Training on Techniques for Zoonotic Disease Diagnosis, Surveillance and Mapping

3 to 7 March 2025
Venue: ICAR-NIVEDI, Bengaluru

Organised by

ICAR - National Institute of Veterinary Epidemiology and Disease Informatics

In collaboration with

National Centre for Disease Control (NCDC)
Directorate of General of Health Services, Ministry of Health and Family Welfare, GoI

Under

National One Health Programme for Prevention & Control of Zoonotic Diseases (NOHPPCZ)

Epidemiology, Surveillance and Mapping of Zoonoses

Zoonotic diseases, transmitted between animals and humans, pose significant global health threats, often leading to outbreaks with severe public health, economic, and environmental impacts. Effective diagnosis, surveillance, and mapping of zoonotic diseases are crucial in mitigating these risks. Early and accurate diagnosis enables timely intervention, reducing disease spread and severity. Surveillance systems monitor disease patterns, providing critical data to predict and prevent outbreaks. Mapping, through geographic information systems (GIS), visualizes disease distribution and identifies high-risk areas, supporting targeted control measures. These tools are indispensable for health professionals, policymakers, and researchers to devise evidence-based strategies, ensure efficient resource allocation, and enhance preparedness. As the interconnectedness of human, animal, and environmental health grows, strengthening these practices through capacity-building and training is vital to protecting public health and fostering global health security.

About the ICAR-NIVEDI

ICAR-National Institute of Veterinary Epidemiology and Disease Informatics (ICAR-NIVEDI) is a pioneering institute working with the mandate of R&D in the field of Veterinary Epidemiology and Disease Informatics. Its role is significant in developing disease models, risk analysis, animal disease forecasting & forewarning, need-based diagnostics, for epidemiological serosurvey for field diagnosis as well as to assess the economic impact of livestock diseases. The institute has developed various technologies and patented few products which are being utilized by different stakeholders in the country. The role of this institute in the eradication of Rinderpest from India and development of National Animal Disease Referral Expert System (NADRES), an interactive software for animal disease forecasting, are noteworthy. The institute has been conducting plethora of training programmes on epidemiology, economic impact, sampling frame, GIS and RS and disease diagnosis. ICAR-NIVEDI has state of art Biosafety Level 2 laboratory which is managed as per the national guidelines for laboratory biosafety and biosecurity practices. ICAR-NIVEDI has successfully conducted number of national and international trainings in the area of epidemiology and disease informatics, economics of animal diseases including zoonoses.

National One Health Programme for Prevention & Control of Zoonotic Diseases

Intersectoral coordination with "One Health Approach" is required for the effective surveillance, prevention and control of existing and newly evolving threats from animal reservoir require strong link between the different sectors. Department of Health & Family Welfare, Ministry of Health and Family Welfare, Govt. of India initiated a new scheme "Strengthening of Intersectoral coordination (ISC) for prevention and control of zoonotic diseases" implemented in 12th Five-year plan during 2012-13 to 2016-17. The programme continued for the next four years i.e 2017-18 till 2020-21 under umbrella scheme of NCDC, Delhi, GoI. In 2021, the programme launched as National One Health Programme for Prevention & Control of Zoonotic Diseases. Accordingly, four regional coordinators have been identified in consultation with experts from the field of zoonotic diseases in those states who can co-ordinate the activities of 3-4 states. Health Department, Veterinary Department and Wildlife Department can undertake the activities envisaged under ISC Programme i.e. surveillance, training of manpower and laboratory strengthening for diagnosis of zoonosis.

