The Global Spread of Human Metapneumovirus (HMPV)



What is Human Metapneumovirus (HMPV)?

Human metapneumovirus (HMPV) is a recently identified respiratory pathogen that was first isolated in the Netherlands in 2001. This virus is classified in the subfamily *Pneumovirinae* and the genus *Metapneumovirus*. Genetically, HMPV shares a close evolutionary relationship with *avian pneumovirus*. Studies have shown that HMPV infections can affect individuals across a wide age range, from as young as 2 months to as old as 87 years.

In subtropical regions, HMPV outbreaks commonly occur during the winter months, with a notable spike in cases observed in China last December. While most HMPV cases are mild and self-limiting, the virus can cause severe respiratory illness, including acute respiratory distress syndrome (ARDS), particularly in high-risk populations such as children, the elderly, and individuals with underlying health conditions. The impact of HMPV disease is most severe in vulnerable groups, as they tend to experience prolonged illness—lasting nearly twice as long as those in younger, healthier adults. Furthermore, high-risk elderly individuals frequently seek medical care for HMPV-associated respiratory infections, underscoring the need for early detection and intervention.

Symptoms
Individuals exposed to HMPV typically manifest symptoms that resemble those associated with influenza, including:

- A dry cough or phlegm
- A runny or stuffy nose
- Fever, ranging from mild to high
- A sore throat

- Shortness of breath
- Easy fatigue
- Loss of appetite

In more severe cases, HMPV virus infection can lead to pneumonia or bronchiolitis

Transmission and Prevention

Human metapneumovirus (HMPV) is transmitted through direct contact with bodily fluids, such as those expelled during coughing or sneezing, and through contact with contaminated surfaces, including door handles and toys.

Several preventive measures have been identified as effective in reducing the spread of the virus, including:

- Wash hands regularly with soap and running water.
- Avoid touching the facial area, especially the eyes, nose and mouth.
- Wearing a mask when in public places or around sick people.
- Covering the mouth and nose with a tissue or inner elbow when coughing or sneezing.
- Ensuring the house has good air ventilation.
- Implementing a healthy lifestyle, including eating nutritious food, regular exercise, and getting enough rest.

Duration

The human metapneumovirus (HMPV) has an incubation period that typically ranges from 3 to 6 days following exposure. The clinical symptoms associated with HMPV infection generally persist for 2 to 5 days; however, in some individuals, particularly those with underlying health conditions or weakened immune systems, symptoms may endure for a longer duration. If HMPV-related symptoms persist for more than 10 days or if signs of severe respiratory distress, such as difficulty breathing or chest pain, manifest, it is imperative to seek immediate medical attention to prevent potential complications associated with HMPV disease.

HMPV Treatment

Currently, there is no specific antiviral drug or vaccine available for HMPV. However, the following measures may help manage the symptoms associated with HMPV:

- Use a humidifier to improve breathing.
- Consume warm water or tea to alleviate throat irritation.
- Get adequate rest to support the recovery of your immune system.
- Take pain relievers, such as acetaminophen or ibuprofen, to reduce fever and pain.
- Utilize symptomatic treatments to ease discomfort, including medications to relieve nasal congestion or coughing.
- Monitor symptoms closely and seek medical attention immediately if they worsen.

Source:

Falsey, A. R., Erdman, D., Anderson, L. J., & Walsh, E. E. (2003). Human Metapneumovirus Infections in Young and Elderly Adults. *The Journal of Infectious Diseases*, *187*(5), 785–790. http://www.jstor.org/stable/30085758

Howard, L. (2023, June 1). *A little-known respiratory virus, HMPV, surged this spring. What you need to know*. UC Davis Health. Retrieved January 6, 2025, from https://health.ucdavis.edu/news/headlines/a-little-known-respiratory-virus-hmpv-surged-this-spring-what-you-need-to-know/2023/06

Huck, B., Neumann-Haefelin, D., Schmitt-Graeff, A., Weckmann, M., Mattes, J., Ehl, S., & Falcone, V. (2007). Human metapneumovirus induces more severe disease and stronger innate immune response in BALB/c mice as compared with respiratory syncytial virus. *Human metapneumovirus induces more severe disease and stronger innate immune response in BALB/c mice as compared with respiratory syncytial virus*, *Respir Res*(8), 6. ://doi.org/10.1186/1465-9921-8-6

Jroundi, I., Mahraoui, C., Benmessaoud, R., Moraleda, C., Tligui, H., Seffar, M., El Kettani, S.E. C., Benjelloun, B. S., Chaacho, S., Almagro, C. M., Ruiz, J., Alonso, P. L., & Bassat, Q. (n.d.). A comparison of human metapneumovirus and respiratory syncytial virus WHO-defined severe pneumonia in Moroccan children. *Epidemiology and Infection*, *144*(2), 516-526. 10.1017/S095026881500151X

Learn About Human Metapneumovirus (hMPV). (n.d.). American Lung Association. Retrieved January 6, 2025, from https://www.lung.org/lung-health-diseases/lung-disease-lookup/human-metapneumovirus-hmpv