

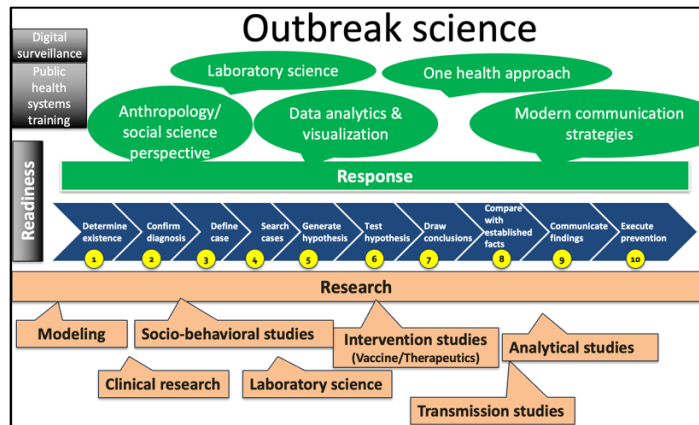
ICMR-NATIONAL INSTITUTE OF EPIDEMIOLOGY, CHENNAI

ICMR CENTRE FOR OUTBREAK SCIENCE (ICOS)

ICMR FELLOWSHIP IN OUTBREAK SCIENCE

About the ICOS fellowship

Infectious diseases, particularly emerging/reemerging viral infections, are a significant public health threat in India. Outbreak science is an inter-disciplinary initiative in public health utilizing various tools like modelling approaches, clinical expertise, laboratory support, statistics, data science and other analytical methods to guide public health response during outbreaks. Data generated during the outbreak can be helpful for decision makers to predict the course of an outbreak, allocation of resources, implement and evaluate interventions.



ICMR-National Institute of Epidemiology (NIE), a permanent premier institute of the Indian Council of Medical Research under the Department of Health Research, Ministry of Health and Family Welfare, Government of India, has been training health professionals in surveillance and outbreak investigations through the Field Epidemiology Training Programmes (FETP) since 2001.

The **ICMR Centre for Outbreak Science (ICOS)** has been established as an ICMR-funded project (2024-26) under the PM-Ayushman Bharat Health Infrastructure Mission (PM-ABHIM) at the ICMR-NIE to support the preparedness, improve the analytical capabilities and guide the decision-makers in public health response. The platform will bring together epidemiologists, clinicians, laboratory scientists, data scientists, modelling experts and scientists from social and behavioural sciences. ICMR will be able to actively participate in the response to outbreaks of national importance and conduct cutting edge research in emerging/re-emerging viral infections.

ICMR scientists are also involved in the response and research during outbreaks/epidemics of national importance as a part of the National Joint Outbreak Response Team (NJORT), as notified by the Government of India. This fellowship has been conceived to build the capacity of ICMR scientists in outbreak science to respond to infectious disease public health threats.

## Selection criteria for the fellowship

**Permanent scientists** at levels **B, C, and D** working in **ICMR institutes** are eligible to apply for the fellowship. Scientists who are already working in the area of infectious diseases or outbreak investigations will be given preference. Publication (in the area of infectious diseases) in peer-reviewed PubMed/Scopus-indexed journals in the last year is desirable.

The applicants will be selected based on qualification, experience and statement of purpose ensuring gender and geographical diversity. Up to 20-25 scientists will be selected for the fellowship per cohort.

## Timeline

Notification of fellowship: 1<sup>st</sup> week September 2024

Close of application: 27 September 2024

Notification of selection: 04 October 2024

Start of Fellowship: 4 November 2024

## Duration

4 November 2024 - 1 October 2025

## Mode of delivery

Hybrid (Onsite contact sessions, online lectures, case studies and simulation exercises)

## Modules

### 1. Outbreak investigation (M1-OBI)

#### Learning objectives

- Describe the steps in outbreak investigation.
- Apply the principles of descriptive and analytical epidemiological methods.
- Use basic and molecular laboratory techniques to understand etiology and transmission pattern in outbreak setting.
- Create a communication strategy for effectively disseminate findings and make recommendations from an outbreak investigation to diverse stakeholders.

### 2. Epidemiologic research methods (M2-ERM)

#### Learning objectives

- Familiarize with key concepts and terminologies related to epidemiological research.
- Understand the principles of epidemiological study designs commonly used in outbreak research.
- Apply appropriate statistical methods to analyze data collected during the research.
- Apply R for statistical analysis for descriptive and analytical epidemiology.
- Design a research protocol.

