National Institute of Virology

(Indian Council of Medical Research)

WHO Collaborating Centre for Arbovirus & Haemorrhagic Fever Reference & Research, Rapid Diagnosis of Viral Diseases
National Centre for Hepatitis and Influenza
Global Polio Eradication Program of WHO South-East Asia

National Institute of Virology

HISTORY

1952- Established as Virus Research Centre ICMR-RF

1967- Entirely under ICMR

1978- Renamed as National Institute of Virology

1967- Collaborating laboratories of WHO South-East Asia

1969- Regional Centre of WHO (S-E Asia) for arbovirus studies

1974- WHO Collaborating Centre for Arbovirus Reference and Research

1995- WHO Collaborating Centre for Arbovirus & Haemorrhagic Fever Reference & Research, Rapid Diagnosis of Viral Diseases

1995- National Centre for Hepatitis and Influenza

1997- Bangalore field unit: Centre under National Polio Surveillance Program. Global Polio Eradication Program of WHO S-E Asia

The Mandate

Virus Sentinel for the Nation

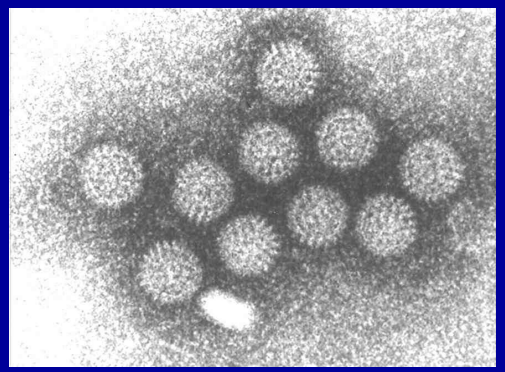
- To study multiple facets of viral diseases of public health importance
- Develop virus detection and diagnostic tools
- Cultivate state-of-art research platforms for vaccine and antivirals
- Public-health awareness of viral diseases
- Human resource development

Thrust Areas

VIRAL DISEASES OF PUBLIC HEALTH IMPORTANCE

- Identification, characterization of etiological agent
- Establishment of surveillance & monitoring systems
- Development of newer & rapid diagnostics
- Molecular epidemiology: Hepatitis, rota,& flaviviruses
- Development of vaccines and immunotherapeutics
- Manpower development **M.Sc. Virology, Ph.D.**

Short Term Training Courses



Diagnostic virology, Animal tissue culture,
Interferon assays, Medical entomology

Priority Areas

Our collective focus on viral diseases

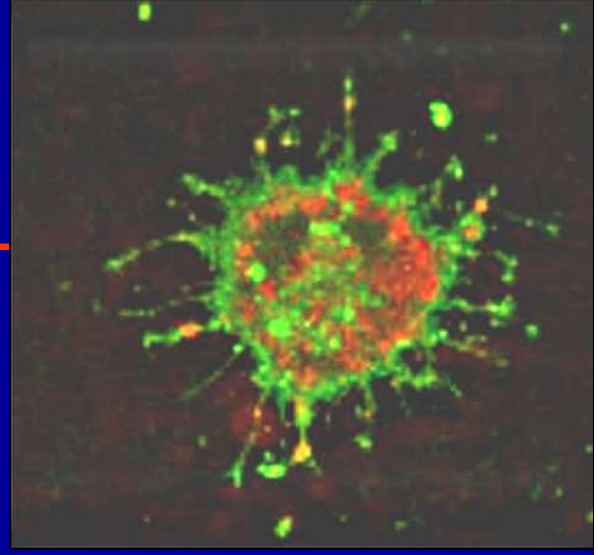
- **Outbreak Investigations**
- **Surveillance & monitoring of viral diseases**
- **Development of newer & rapid diagnostics**
- **Vector Biology**
- **Molecular virology**
- **Vaccines and immunotherapeutics**
- **Virus pathogenesis**
- **Manpower development**

Viruses Under Investigation

- Vector Borne viruses: JE, DEN, WN, CHIK,CHP
- Hepatitis viruses: Hepatitis A, B, C, E
- Rota and other diarrheal viruses
- Influenza, Respiratory Syncytial virus
- Measles.
- Buffalo pox, Rift Valley fever, Rabies
- Polio and other enteric viruses
- Emerging viral diseases

