

# Infectious Diseases and Disease Prevention Unit Review

## Key Points:

- Some diseases are contagious, but other diseases aren't.
- Although diseases are a danger to humans, we can take certain actions to keep them from spreading.
- Humans to be responsible to make sure we are doing as much as we can to get rid of deadly diseases.

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## How Diseases Spread

A **disease** is anything that changes the way our normal body system works. Many diseases are caused by exposure to chemicals or are passed from a parent to a child. These diseases are called **noninfectious diseases** because they are not contagious.

Many diseases are spread by **pathogens**, which are microbes that cause disease. If a disease can be passed by a pathogen, it is considered an **infectious disease** (also known as a **contagion**).

Many infectious diseases can be transmitted by a **vector**, or an organism that helps a disease spread. Many vectors, such as the bacteria that help spread cholera, have actually started **epidemics** (major outbreaks) or **pandemics** (worldwide outbreaks) of infectious diseases.



Insects, like the tsetse fly (above) serve as vectors for many diseases. The tsetse fly helps to transmit African sleeping sickness, a disease caused by protists. Mosquitoes are also a great example of vectors.

In some cases, though, there are humans and other living things that can be carriers of diseases. A **carrier** is an organism that carries a disease-causing microbe and can give it to other organisms. However, carriers do NOT actually

show any symptoms of the disease or illness.

Many diseases that are infectious diseases are also **contagious diseases**, which means that they can be spread from person to person. Two individuals don't always have to have direct contact for one person to give a disease to another. A lot of contagious diseases can be passed through coughing, sharing drinking glasses, or using the same computer keyboard.

## How We Can Prevent the Spread of Disease

To prevent diseases from spreading, it's important that humans demonstrate healthy behaviors. Like washing their hands, avoiding contact with ill people, eating healthily, and getting enough rest. In addition, humans can develop two types of immunity. The first, **active immunity**, is

developed when humans are actually exposed to the pathogen that causes the disease. Due to this exposure, the human immune system produces **antibodies**, which are chemicals that help kill the pathogen. Another way to develop active immunity is to get a **vaccine**, or small dose of

the pathogen that helps the body learn how to fight the disease.

Humans can also develop **passive immunity**, which involves transferring antibodies from one organism to another. Babies often develop passive immunity when they receive antibodies from their moms.

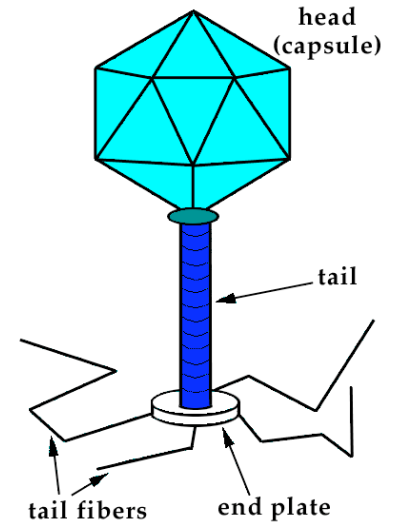
## Diseases Caused By Viruses



Many contagious diseases are caused by viruses. Examples of such diseases include **rabies, influenza (the flu), polio, smallpox, yellow fever, measles, SARS, and AIDS**. Each of these diseases develops when a virus attaches to a healthy cell and injects its DNA into the cell. The virus then takes over the cell and causes it to make more virus parts. After these parts are put together, the cell bursts and the viruses are released to go infect other cells.

**AIDS** (Acquired Immune Deficiency Syndrome) is probably the best-known disease that is caused by a

virus. AIDS is caused by the human immunodeficiency virus (HIV). When a person develops AIDS, his or her immune system struggles to fight off basic infections. AIDS is known as a dangerous disease that kills many people throughout the world, particularly on the continent of Africa. (In fact, it's considered a pandemic). Currently, we have no cures or vaccines for AIDS; however, there are treatments that can slow down how the disease affects the human body.



## Diseases Caused by Bacteria and Protists

**We need to be aware of diseases and how they spread so that we can keep our own bodies healthy.**

Bacteria can cause many diseases that are dangerous to humans. These diseases can oftentimes be treated with antibiotics, which are drugs that kill bacteria. Some diseases caused by bacteria include **cholera, food poisoning, gonorrhea, leprosy, Lyme disease, pneumonia, and tuberculosis**. Many of these diseases are

rare due to antibiotics; however, antibiotic resistance is allowing some of these diseases to make a comeback.

Protists can also cause many diseases that are dangerous to humans, including **African sleeping sickness, malaria, and dysentery**. The protists that cause these diseases

are all examples of **parasites**, or organisms that derive nourishment from the tissues of another organism. In most cases parasites weaken the host but do not kill it altogether. However, many diseases caused by protists will cause death if not treated immediately.



