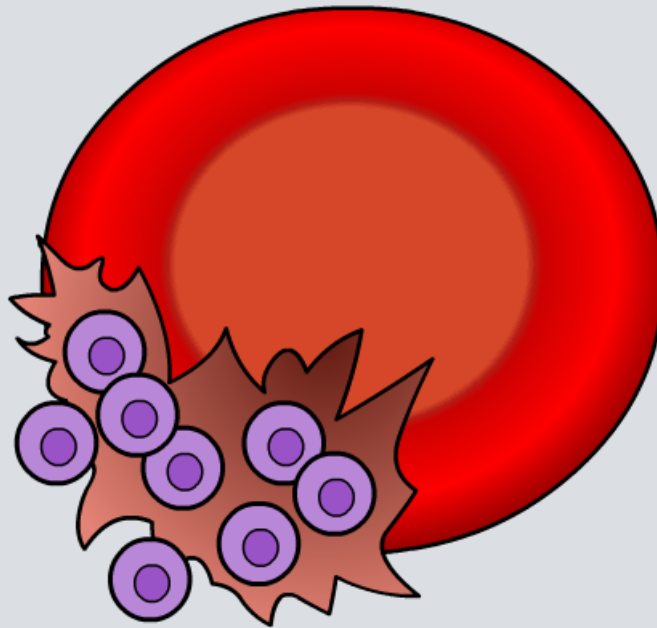


Infectious Disease



An **infectious disease** is a disease resulting from infection of a host organism by a **pathogen**, a disease-causing organism.

There are several different types of pathogen including **bacteria**, **fungi**, **viruses** and **parasites**.

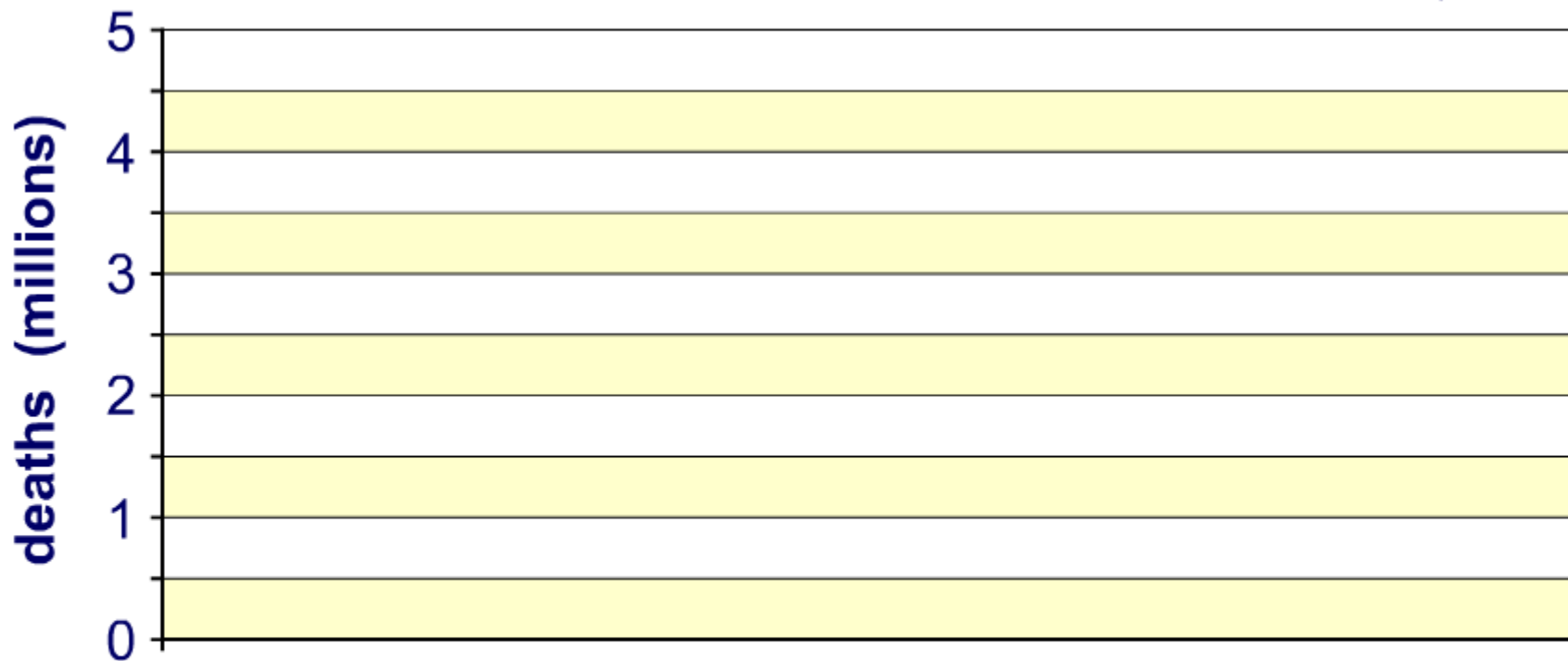
Infectious disease is a major cause of death worldwide. It is estimated that 14.7 million people died in 2002 due to infectious diseases.



Dr Paul B Dean / CDC



Causes of death worldwide from infectious diseases, 1999



hide



Different types of pathogens



How much do you know about pathogens?

1/3

Arrange these organisms in order of cell size

largest



smallest

A

10–100 μm

B

0.5–20 μm

C

20–250 nm

bacteria

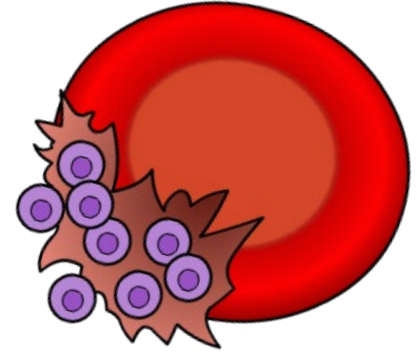
viruses

fungi



Pathogens can cause disease in two main ways:

- **damaging cells** – for example, malarial parasites cause disease symptoms by bursting red blood cells.
- **producing toxins** – **exotoxins** are secreted by a living, normal pathogen, whereas **endotoxins** are released when the pathogen is damaged.



For example, the symptoms of cholera are caused by an exotoxin secreted by the bacteria *Vibrio cholerae*. It increases the secretion of chloride ions into the lumen of the intestines, which can lead to severe diarrhea.



How are diseases transmitted?

Click on a method of transmission
to find out more about how
infectious diseases can be spread.

horizontal

vertical

direct

airborne

waterborne

food

vector

animal



Contributing factor(s)	Example infectious diseases
Human demographics and behavior	dengue fever, sexually-transmitted diseases
Economic development and land use	Lyme disease, malaria, plague, rabies, yellow fever
Microbial adaptation and change	influenza, HIV/AIDS, malaria, <i>S. aureus</i> infections
Breakdown of public health measures	rabies, tuberculosis, cholera, diphtheria
Climate change	malaria, dengue fever, cholera, yellow fever
International travel	malaria, cholera

