

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.⁹ 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, Ebola 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 so we chose a few you may have heard of before (**flu**, **Ebola**, **coronaviruses**, **C. diff** and **staph**). We briefly describe each illness, then summarize "How they spread" and "What to do" for all of them with links at the end. Educate yourself about I.D.s 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, horses and seals) 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 was the Spanish flu pandemic of 1918-1919 that may have killed up to 50 million people worldwide.

Things to watch for flu (seasonal, avian, H1N1, etc.)...

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 or severe breathing problems, eye infections (avian flu), pneumonia, hospitalization or death

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.¹⁰ Several vaccines and antivirals are available for treatment, however when a new influenza A virus emerges, a pandemic can occur.

Ebola virus species was discovered in 1976 in the Congo near the Ebola River. Since then, outbreaks have appeared sporadically in Africa. Ebola is a severe, often fatal disease in humans and primates and one of numerous Viral Hemorrhagic Fevers (read more about VHF's on page 101). There is a lot of misinformation with this latest outbreak so we encourage you to please visit the Ebola websites listed on page 199 to learn more.

Coronaviruses (COVID-19, MERS, SARS, etc.) are a large family of viruses that can infect birds and mammals (including humans). Normally these viruses cause mild to moderate respiratory symptoms (like a cold) but have been linked to pneumonia. The incubation period can vary from 2 to 28+ days, and mortality rates can vary from about 35% (MERS) to around 14% (SARS) to about 3% (recent COVID-19 coronavirus).

Some things to watch for...

Possible symptoms - fever, cough, shortness of breath or trouble breathing, diarrhea, nausea / puking

Possible complications - pneumonia, kidney failure 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 are easily treated. However, a mutated strain called NAP1 (or O27 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. 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/ www.phac-aspc.gc.ca/influenza/
(all kinds) www.flu.gov www.who.int/topics/influenza/en/

Ebola: www.cdc.gov/vhf/ebola/ www.who.int/csr/disease/ebola/

Coronaviruses: www.cdc.gov/coronavirus

C. diff: www.cdc.gov/HAI/organisms/cdiff/Cdiff_infect.html
www.phac-aspc.gc.ca/id-mi/cdiff-eng.php
www.mayoclinic.com/health/c-difficile/DS00736

Staph: www.cdc.gov/mrsa
www.mayoclinic.com/health/mrsa/DS00735

Or call CDC Hotline at 1-800-CDC-INFO or TTY: 888-232-6348. Also see some pandemic planning tips on pages 230-231