It is indeed my pleasure to present the annual report of NIV for the year 2015-16. This year NIV has entered into translational research, a priority mission objective of ICMR. During the year, memorandum of understanding for six technologies has been signed with private companies for production of diagnostic kits and immunotherapeutics. Technology for production and marketing of hepatitis E human ELISA and Crimean Congo hemorrhagic fever sheep/goat IgG ELISA, Kyasanur Forest Disease (KFD) IgM ELISA and Chandipura virus human IgM ELISA technologies have been transferred to Zydus Cadila, Ahmedabad after fulfilling their requirements satisfactorily. More technologies have been proposed to ICMR for transfer to industry. Two patents of public health importance have been filed for new inventions.

Outbreak investigations and diagnosis of referred samples remained a major activity during the year. The year witnessed the outbreak of KFD in Sindhudurg district of Maharashtra, causing a public health alert. NIV investigated the outbreak and confirmed the etiological agent as KFD virus by demonstrating virus isolation from monkey, human and tick samples. NIV organized seminars and workshops to create awareness among health care workers and affected/at risk population in the region.

Investigation of hepatitis E outbreak in Himachal Pradesh has been unique as the NIV team set up a field laboratory and screened blood and water samples providing onsite diagnosis. The source of infection was identified and state health authorities were advised to take necessary measures. NIV also investigated a hepatitis outbreak in Bathinda district of Punjab and confirmed the etiological agents as hepatitis B and hepatitis C viruses by laboratory diagnosis. An outbreak of gastroenteritis, which affected approx. 2000 people in Bhimashankar Sahakari Sakhar Karkhana, Pargaon was also investigated and the etiologic agent identified as Rotavirus. More than 40,000 referred clinical samples from suspected viral infections throughout the country were tested during this reporting period.

Activity of Influenza A (H1N1) pdm09 virus was detected in Maharashtra state. Avian Influenza surveillance showed ring recovery of wild and migratory birds in Pune district. Antibodies to Nipah virus (NiV) were demonstrated in bat population of Assam and West Bengal. Simultaneously, Japanese encephalitis (JE) negative acute encephalitis syndrome cases were found positive for NiV IgM antibodies.

NIV remained the mainstay in the diagnosis of arboviral infections for National Vector Borne Diseases Control Program and other National laboratories engaged in the diagnosis of JE, dengue and chikungunya. During 2015-16, NIV supplied around 7,000 ELISA kits to these agencies in India and over 100 kits to WHO SEAR countries. This year, NIV (BSL-4) became the Essential Facility for poliovirus containment as per the recommendation of national task force for containing wild type strains and vaccine strains of polio type-2.
In addition to diagnostic services and basic and applied research, NIV contributed to human resource development by organizing workshops and trainings for laboratory and health professionals in India and Southeast Asian countries. Resource Centre for VRDL network at NIV provides hands-on training in diverse areas including biosafety, outbreak investigation, serological and molecular diagnosis of viral infections, routinely to scientists and staff of VRDLs across the country. Apart from India, NIV also provides technical expertise and consultation to countries like Nepal, Sri Lanka, Bhutan, Timor Leste, Myanmar, and Bangladesh as part of WHO-SEARO program.

NIV has received a grant from Global Health Security Agency to provide training on Biorisk management in laboratory and hospital settings. This program will also create a network of laboratories for strengthening capacity of laboratory diagnosis of viral hemorrhagic fever and viral respiratory infections. The program has been initiated and training conducted in Delhi, Bangalore and Sindhudurg district (Maharashtra). Post-graduate course in virology, conducted at NIV, affiliated to Savitribai Phule Pune University remains a coveted course of the university. NIV believes in scientific progress of the country and collaborates with researchers from other institutes across the country.

As part of preparedness and emergency response, guidelines for Ministry of Health for diagnosis of suspected Zika virus infection, prepared reagents and provided training to ten identified VRDLs in the country. In addition, three ICMR laboratories have been trained for mosquito surveillance. The algorithm for diagnosis of suspected ZIKV infection has been provided and the VRDLs are testing dengue and Chikungunya negative samples for ZIKV. Samples screened by NIV and all centres were negative for ZIKV. NIV has also provided reagents to these laboratories, in addition to NCDC, New Delhi and WHO SEAR countries.

The three field units of NIV have also shown excellent performance by supporting public health in their respective states. The Bengaluru unit played a major role in the eradication of poliovirus in India and also acts as a sentinel laboratory for measles, mumps and rubella viruses. NIV continues to flourish in the field of publication, with papers in peer reviewed journals including, Nature, New England Journal of Medicine, Proc Natl Acad Sci USA, PLoS Medicine, Emerging Infectious Diseases etc.

As the Director of NIV, I congratulate my fellow scientists for the achievements made during the year and extend all possible support to excel in the coming years. I take this opportunity to thank the administration team of NIV for excellent management of administration and logistic support. I also thank my engineering team for their devoted services in the maintenance of NIV equipments, which are vital for research infrastructure. I extend my sincere gratitude to Dr. Soumya Swaminathan, DG ICMR and Secretary, DHR for her keen interest in NIV activities and wholehearted support. I take the opportunity to thank the officers and staff of ICMR and DHR for their support and cooperation.

( DT Mourya )