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Review Article

Resurgence of COVID-19? Time for Preparedness and Response

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ABSTRACT

A new virus named SARS-CoV-2 emerged in the 21st century, causing a devastating disease named the Corona Virus Disease of 2019 (COVID-19). The World Health Organization (WHO) declared this to be a Public Health Emergency of International Concern (PHEIC) on 30th January 2020 and characterized the outbreak as a pandemic on 11th March 2020. On 5th May 2023, the WHO Emergency Committee on COVID-19 recommended that given the disease was by now well established and ongoing, it no longer fits the definition of a PHEIC.

Since the end of the pandemic, there have been sporadic cases. However, from mid-February 2025, global SARS-CoV-2 activity has been increasing, in countries, areas and territories across the world. The WHO advised all Member States to continue monitoring the situation and applying a risk-based, integrated approach to manage COVID-19.

Since the end of PHEIC in May 2023, countries have adopted diverse approaches to manage future threat of COVID-19, either by integrating COVID-19 activities into existing respiratory disease programmes, or continuing targeted vertical interventions. Having learnt lessons from the COVID-19 pandemic, NITI Aayog in India constituted an Expert Group, which prepared a report on "Future Pandemic Preparedness and Emergency Response – A Framework for Action".

The Member States of the WHO are in the process of preparing a new accord, which would be a complement to other initiatives, including the International Health Regulations (IHR). The World Health Assembly is considering targeted amendments to the IHR. Both the IHR 2005 and the new instrument are expected to play central roles in pandemic prevention, preparedness and response in the future.

KEYWORDS

• Covid-19 • Sars-CoV-2 • Pandemic • Resurgence • Preparedness• Response

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INTRODUCTION

A devastating pandemic that occurred in the 21st century was of the Corona Virus Disease of 2019 (COVID-19), caused by a new emergent of the severe acute respiratory syndrome coronavirus (SARS-CoV). The new virus was named SARS-CoV-2. Cases of novel coronavirus (nCoV) were first detected in China in December 2019.[1] Thailand was the first country to report a case from outside China, in January 2020. By February 2020 the disease had spread to all regions of the WHO.[2] This led the World Health Organization (WHO) to declare a Public Health Emergency of International Concern (PHEIC) on 30th January 2020 and to characterize the outbreak as a pandemic, on 11th March 2020.[1]

The epidemic in India started as imported cases of three students who arrived from Wuhan in China, with the first person testing positive for COVID-19 on 30th January 2020 in Kerala. This was followed by many other cases which included foreign tourists, Indian travelers arriving from abroad, and their contacts. Since then, clusters appeared in multiple states, and subsequently the disease spread all over the country.[3]

CURRENT SITUATION

On 5th May 2023, more than three years into the pandemic, the WHO Emergency Committee on COVID-19 recommended that given the disease was by now well established and ongoing, it no longer fits the definition of a PHEIC,[1] and subsequently, on 30th July 2024 the WHO released an updated list of emerging pathogens, which included COVID-19 as an emerging disease, for global health preparedness for future pandemics.[4]

Since the end of the pandemic, there have been sporadic cases. However, from mid-February 2025, global SARS-CoV-2 activity has been increasing, with the test positivity rate reaching 11% across 73 reporting countries, areas and territories. The WHO advises all Member States to continue monitoring the situation and applying a risk-based, integrated approach to managing COVID-19, along with vaccination for preventing severe disease and death from COVID-19, particularly among risk groups.[5]

In India, the number of cases and deaths that occurred over the periods of pandemic and thereafter, are as follows.[6-8]

- ***During the pandemic*** – 31st January 2020 to 5th May 2023[6]
  - 4,49,65,569 cases
  - 5,31,642 deaths
- ***After the pandemic*** – 6th May 2023 to 31st December 2024[7]
  - 76,096 cases
  - 2,002 deaths
- ***During current resurgence*** – 1st January 2025 to 24 June 2025[8]
  - 4,089 active cases
  - 0 deaths