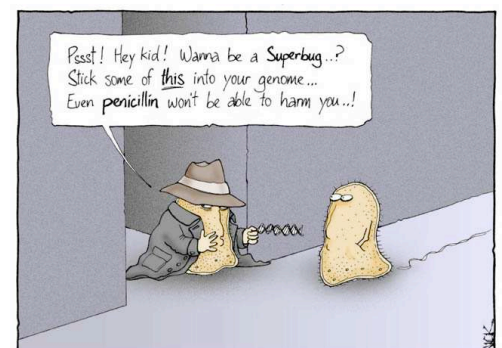
## Antibiotics and Antibiotic Resistance

**Antibiotics** are drugs that kill bacteria or prevent their reproduction. Many companies have started to take antibiotics and create **antimicrobial products**, which are products designed to kill microbes before they can enter your body. We use hand sanitizer or other antimicrobial soaps on a regular basis.

Although these products do

help kill microbes before they can enter our body, some scientists are concerned that the products actually are leading to the problem of **antibiotic resistance**, which occurs when bacteria develop a tolerance to and survive treatment with

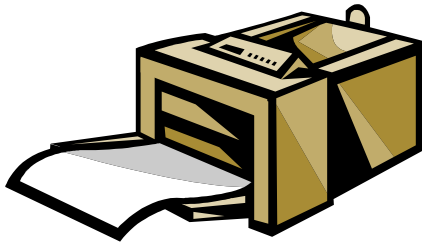
drugs that would have once killed them.



It was on a short-cut through the hospital kitchens that Albert was first approached by a member of the Antibiotic Resistance.

This story can fit 150-200 words.

One benefit of using your newsletter as a promotional tool is that you can reuse content from other marketing materials, such as press releases, market studies, and reports.



Caption describing picture or graphic.

While your main goal of distributing a newsletter might be to sell your product or service, the key to a successful newsletter is making it useful to your readers.

A great way to add useful content to your newsletter is to develop and write your own articles, or include a calendar of upcoming events or a special offer that promotes a new product.

You can also research articles or find "filler" articles by accessing the World Wide Web.

You can write about a variety of topics but try to keep your articles short.

Much of the content you put in your newsletter can also be used for your Web site. Microsoft Publisher offers a simple way to convert your newsletter to a Web publication. So, when you're finished writing your newsletter, convert it to a Web site and post it.

## Inside Story Headline

This story can fit 100-150 words.

The subject matter that appears in newsletters is virtually endless. You can include stories that focus on current technologies or innovations in your field.

You may also want to note business or economic trends, or make predictions

for your customers or clients. If the newsletter is distributed internally, you might comment upon new procedures or improvements to the business. Sales figures or earnings will show how your business is growing.

Some newsletters include a column that is updated every issue, for instance, an advice

column, a book review, a letter from the president, or an editorial. You can also profile new employees or top customers or vendors.

**"To catch the reader's attention, place an interesting sentence or quote from the story here."**

## Inside Story Headline

This story can fit 75-125 words.

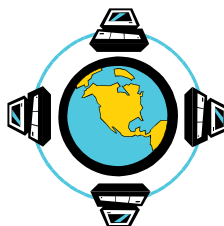
Selecting pictures or graphics is an important part of adding content to your newsletter.

Think about your article and ask yourself if the picture supports or enhances the message you're trying to convey. Avoid selecting images that appear to be out of context.

Microsoft Publisher includes

thousands of clip art images from which you can choose and import into your newsletter. There are also several tools you can use to draw shapes and symbols.

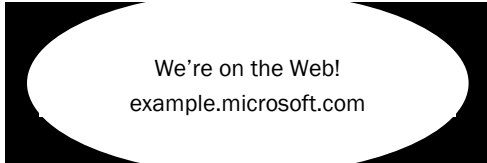
Once you have chosen an image, place it close to the article. Be sure to place the caption of the image near the image.



Caption describing picture or graphic.

Primary Business Address  
Your Address Line 2  
Your Address Line 3  
Your Address Line 4

Phone: 555-555-5555  
Fax: 555-555-5555  
E-mail: someone@example.com



*Your business tag line here.*

This would be a good place to insert a short paragraph about your organization. It might include the purpose of the organization, its mission, founding date, and a brief history. You could also include a brief list of the types of products, services, or programs your organization offers, the geographic area covered (for example, western U.S. or European markets), and a profile of the types of customers or members served.

It would also be useful to include a contact name for readers who want more information about the organization.

## Back Page Story Headline

This story can fit 175-225 words.

If your newsletter is folded and mailed, this story will appear on the back. So, it's a good idea to make it easy to read at a glance.

A question and answer session is a good way to quickly capture the attention of readers. You can either compile questions that you've received since the last edition or you can summarize some generic questions that are frequently asked about your organization.

A listing of names and titles of managers in your organization is a good way to

give your newsletter a personal touch. If your organization is small, you may want to list the names of all employees.

If you have any prices of standard products or ser-

vices, you can include a listing of those here. You may want to refer your readers to any other forms of communication that you've created for your organization.

You can also use this space to remind readers to mark their calendars for a regular event, such as a breakfast meeting for vendors every third Tuesday of the month, or a biannual charity auction. If space is available, this is a good place to insert a clip art image or some other graphic.



**Caption describing picture or graphic.**