

Human Metapneumovirus (HMPV)

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Human Metapneumovirus (HMPV): Understanding the Virus and Its Global Implications

Context:

China is currently facing an **outbreak of Human Metapneumovirus (HMPV)**, primarily affecting children under 14 years old in its northern provinces. While **India has not reported any cases yet**, authorities are closely monitoring the situation to ensure readiness if the virus spreads.

What is Human Metapneumovirus (HMPV)?

HMPV Overview:

- Family: Belongs to the Pneumoviridae family, which includes viruses like respiratory syncytial virus (RSV), measles, and mumps.
- Nature of Illness: Causes respiratory infections similar to the common cold, affecting both the upper and lower respiratory tract.
- Seasonality: Common during winter and early spring.

Discovery and History:

- First Identified: In 2001 by Bernadette G. van den Hoogen in the Netherlands.
- Vulnerable Groups:
 - Children under 5 years old (most severe infections seen in infants 6-12 months old).
 - Elderly individuals and people with weakened immune systems (e.g., HIV-positive
 - individuals).

Prevalence:

• Responsible for 10%-12% of respiratory illnesses in children.

Symptoms of HMPV Infection

HMPV symptoms often resemble those of a common cold but can escalate in severity, especially in vulnerable individuals.

Mild Symptoms:

• Cough

- Runny or blocked nose
- Sore throat
- Fever
- Wheezing

Severe Symptoms and Complications:

- Bronchitis
- Pneumonia
- Acute Respiratory Distress Syndrome (ARDS)
- Flare-ups in asthma or chronic obstructive pulmonary disease (COPD)
- Ear infections (otitis media)

Incubation Period: Symptoms usually appear 3-6 days after exposure to the virus.

How Does HMPV Spread?

Transmission Modes:

- 1. Direct Contact: Through droplets from coughs or sneezes of an infected person.
- 2. Indirect Contact: By touching contaminated surfaces like doorknobs, keyboards, or phones and then touching your face.
- 3. Close Contact: Activities like shaking hands, hugging, or sharing utensils with an infected person can spread the virus.

High-Risk Groups:

- Young Children: Particularly infants and toddlers under 5 years old.
- Elderly Individuals: Those over 65 years are more prone to severe symptoms.
- Immunocompromised Individuals: People undergoing cancer treatments, living with HIV, or having organ transplants.
- **People with Chronic Respiratory Issues:** Those with asthma or COPD are at a higher risk of complications.

Challenges in Managing HMPV

- No Vaccine: Currently, there is no approved vaccine for HMPV.
- No Specific Antiviral Treatment: Unlike some other respiratory illnesses, HMPV does not have targeted antiviral therapies.
- **Diagnosis Gap:** Broader use of **molecular diagnostic tests** has increased awareness, but many cases still go undiagnosed.

How to Prevent HMPV?

Hygiene Practices:

- 1. Wash Hands Frequently: Use soap and water for at least 20 seconds. If unavailable, use alcohol-based hand sanitisers.
- 2. **Respiratory Etiquette:** Cover your mouth and nose with a tissue or elbow when sneezing or coughing.

Avoid Close Contact:

- Maintain distance from individuals showing symptoms.
- Avoid touching your face, especially your eyes, nose, and mouth, after contact with surfaces.

Disinfect Surfaces:

• Regularly clean frequently touched objects, such as phones, toys, and doorknobs.

Wear Masks:

• Use masks when around infected individuals, especially in crowded or enclosed spaces.

Special Caution for Vulnerable Groups:

• Children, the elderly, and those with pre-existing conditions should take extra precautions to avoid exposure.

Is HMPV Dangerous?

Yes, particularly for high-risk groups.

While most cases mimic the common cold, severe infections can lead to:

- Hospitalisation
- Bronchitis or Pneumonia
- Acute Respiratory Distress Syndrome (ARDS)
- Flare-ups of pre-existing conditions like asthma or COPD.

Statistics:

- 5%-16% of pediatric cases result in severe lower respiratory tract infections requiring hospitalisation.
- Adults with underlying health conditions also face significant risks.

What to Do if Infected?

Treatment:

- Supportive Care Only:
 - $\,\circ\,$ Use over-the-counter medications to manage fever, pain, and congestion.
 - $\,\circ\,$ Antibiotics are ineffective since HMPV is a virus.
- Severe Cases: May require oxygen therapy or hospitalisation.

When to Seek Help:

• If symptoms worsen or if individuals in high-risk groups experience difficulty breathing, medical attention is essential.

Conclusion

The outbreak of Human Metapneumovirus (HMPV) in China serves as a wake-up call for global vigilance. **India must remain proactive** by strengthening its healthcare response, promoting hygiene, and protecting vulnerable populations.

With no vaccine or specific treatment available, **prevention through hygiene practices and early intervention** is the most effective strategy against HMPV. By staying informed and cautious, we can minimise the impact of such viral infections.

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