EPIDEMIOLOGY

COVID-19 is caused by the SARS-CoV-2 coronavirus, which usually spreads via the respiratory route or direct close contact. All ages are susceptible to the disease which can progress to severe form or may even become fatal. However, most patients recover without treatment. People over age 60 years and those with existing medical conditions have a higher risk of getting seriously ill. Risk factors include chronic heart, lung, liver or rheumatological problems; chronic conditions like hypertension, diabetes, obesity, dementia; taking immunosuppressive medication and suffering from immunosuppressive conditions including HIV, cancer and pregnancy. Unvaccinated people also have a higher risk of severe symptoms. COVID-19 vaccines provide strong protection against severe illness and death, but vaccinated people can also contract the infection though they are more likely to have mild or no symptoms.

CLINICAL FEATURES

Symptoms usually begin 5-6 days after exposure and last for 1-14 days. Though the symptoms of COVID-19 may be varied, the most common ones experienced by almost all symptomatic patients are fever, chills and sore throat.

Less common symptoms are:

- *General symptoms:* severe fatigue or tiredness, dizziness, difficulty sleeping, headache, sore eyes, numbness or tingling, loss or change of sense of taste or smell.

- *Respiratory system:* runny or blocked nose, sneezing, hoarse voice, new and persistent cough, tightness in chest or chest pain, shortness of breath.
- Musculoskeletal system: muscle aches, heaviness in arms or legs.
- GI system: loss of appetite, nausea, vomiting, diarrhoea, abdominal pain.

People with the following symptoms should seek immediate medical attention:

- difficulty breathing, especially at rest, or unable to speak in sentences.
- confusion.
- drowsiness or loss of consciousness.
- persistent pain or pressure in the chest
- skin being cold or clammy, or turning pale or bluish in colour.
- loss of speech or movement.

Complications – The consequences of severe COVID-19 include death, respiratory failure, sepsis, thromboembolism, and multiorgan failure, including injury of the heart, liver or kidneys. In rare situations, children can develop a severe inflammatory syndrome a few weeks after infection.

Long COVID – Some people who have had COVID-19, continue to experience symptoms even after recovery. These long-term effects are called long COVID or post COVID-19 condition. Long COVID does not depend on severity of the initial disease or requirement of hospitalization. The most common symptoms associated with long COVID include fatigue, breathlessness and cognitive dysfunction such as confusion, forgetfulness, lack of mental focus or clarity. Long COVID can affect a person's ability to perform daily activities such as work or household chores.

TREATMENT

Most people with COVID-19 have mild illness presenting with upper respiratory tract symptoms and/or fever, without shortness of breath or hypoxia. These cases need home isolation and care. They should be instructed to report to healthcare facility immediately if they experience worsening of symptoms. People who have pre-existing health problems are at higher risk of progressing to severe disease when they have COVID-19 and hence should receive treatment at the earliest.

Moderate and severe disease conditions require oxygen support, anti-inflammatory or immunomodulator therapy, anticoagulants. In rapidly progressing disease, antiviral medication like remdesivir or tocilizumab may be considered. In addition, the severe cases may need respiratory and/or cardiovascular support and management of sepsis if present. Monitoring is essential and should be done by clinical examination, laboratory investigation and/or by serial x-ray.

PREVENTION

Prevention of transmission of infection involves several measures viz. tracing and monitoring of contacts; isolation of suspect and confirmed cases; infection prevention and control at healthcare facility as well as at home; and risk communication to community. Vaccination of susceptible host is important, though COVID vaccine does not provide full protection against the disease but can prevent its severe form and death. People should follow COVID-appropriate behaviour such as avoid crowds and keep a safe distance from others; wear a properly fitted mask; clean hands frequently with alcohol-based hand rub or soap and water; cover mouth and nose with a bent elbow or tissue while coughing or sneezing; dispose used tissues properly. Those who develop symptoms or test positive for COVID-19, must immediately self-isolate themselves and report to a healthcare facility.