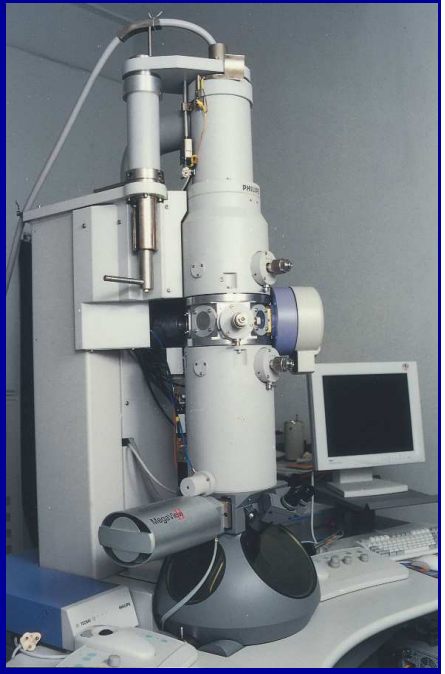
NIV as a National Laboratory

Our mission to serve the nation



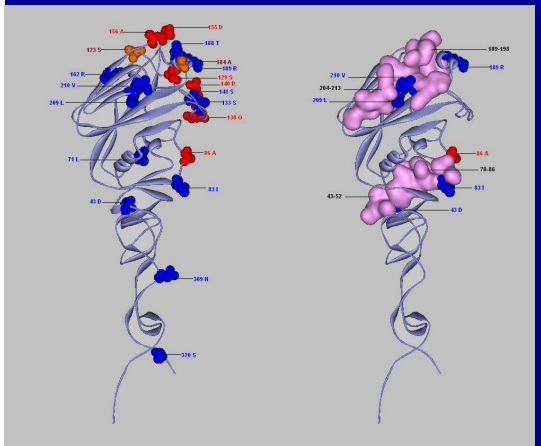
- **Investigated over 300 epidemics of suspected viral aetiology**
- **Conducted extensive serological surveys**
- **Archived collection of 250,000 human, animals and birds serum samples**
- **Isolated 38 arboviruses: 24 new to science**
- **Has 502 virus strains belonging to 12 families**
- **Numerous strains of dengue, influenza and KFD viruses**

Infrastructure



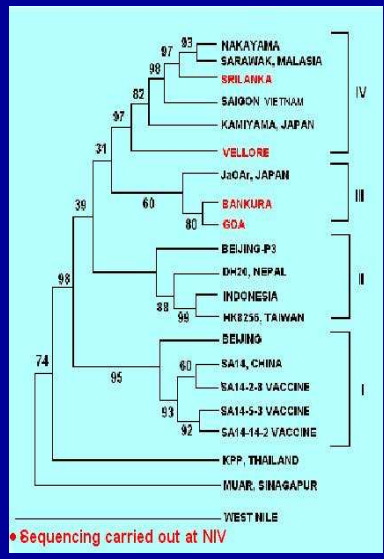
At par with global standards of excellence

- State-of-art modern laboratories
- Sophisticated instrumentation
- Experimental animal facilities
- Modern Library and e-access nodes
- Vaccine and clinical trial platforms
- Strong bioinformatics platform
- Human resource development
- Microbial Containment Complex



Expertise

- Rapid response in epidemic situation
- Basic Virology
  - Isolation, characterization of viruses
  - Morpho-diagnostics by Electron microscopy
- Immunology
  - Hybridoma Technology,
  - Development of serological diagnostics
  - interferon research, cytokine assays
- Molecular biology
  - Molecular epidemiology, PCR diagnostics
  - Cloning, expression of viral proteins
- Vector Biology
  - Identification of insect vectors
  - Implication of vectors and vector containment
  - Insect genetics in relation to viral diseases



Microbial containment Complex

Re - emerging and newly - emerging viral diseases causing devastating outbreaks are noticed in different parts of the world.

To deal with naturally occurring or man-made hazards, proper containment facilities are essential for handling of viruses, developing reagents, vaccines

Microbial Containment Complex has been established by ICMR at Pashan, to enhance capability of the nation for investigations on deadly viral diseases

High containment laboratory: Biosafety level 3

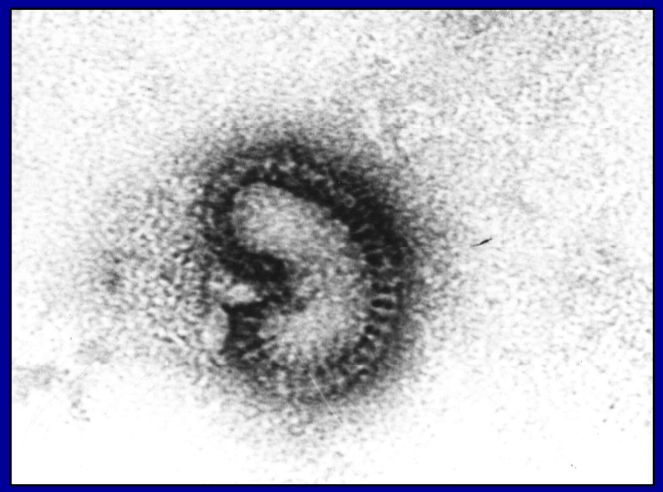
- A state-of-the-art, protocol-based high containment laboratory of bio-safety level 3+, planned and designed in accordance with WHO guidelines has been established.
- BSL-3 lab is essential for clinical, diagnostic, research and teaching facilities, in which work is done with indigenous or exotic agents that may cause serious diseases due to exposure..
- Personnel wearing appropriate personal protective devices conduct experiments in containment modules. The laboratory has special engineering and design features.

