

## **What is a virus?**

Viruses are parasitic, microscopic bodies that cannot replicate without a host cell. It is difficult to classify a virus as a living organism because even though they contain either DNA or RNA, they are unable to transcribe and translate their own genetic material without a host cell. In effect, a virus enters a host cell and hijacks the host cell's translation and transcription abilities ordering the host cell to produce the proteins of that virus instead of those of the host cell. They are many times smaller than bacteria, sometimes up to 10 to 20 times smaller. It is estimated that some viruses are 10,000 times smaller than a grain of salt. Viruses are typically considered contagious meaning disease causing. Viruses were first described in the 1930's with the development of the Tobacco Mosaic Virus. Viruses can affect plants, animals and humans. Some examples of viruses are Measles, Polio, HIV, Ebola, H1N1, Influenza A and B, and Corona virus. Antibiotics are not effective in treating viruses.

## **What is a coronavirus?**

Coronaviruses (CoV) are a group of RNA viruses that cause illnesses ranging from the common cold to severe diseases like Middle Eastern Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV). Coronaviruses are named for the crown-like spikes on the surface of the virus. Coronaviruses can affect both animals and humans. Some coronaviruses have been transmitted from animals to humans. Investigations have shown MERS-CoV originated in dromedary camels and SARS-CoV in civet cats. H1N1 or swine flu and H5N1 or bird flu are also examples. Once the jump from animals to humans has occurred, humans can then transmit the virus to other humans. This group of viruses typically affects the upper and lower respiratory system and can be severe. Transmission can be combatted by regular hand washing, covering mouth and nose when coughing or sneezing, thoroughly cooking meat and eggs, avoiding close contact with those showing symptoms, and staying home if you develop symptoms.

## **What is CoVid-19 (Wuhan Virus)?**

CoVid-19 is a strain of coronavirus first identified in Wuhan, Hubei Province, China in 2019. Scientists are not 100% sure what animal this virus originated, but suspect the zoologic factor is a bat. Early symptoms are much like that of the common cold and can show up between 2 to 14 days after exposure. The vast majority of those who develop CoVid-19 recover without any long-lasting effect, but there have been as many as 60 reported deaths in the US and over 3,000 in China. It appears the group most in danger from the disease is older people with existing

health issues. There is no vaccine for CoVid-19, immunities are not yet understood, it is easily transmitted, and treatments are still in the primary stages.

Transmission can be combatted by regular hand washing, covering mouth and nose when coughing or sneezing, avoid touching eyes and mouth, avoiding close contact with those showing symptoms, staying home if you develop symptoms, limiting unnecessary travel, and avoiding large gatherings.

### **What is a pandemic?**

A pandemic is a global outbreak of a disease that spreads in a short period of time. Pandemics occur when a new disease is introduced and

little to no immunity exists against the disease. The World Health Organization (WHO) is typically the organization that declares an outbreak a pandemic.

The Center for Disease Control (CDC) plays a crucial role in this declaration in the US. On March 11, 2020 WHO declared CoVid-19 a pandemic.

In order to control transmission and limit human-to-human exposure to a pandemic virus like CoVid-19, governmental bodies may order the cancelation of activities and closing of facilities as well as creating emergency testing facilities. Wuhan, the epicenter of CoVid-19, was put on quarantine along with travel restrictions in and out of Wuhan initiated. This proved to be an effective measure in slowing the transmission. Aside the obvious impact on human health and strain on the health care system, pandemics can cripple economies by affecting travel, trade, manufacturing, agriculture, retail, and banking and securities. Pandemics can spark panic in societies potentially overwhelming healthcare systems and inadvertently causing runs on food and supplies. It is important to follow the guidelines of the CDC and try to remain calm yet proactive. Early testing, early treatment of identified cases, and early quarantine of those who test positive are important steps in slowing transmission. It is not yet known how long CoVid-19 will remain a threat.

### **Sources**

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