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## 1. Legal Barriers to Indo-US Nuclear Collaboration

### Key American Legal Impediment



### US to remove barriers to civil nuclear cooperation with India

One major hurdle is the 10CFR810 Authorization under the US Atomic Energy Act of 1954. This regulation allows US nuclear vendors to export equipment to countries like India under strict safeguards but prohibits them from manufacturing nuclear equipment or performing design work in these countries. This limitation is a concern for India, which seeks participation in the manufacturing value chain to co-produce nuclear components for planned atomic power projects.

### Indian Legal Impediment

On India's side, the Civil Liability for Nuclear Damage Act, 2010 creates challenges. The Act allocates liability for nuclear accidents to operators and allows them to hold equipment suppliers accountable. This has deterred foreign players like GE-Hitachi, Westinghouse, and Areva (now Orano), who are concerned about potential future liabilities.

### Strategic Prospects for Collaboration

#### iCET and Strengthening Innovation Alliances

During US National Security Advisor Jake Sullivan's visit, discussions centered on addressing these legal barriers under the US-India Initiative on Critical and Emerging Technology (iCET). A breakthrough agreement could enable joint manufacturing of nuclear components for new projects deploying American atomic reactors in India.

#### India's Pitch for Nuclear Manufacturing

India is positioning itself as a viable hub for manufacturing nuclear reactors, particularly Small Modular Reactors (SMRs) with capacities of 30MWe to 300MWe. These reactors are cost-effective and scalable, offering a competitive edge in the global market.

#### Competitive Landscape

### **China's Advancements in SMRs**

China is aggressively pursuing global leadership in the SMR space, leveraging its expertise to engage the Global South diplomatically. Unlike its relatively late entry into large nuclear reactors, Beijing's ambitions in SMRs could disrupt the small reactor industry, much like its dominance in electric vehicles.

### **India's Technological Challenges**

India's civil nuclear program, though experienced in manufacturing 220MWe and larger Pressurized Heavy Water Reactors (PHWRs), faces challenges as global preferences shift toward Light Water Reactors (LWRs). The US, along with Russia and France, leads in LWR technology, making collaboration essential for India to modernize its capabilities.

### **Collaborative Opportunities**

#### **Mutual Benefits for India and the US**

A collaborative approach could benefit both nations. India's technological constraints and the US's high labor costs and protectionist policies make them individually less competitive against China. By combining strengths, they could effectively counter China's dominance and build a robust presence in the global nuclear market.

Relevance: GS Prelims & Mains Paper II; Bilateral Relations

Source: The Hindu

## **2. What is the human meta-pneumovirus?**

### **Introduction**

China's diseases control authority said that it was piloting a monitoring system for pneumonia of unknown origin. The country was already witnessing an upward trend in overall infections as of mid-December, and is expecting to see more respiratory infections in the winter and spring. One of the pathogens that was detected, especially among people under the age of 14, was human metapneumovirus. Subsequently, posts showing crowds of people in what looked like Chinese hospitals appeared on social media along with statements about China declaring an emergency over the virus. So far, there has been no such declaration.

### **What is human metapneumovirus?**

Human metapneumovirus (HMPV) is a respiratory virus that causes mild infections similar to that caused by a common cold. First identified by scientists in 2001, the virus belongs to the Pneumoviridae family, of which respiratory syncytial virus (RSV), measles and mumps are also members. HMPV can cause both upper and lower respiratory tract infections and is generally seen in winter and early spring. Children, the elderly and those with weakened immune systems are more susceptible to the infection and to developing complications from it.

The symptoms of HMPV can resemble those caused by a common cold. They include a cough, runny or blocked nose, sore, throat, fever and wheezing. The estimated incubation period is three to six days. In most people, the illness goes away on its own within a few days, with rest

and supportive care at home. In a few people however, complications such as bronchitis or pneumonia may arise, requiring medical care.

## Symptoms of Human Metapneumovirus



**Runny or stuffy nose.**



**Cough.**



**Shortness of breath.**



**Sore throat.**



**Wheezing.**



**Fever.**



**Rash.**

### How does HMPV spread?

HMPV spreads through contact with an infected person or touching objects that have the virus on them. This can be through secretions from coughs and sneezes; close contact with someone who has the infection by shaking hands, hugging; touching a doorknob or a phone or a keyboard that may be contaminated with the virus and then touching the mouth, nose or eyes.