### 3. Risk assessment for infectious disease public health emergencies (M3-RAI)

#### Learning objectives

- Understand the key components of the International Health Regulations and early warning and response systems (EWAR) including one health surveillance.
- Know the surveillance systems for infectious disease monitoring and response
- Understand the Risk Management Cycle and its application in outbreak response.
- Utilize hazard assessment techniques to identify potential risks in outbreak situations.
- Create a comprehensive risk characterization report for a public health emergency.

### 4. Tools for outbreak science (M4-TOS)

#### Learning objectives

- Understand the role of serosurveys in infectious disease outbreaks.
- Use epidemiology and laboratory principles to design and conduct serosurveys.
- Understand the basic principles of simple compartmental models.
- Understand the modifications of the compartmental models and its application in infectious disease modelling.

Timeline for ICMR fellowship in Outbreak science- Cohort 1				
		Online sessions	Contact sessions	Project
Nov-24	W1		Fellowship Orientation M1-OB1 (Outbreak Investigation)	
	W2	M1-OB1 (Outbreak Investigation) M2-ERM (Epidemiologic Research Methods)		
	W3			
	W4			
Dec-24	W1			
	W2			
	W3			
	W4			
Jan-25	W1	M2-ERM (Epidemiologic Research Methods)	M2-ERM (Epidemiologic Research Methods)	
	W2			
	W3			
	W4			
Feb-25	W1	M2-ERM (Epidemiologic Research Methods)		
	W2			
	W3			
	W4			
Mar-25	W1	M1-OB1 (Outbreak Investigation)	M2-ERM (Epidemiologic Research Methods) M3-RAI (Risk Assessment for Infectious Public Health Emergencies)	
	W2			
	W3			
	W4			
Apr-25	W1	M2-ERM (Epidemiologic Research Methods) M4-TOS (Tools for Outbreak Science)		
	W2			
	W3			
	W4			
May-25	W1	M4-TOS (Tools for Outbreak Science) M4-TOS (Tools for Outbreak Science). M3-RAI (Risk Assessment for Infectious Public Health Emergencies)	M4-TOS (Tools for Outbreak Science)	
	W2			
	W3			
	W4			
Jun-25	W1	M4-TOS (Tools for Outbreak Science)		
	W2			
	W3			
	W4			
Jul-25	W1			
	W2			
	W3			
	W4			
Aug-25	W1			
	W2			
	W3			
	W4			
Sep-25	W1			
	W2			
	W3			
	W4			
			Final Submissions Valedictory	

## Fellowship award criteria

The ICOS Fellowship in Outbreak science offers **three levels of certification** (Level 1-3).

In order to be eligible for **Level 1 certification**, the fellow should attend all the contact sessions, online sessions with a minimum of 80% attendance, complete all the four modules which requires submission of all module assignments. The key deliverables will be assessed based on a scoring rubric and 60% score is mandatory for successful completion of each module.

For achieving **Level 2 certification**, in addition to the level 1 requirement the fellow should be part of an outbreak investigation team and submit the field investigation report to NIE ICOS team.

To achieve **Level 3 certification** the fellow should complete a research project around outbreaks - with approval from the Institutional Human Ethic Committee (Academic) of ICMR-NIE Chennai (as applicable) in addition to the level 2 requirements.

## Support during fellowship

Each fellow will be assigned a mentor from ICMR-NIE during the period of the fellowship. Online mentor-mentee meetings will be scheduled at least once every month. ICOS will also offer study materials and fee for the online courses the fellows will be joining and completing as part of the fellowship curriculum.

The selected fellows will be provided airfare, local travel support, boarding and accommodation during their contact sessions at ICMR-NIE. The fellows will also get support and hand holding for conducting field projects and publishing the project work findings in peer-reviewed journals.

## Application process

The scientists are required to apply through the Google form including the following:

1. A statement of purpose (up to 300 words) for joining the fellowship.
2. A recent, one-page CV.
3. A No Objection Certificate (NOC) from the Director of their respective institutes.



[Click here to apply](#)



[Click here for NOC template](#)

## Contact details

For further details contact: **ICOS Fellowship Coordinator**



[icosicmrnie@gmail.com](mailto:icosicmrnie@gmail.com)



+91-44-26136200 during office hours (Monday to Friday 9.30AM- 5.30PM, except holidays)