In this regard, ICAR-NIVEDI, Bengaluru has been identified as a key institution in the Southern region working in the field of zoonotic diseases (Ex. Leptospirosis, Brucellosis, Anthrax, Rabies, Cysticercosis, Japanese Encephalitis and other viral Zoonotic diseases) is involved in Capacity Building, Surveillance & Diagnosis of zoonotic diseases and serve as regional coordinator for strengthening Intersectoral Coordination between different sectors in the Southern states (Kerala, Karnataka, and Lakshadweep) under Strengthening of Intersectoral Coordination for Prevention and Control of Zoonotic diseases during 2019. This program has been renamed as NOHPPCZ- National One Health programme for Prevention and Control of Zoonotic diseases" w.e.f. April 2021. To achieve the program objectives, ICAR-NIVEDI is organizing this training for regional and state laboratory personnel having a background or work experience in the field of Zoonosis. The design of training is to provide capacity building on Geospatial Epidemiology for Zoonotic Disease Surveillance and Mapping to participants from IDSP units of different states in the country, starting from

Laboratory technicians, District surveillance officers, Microbiologists, Veterinary / Medical officer/ Nodal Officer, IDSP unit/ Consultants from different states, etc. This training is to facilitate and strengthen inter-sectoral (animal and human sector) coordination in one health approach, which is required to make a positive national impact on prevention and control of zoonotic diseases. This training course will refresh and strengthen the personnel/participant skills in the fields of disease surveillance and mapping.

About the Training Programme

The training program is intended to provide in-depth knowledge on epidemiology, surveillance and diagnosis of major zoonotic diseases in animals and humans through expert lectures, demonstration and hands on training on use of pen side/point of care diagnostic tests for major zoonotic diseases. Further, environmental surveillance for AMR and slaughterhouse surveillance strategies for zoonotic diseases will be dealt with. Geographic Information System (GIS) is a system that creates, manages, analyzes, and maps all types of data (ESRI-Environmental Systems Research Institute). GIS has been used virtually in every field including health sector. In health research, GIS can play an important role in surveillance, outbreak investigation, management and analysis of disease related data. John Snow illustrates the power of mapping and geographic systems to respond to the cholera outbreak during 1854 in London, England. The training is intended to provide preliminary insights into the GIS basics, application of GIS in disease mapping, creation of different kinds of maps using health and disease data using open source mapping software. The training provides a fine blend of lectures and hands-on training sessions.

At the end of the training program participants will be,

1. Aware of epidemiology, surveillance and diagnosis of major zoonotic diseases in animals and humans
2. Knowledge about of surveillance methods for zoonotic disease surveillance
3. Aware of basics of GIS and its application in disease surveillance and mapping
4. Able to collect surveillance/disease data through data collection software, and perform disease mapping (dot map and choropleth map)
5. Create buffer zones for the purpose of surveillance and containment etc

Objective of the training programme

- To create knowledge on epidemiology, surveillance and diagnosis of major zoonotic diseases
- Train personnel from veterinary and public health labs and sentinel sites on diagnostic tests for major zoonotic diseases
- To build capacity in basics of data collection software and disease mapping using open source software.

Topics of Practical / Hands on training /Lecture

- Laboratory Biosafety for zoonotic diseases: Principles and Practices
- Expert lectures on surveillance, epidemiology and diagnosis zoonotic diseases
- Hands-on raining on diagnostic tests/assays point of care or Pen-side diagnostic tests for diagnosis of major zoonotic diseases and their interpretation
- Introduction to Data collection software for collection of Surveillance data
- Introduction to GIS and application of GIS in health and Disease Surveillance
- Hands on Training on use of GIS softwares for disease Mapping, Making Point Maps of outbreaks locations and choropleth Maps, creating buffer zones etc.,

Target Participants - Participants from different areas of working in IDSP units in the country, starting from Laboratory technicians, Epidemiologists, Microbiologist, Veterinary/ Medical officer/ District surveillance officer/ Nodal Officer/ Consultants/ IDSP unit from different states, Sentinel sites etc.

Note:
Accommodation and food will be provided during the training period to the nominated candidates from IDSP unit officials by the organizer (ICAR-NIVEDI) and TA/DA, will be provided as per their eligibility.

Nomination should be submitted to email-id:
nivedirciscp@gmail.com on or before **28 February 2025.**
Download the nomination form from below link:
https://docs.google.com/document/d/1mOwo4_q0L8-yxgDSiA7Pv5HqajvFb7UZfQxMZVq8k40/edit?usp=sharing
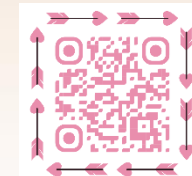
Nomination form link

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