### How is HMPV treated?

There is no vaccine and no specific antiviral to treat HMPV. Most people require over-the-counter medications to relieve fever and pain, possibly with a decongestant. Antibiotics will not work for HMPV. However, the virus can be prevented. As with most other respiratory viruses, the best way to protect yourself from illness is to wash your hands frequently with

soap and water, avoid close contact with infected persons, avoid touching your face, nose, eyes and mouth and wear a mask if you think you may be infected, so that you can prevent transmitting it to others. People with lung conditions such as asthma or COPD should be extra cautious and protect themselves from infection.

### **What has the Indian govt. said?**

In light of the reports from China, the National Centre for Disease Control (NCDC) under the Union Health Ministry is closely monitoring respiratory and seasonal influenza cases in the country, and is in touch with international agencies. "We will continue to monitor the situation closely, validate information and update accordingly," sources said.

HMPV cases have been confirmed in two infants from Karnataka and one in Ahmedabad, Gujarat. In Chennai too, two children tested positive for the virus. The Union Health Minister J.P. Nadda in a video statement said, "Health experts have clarified that the HMPV is not a new virus. It was first identified in 2001 and it has been circulating in the entire world for many years. HMPV spreads through air, by way of respiration... The health systems and surveillance networks of the country are vigilant and there is no reason to worry."

Relevance: GS Prelims; Science & Technology

Source: The Hindu

## **3. Why Justin Trudeau has said he will resign, and what happens now**

### **Introduction**

#### **JUSTIN TRUDEAU ANNOUNCES RESIGNATION AS CANADA PM**



Justin Trudeau recently announced he would resign as both Prime Minister and leader of Canada's Liberal Party. He has been under pressure to quit for months, amid poor approval ratings and weakened support within his party. The Liberals are predicted to face massive defeat in parliamentary elections later this year.

### **Writing on the wall**

The optimistic political message and youthful charisma of Trudeau, then 44, propelled the Liberals to an unprecedented majority in Parliament in 2015.

By December 2024, his approval rating had plummeted to a record low of 22%, according to polling by the nonprofit Angus Reid Institute. Support for the Liberal Party was down to 16% — which would translate into the worst electoral performance in the party's 157-year history. Trudeau was already serving the second term. No Canadian Prime Minister in the last half century has won a third consecutive term. Incumbents in the post have seemingly run out of steam around the 8-9-year mark in recent years.

### **Domestic discontent**

The discontent against Trudeau was fuelled by economic problems. Overall economic growth in his second term has been slow, unemployment has increased, wages have not kept up with record high inflation, and housing has become increasingly unaffordable.

While inflation has cooled from its 2022 peak, a series of political scandals have hit Trudeau's personal popularity. In 2017, Canada's ethics watchdog pulled him up for accepting gifts including holidays and private helicopter rides.

In 2020, it emerged that Trudeau's family had been paid hundreds of thousands of dollars by WE Charity, to which his government had just awarded a C\$19.5 million contract.

And in 2021, he was criticised for missing Canada's first ever National Day for Truth and Reconciliation to commemorate the lost children and survivors of indigenous schools because he went on a surfing holiday with his family.

### **What next?**

Trudeau will remain PM until his party chooses a replacement. On Monday, he said that the Governor General, representative of the monarch, King Charles III, had accepted his request to prorogue Parliament, suspending all proceedings — but without dissolving the House — until March 24.

This gives the Liberal Party time to choose a new leader, but it is not clear who that might be. Freeland, Transport Minister Anita Anand, and former central banker Mark Carney have been identified as possible contenders.

The election to Parliament must be held by October 2025, but it could be much sooner. The principal opposition Conservative Party may be able to push through a motion of no confidence by May, which would trigger an election. The Conservatives, led by Pierre Poilievre, enjoy a huge 29-point lead over the Liberals, and will likely romp home regardless of who succeeds Trudeau as party leader.

### **View from New Delhi**

India-Canada ties have been in the freezer since September 2023, when Trudeau accused New Delhi of orchestrating the killing of Khalistani separatist Hardeep Singh Nijjar. A change of government does present chances of a thaw.

Poilievre in November even accused Trudeau of "sowing divisions" that led to clashes between Sikh separatists and Hindus in Brampton; however, he too had attended an event in August where pro-Khalistan and anti-India chants were made.

Relevance: GS Prelims & Mains Paper II; Bilateral Relations

Source: Indian Express