for many microbes, they try to break in. It is the immune system's job to keep them out or, failing that, to seek out and destroy them.<sup>9</sup> But if a person's immune system is weak or damaged, germs and infection can settle in, leading to illness or possibly death.

According to the Centers for Disease Control and Prevention, infectious diseases are the leading cause of death worldwide. And with air travel and international trade, infectious microbes are carried across borders every day by humans, animals, insects and contaminated foods.

Some "old" diseases like malaria and measles are found in certain parts of the world, but "new" diseases like HIV/AIDS and West Nile are spreading around the globe. Plus every year there's some form of influenza and the common cold that spreads and affects people.

There are many infectious diseases -- too many to cover -- so we're only covering a common one (**flu**) and some emerging ones (**avian & swine flu**, **C. diff** and **staph**). First, we describe each illness followed by "Things to watch for", then summarize "How they spread" and "What to do" for all of them at the end. Educate yourself about threats of emerging diseases and listen to officials for advice on how to protect yourself and your loved ones.

**Influenza (flu)** is a respiratory illness caused by the influenza virus that affects millions of people each year. Flu causes about 250,000 - 500,000 deaths worldwide every year, and a major outbreak (called a pandemic) could increase the death toll dramatically. The best way to prevent the flu is to boost your immune system and get vaccinated, esp people with weakened immune systems. There are several antivirals approved for treatment.

There are 3 types of flu viruses: A, B, and C. Influenza A viruses can infect humans and mammals (including pigs) but wild birds are the natural host. Typically, wild birds don't get sick but A viruses can be deadly to domestic chickens and turkeys. Influenza B viruses are normally found only in humans and generally don't cause severe widespread illness, while Influenza C viruses cause mild illness in humans. Since strains can mutate or cross over to other species, it could lead to widespread illness and death. The worst influenza A outbreak on record was the Spanish flu pandemic of 1918-1919 which may have killed up to 50 million people worldwide.

### Things to watch for (flu)...

**Possible symptoms** - fever (usually high), headache, sore throat, cough, runny nose, body aches, weakness, diarrhea or puking (more common in children)

**Possible complications** - bacterial pneumonia (lung inflammation), shortness of breath, hospitalization

**Avian flu (bird flu)** is an influenza A virus subtype that occurs mainly in birds, is highly contagious among birds, and can be deadly to them. According to the CDC there are many different subtypes but one of them is the H5N1 virus. H5N1 does not usually infect people, but infections have occurred. To date, most human cases caught this flu from domestic chickens or ducks and over 50% of those patients died.

**Swine flu** is also an influenza A virus subtype that occurs mainly in pigs year-round. It doesn't normally affect humans but we can get swine flu from infected pigs or other mutations of flu strains (like the H1N1 virus).

According to a recent worst-case scenario outlined by the World Bank, a flu pandemic of avian or other origin could kill more than 70 million people worldwide and lead to a "major global recession" costing more than \$3 trillion.<sup>10</sup> Several vaccines are currently in development for avian and swine flu plus there are some antiviral drugs available for treatment.

### Things to watch for (avian or swine flu)...

**Flu-like symptoms** - fever, headache, sore throat, cough, runny nose, body aches, fatigue, puking or diarrhea

**Possible complications** - eye infections (avian flu), pneumonia, severe breathing problems or death

**C. diff (Clostridium difficile or C. difficile)** is a toxin-producing bacterium that causes diarrhea and more serious conditions like colitis (inflammation of the colon). There are many different strains and most make only two toxins that cause minor symptoms that are easily treated. However, a mutated strain called NAP1 (or the 027 or BI strain) makes about 20 times more toxins so symptoms are much more severe. And now NAP1 is starting to show signs of becoming drug-resistant.

Experts estimate C. diff sickens about 500,000 Americans a year and the rate of infection grows by about 10% each year. C. diff is fairly common among older adults in hospitals or in long-term care facilities and typically occurs after using antibiotics. One out of five people who get the infection will get it again, and recurrences can be more severe or even deadly.

Unfortunately C. diff spores can survive on most surfaces for months, and

most hospital cleaners won't kill it, but a solution of bleach and water could. Also, alcohol-based hand sanitizers used in many health facilities do not work so staff, patients and visitors must wash hands with soap and water frequently to reduce spreading the infection.