PUBLIC HEALTH RESPONSE

Since the end of PHEIC in May 2023, countries have adopted diverse approaches for being prepared to manage future threat of COVID-19, either by integrating COVID-19 activities into existing respiratory disease programmes, or continuing targeted vertical interventions. All countries are implementing routine public health measures for COVID-19 through their surveillance and response systems. A WHO Coronavirus Network (CoViNet) has been established, which aims to bring together surveillance programs and reference laboratories to support enhanced epidemiological monitoring and laboratory assessment of SARS-CoV-2, MERS-CoV and novel coronaviruses of public health importance. Countries are reporting on this integrated respiratory disease surveillance platform, as well as on WHO's Global Influenza

Surveillance and Response System (GISRS), enabling early detection of circulating SARS-CoV-2 variants.

Guidelines for diagnosis, treatment and care for individuals with COVID-19 and post-COVID-19 condition or long COVID have been refined and sustained, and access to these services have been improved. In some countries, updated vaccines are being offered through routine or targeted immunization strategies, often along with vaccines for seasonal influenza and respiratory syncytial virus (RSV). Risk communication to the public and community engagement activities are being undertaken. The WHO continues to support Member States in building and sustaining core capabilities and in collaboration with other key partners.

PREPAREDNESS AND RESPONSE IN INDIA

Having learnt lessons from the COVID-19 pandemic, NITI Aayog in India constituted an Expert Group, which prepared a report on "Future Pandemic Preparedness and Emergency Response – A Framework for Action". The Group recommended action to be taken on four pillars of the Pandemic Preparedness and Emergency Response (PPER) Framework. Some recommendations are as follows.

1. Governance, Legislation, Finance and Management

- Enacting a new Public Health Emergency Act.
- Creating an institutionalised empowered governance mechanism for Public Health Emergencies.
- Constituting a Continuous Monitoring Group.
- Preparing a well-defined standard operative procedure (SOP) manual for rapid response.
- Setting up a special fund for all PPER activities.

2. Data Management, Surveillance and Early Predictive Warning, Forecasting and Modelling

- Creating a well-connected/integrated robust surveillance network
- Establishing a harmonized system for data management
- Building a strong modelling and forecasting network for early prediction of emerging threats.
- Creating a biosecurity network facility for epidemiological study of all priority pathogens and known/ unknown pathogens.

3. Research and Innovation, Manufacturing, Infrastructure, Capacity building/Skilling

- Focused research on priority pathogens to develop countermeasures.
- Development of countermeasures for diagnostics, drugs, vaccines.
- Allocating PPER fund for high-risk research and innovation.
- Setting up an institute for research, development and manufacture of vaccines.
- Scaling manufacturing capacities and logistic supply chains for availability of counter measures.
- Creating Centres of Excellence for skilled human resources in identified gap areas

4. Partnership, community engagement including risk communication, private sector partnerships, and international collaborations

- Setting up of a specialised risk communication unit with pre-approved SOPs and protocols for release and dissemination of information on a regular basis to different stakeholders.
- Developing community engagement SOPs.
- Building strong partnership models at centre, state, district and community level and collaboration with the international organisations.

PANDEMIC PREVENTION, PREPAREDNESS AND RESPONSE ACCORD

In light of the impact of the COVID-19 pandemic, the 194 Member States of the WHO established a process in February 2022, to draft and negotiate a new convention, agreement, or other international instrument, to strengthen pandemic preparedness and response. The new accord could address gaps that have been highlighted by the COVID-19 pandemic and other disease outbreaks, and represent a global commitment to work together to ensure equity

in both access to the tools such as vaccines, personal protective equipment, information and expertise needed to prevent pandemics and access to health care for all people, by promoting political commitment at the highest level.

The new accord would be a complement to other initiatives, including the International Health Regulations (IHR), regarding actions and measures such as equitable sharing of health technologies, information and expertise aimed at pandemic prevention and control. In May 2022, the World Health Assembly agreed to start the process to consider targeted amendments to the IHR. Both the IHR 2005 and the new instrument are expected to play central roles in pandemic prevention, preparedness and response in the future.