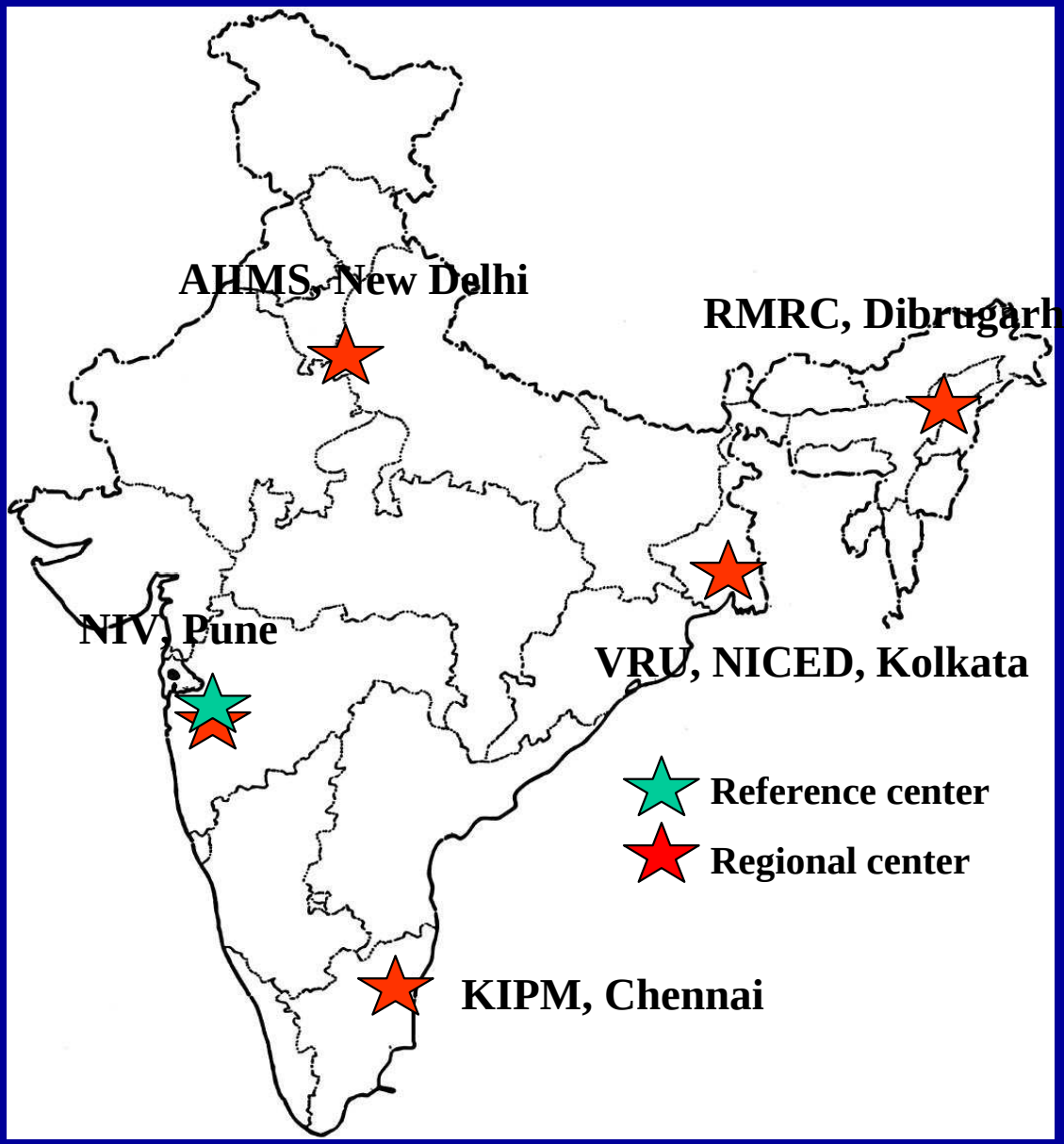
NIV Units

- NIV has Units at
  - Bangalore Karnataka,
  - Gorakhpur, Uttar Pradesh and
  - Alappuzha, Kerala
- Well equipped labs within the Medical College campus
- Good places for carrying out clinical trials.

National Influenza surveillance center

National network






Thank you