### Things to watch for (C. diff)...

**Mild symptoms** - watery diarrhea (at least three times a day for 2 or more days with no blood in your poop), possible cramping or minor abdominal pain or tenderness

**Severe symptoms** - watery diarrhea 10 to 15 times a day, abdominal cramping and pain, fever, blood or pus in poop, nausea / pukey, dehydration, loss of appetite, weight loss

*Note: Not all cases of diarrhea are C. diff, but if you have it several times a day for 2 or more days, see your doctor immediately.*

**Staph (staphylococcus aureus)** are bacteria about a third of the population carries on their skin or in their nose. Bacteria can enter the body through a cut, bite or wound and may cause infection. Some strains of staph have become drug resistant (called methicillin-resistant Staphylococcus aureus or **MRSA**). According to the CDC, staph bacteria are one of the most common causes of skin infections in the U.S. Most infections are minor (like a pimple, bump or boil) and can be treated with antibiotics. However, it can quickly turn into deep, painful abscesses that require surgical draining. Sometimes the bacteria remain confined to the skin, but they can also penetrate into the body, causing potentially life-threatening infections in bones, joints, surgical wounds, the bloodstream, heart valves and lungs.

Staph infections, including MRSA, occur most often in hospitals, nursing homes and facilities where people have weakened immune systems. MRSA also threatens police, firefighters and EMS workers, school kids and the community in general. In fact, the CDC reports MRSA is now killing more Americans each year than AIDS.

### Things to watch for (staph / MRSA)...

**Possible symptoms** - skin infection that may look like a pimple or boil and can be red, swollen, painful, or have pus or other drainage

**Severe** - pneumonia, bloodstream or wound infections

### How infectious diseases spread...

Most infectious diseases are spread by close person-to-person contact primarily by touching people or things contaminated with bodily fluids (like pee, poop, sweat, droplets from sneezing, etc) -- then touching your

eyes, nose, or mouth. Other diseases (like MRSA) can be spread by sharing personal items like towels or razors or by medical staff using contaminated items like stethoscopes or blood pressure cuffs. Keep in mind some bacteria or viruses can survive on objects for days, weeks or months.

### **What to do to reduce the spread of infectious diseases...**

- Wash hands often using soap and water or use hand sanitizer (with at least 60% alcohol in it) to reduce the spread of germs. But keep in mind sanitizers don't work against some bugs so it's best to wash up.
- Tell healthcare workers and visitors to wash their hands before they touch you or your stuff -- don't be timid!
- If you have a fever, stay home! And wait 24 hours after fever breaks before you return to work or school.
- Use antibiotics only when absolutely necessary. Consider boosting your immune system to help fight infections.
- Sick people should cover mouth and nose with tissue or sleeve when coughing or sneezing, wash hands often, and wear a face mask around others (if very ill).
- Keep cuts and scrapes clean and covered until healed.
- Clean counters, doorknobs, fixtures, phones, remotes, nurse call buttons, linens, etc. often with a bleach solution.
- Don't share silverware, razors, clothing, towels, or bedding and wash objects with soap and hot water.
- Follow doctor's instructions and limit activities outside home until fever and symptoms have gone away.

For more information, visit the following web sites ...

**Influenza / Flu:** [www.cdc.gov/flu/](http://www.cdc.gov/flu/)      [www.phac-aspc.gc.ca/influenza/](http://www.phac-aspc.gc.ca/influenza/)  
[www.pandemicflu.gov](http://www.pandemicflu.gov)      [www.who.int/topics/influenza/en/](http://www.who.int/topics/influenza/en/)

**Avian flu:** [www.cdc.gov/flu/avian/](http://www.cdc.gov/flu/avian/)      [www.phac-aspc.gc.ca/influenza/](http://www.phac-aspc.gc.ca/influenza/)

**Swine (H1N1) flu:** [www.cdc.gov/h1n1flu/](http://www.cdc.gov/h1n1flu/)      [www.phac-aspc.gc.ca/influenza/](http://www.phac-aspc.gc.ca/influenza/)

**C. diff:** [www.cdc.gov/ncidod/dhqp/id\\_Cdiff.html](http://www.cdc.gov/ncidod/dhqp/id_Cdiff.html)  
[www.phac-aspc.gc.ca/id-mi/cdiff-eng.php](http://www.phac-aspc.gc.ca/id-mi/cdiff-eng.php)  
[www.mayoclinic.com/health/c-difficile/DS00736](http://www.mayoclinic.com/health/c-difficile/DS00736)

**Staph:** [www.cdc.gov/ncidod/dhqp/ar\\_mrsa.html](http://www.cdc.gov/ncidod/dhqp/ar_mrsa.html)  
[www.mayoclinic.com/health/mrsa/DS00735](http://www.mayoclinic.com/health/mrsa/DS00735)

Or call CDC Hotline at 1-800-CDC-INFO. See more tips on pages 231-232