CONCLUSION

Responding in the first 100 days of an outbreak is crucial for effective management of an outbreak or epidemic. It is critical to be ready with strategies and countermeasures which can be made available within the first 100 days. With the increase in global SARS-CoV-2 cases from mid-February 2025, all countries need to be prepared in case of future threat that may emerge. India has a robust framework for action on future pandemic preparedness and emergency response, formed by an Expert Group constituted by the NITI Aayog, with which the country is prepared to face any future challenges.

The Member States of the WHO are in the process of preparing a new accord for pandemic control and the World Health Assembly is considering targeted amendments to the International Health Regulations. Both these instruments acting together are expected to play central roles in pandemic prevention, preparedness and response in the future.

REFERENCES

1. WHO. Coronavirus disease (COVID-19) pandemic [Internet] 2023 Aug 9 [Cited 2025 Jun 24]. Available from https://www.who.int/europe/emergencies/situations/covid-19.
2. Banerjee B. ABCDE in COVID-19: How Vital are the Vital Amines? Indian J Comm Dis. 2020;6(2):41-48.
3. Banerjee B. COVID-19 and Beyond: The Way Forward for Public Health in India. Indian J Comm Dis. 2020;6(1):13-20.
4. WHO. Pathogens prioritization: a scientific framework for epidemic and pandemic research preparedness. [Internet] 2024 Jul 30. World Health Organization. [Cited 2025 Jun 24]. Available from https://www.who.int/publications/m/item/pathogens-prioritization-a-scientific-framework-for-epidemic-and-pandemic-research-preparedness.
5. WHO. Disease Outbreak News. COVID-19 - Global Situation. [Internet] 2025 May 28. World Health Organization. [Cited 2025 Jun 24]. Available from https://www.who.int/emergencies/disease-outbreak-news/item/2025-DON572.
6. MoHFW. States/UTs wise Covid-19 Data: 6th May 2023 to 31st December 2024 (till week-52). [Internet] Ministry of Health & Family Welfare, Government of India. [Cited 2025 Jun 24]. Available from https://covid19dashboard.mohfw.gov.in/pdf/abc.pdf
7. MoHFW. States/UTs wise Covid-19 Data: 31st Jan 2020 to 05th May 2023. [Internet] Ministry of Health & Family Welfare, Government of India. [Cited 2025 Jun 24]. Available from https://covid19dashboard.mohfw.gov.in/pdf/def.pdf
8. MoHFW. COVID-19 Dashboard. [Internet] Ministry of Health & Family Welfare, Government of India. [Cited 2025 Jun 24]. Available from https://covid19dashboard.mohfw.gov.in/resource.html
9. WHO. Coronavirus disease (COVID-19). [Internet] 2023 Aug 9. World Health Organization. [Cited 2025 Jun 24]. Available from https://www.who.int/news-room/fact-sheets/detail/coronavirus-disease-(covid-19).
10. AIIMS/ ICMR-COVID-19 National Task Force/ Joint Monitoring Group (Dte.GHS). Ministry of Health & Family Welfare, Government of India. Clinical Guidance for Management of Adult Covid-19 Patients. Revised on 05/01/2023. [Internet] [Cited 2025 Jun 24]. Available from https://covid19dashboard.mohfw.gov.in/pdf/
11. Swarup R, Swaminathan S, Singh S, Sen RK. Future Pandemic Preparedness And Emergency Response: A Framework for Action Report of the Expert Group. August 2024. [Internet] NITI Ayog, Government of India.

[Cited 2025 Jun 24]. Available from https://www.niti.gov.in/sites/default/files/2024-09/Report-of-the-Exper-Group--Future-Pandemic-preparedness-and-emergency-response_0.pdf

12. WHO. Pandemic prevention, preparedness and response accord. Questions and answers. World Health Organization. [Internet] 7 May 2025. World Health Organization. [Cited 2025 Jun 24]. Available from https://www.who.int/news-room/questions-and-answers/item/pandemic-prevention--preparedness-and-response-accord.