

SCIENTIFIC ACHIEVEMENTS

- VRDLs serving as an important platform for diagnosis and surveillance of routine as well as emerging viral infections.
- As on date, 65 VRDLs are functional and have started reporting at Data Mining Centre at National Institute of Epidemiology (NIE), Chennai portal.
- Turnaround time reduced from 7 days to 24 - 48 hrs depending on the test conducted.
- Since January, 2014 till May, 2019, 264 participants have been trained from 65 VRDLs for Serological, Molecular and research studies specific techniques and have entered their case report forms at NIE portal and data was gathered by data mining centre which is summarized in the below table:

Description	Records
Total cases investigated by VRDL Network	857115
Samples collected	882628
Number of tests done	1582387
Number of positive tests	244104
% positivity of cases	25.64%
Number of Diseases clusters investigated	1065

- Sentinel surveillance for Zika viruses (ZIKV) was established through 35 VRDLs.
- Subsequent hands on trainings for Zika have been conducted in various VRDLs. Zika Virus surveillance network has been established with 30 labs consisting of 23 VRDLs across the country.
- During threat of Yellow fever infiltration following 2016 Angola YF outbreak, six VRDLs were immediately trained at NIV, Pune and equipped with diagnostic capacity for Yellow Fever.
- Interim Guidelines for diagnosis of Zika/ CMV and Rubella have been circulated among VRDLs across the country.
- Multicentric Research activities conducted with VRDL network –
 - ❑ Dengue virus serotypes prevailing in different parts of India over a period of three years - 2015-2017,
 - ❑ Geographical distribution of primary and secondary dengue in India -2017 – a cross-sectional multi-centric study (Manuscript accepted in IJMR, 2019).
 - ❑ Prospective study on sequencing of seasonal Influenza Type A – H1N1 isolates during the year 2017 (Manuscript accepted in Indian Journal of Medical Research (IJMR), 2019).

- Six VRDLs have been involved in WHO-MR Labnet to conduct case based surveillance for Measles and Rubella, in line with India's target of measles elimination and Rubella control by 2023. Inclusion of next 12 VRDLs is in pipeline.
- Many VRDLs are sentinel surveillance sites of National Vector Borne Disease Control program (NVBDCP) for testing dengue, chikungunya and JE viruses.
- A sizeable number of VRDLs have been able to establish robust linkages with State IDSP and State public health department, thus increasing outreach of public health programs.
- A total of 58 labs regularly share data with IDSP: (32 daily, 24 weekly and 02 labs monthly)
- Offering Influenza type A & B diagnosis in 45 sites in almost all States/Union Territories
- Microcephaly surveillance of MoH&FW was linked with VRDLs for Zika testing at 55 sites.
- Two new multicentric research studies have been initiated:
 - ❑ Assessment of Neuraminidase Inhibitor susceptibility by detecting H275Y mutation in Influenza A (H1N1) pdm09 virus during 2018 Influenza outbreaks.
 - ❑ Monitoring of dengue and chikungunya viruses circulating in India for changes in the serotypes, genotype and lineages utilizing Viral Research & Diagnostic Laboratories Network.
- Influenza viruses are globally considered as one of the highest threats due to their capacity of changing antigenic structure [due to antigenic drift and antigenic shift]. Keeping this in view, DHR has enabled a total of 44 VRDLs across the country for identifying emerging newer strains. Of these 20 are providing detailed diagnosis for both types A and B influenza viruses whereas 24 are providing diagnosis specifically for H1N1.
- Influenza strain subtyping is routinely done by 20 VRDLs. Data is being fed into WHO FluNet portal every week. Data is also displaying on DHR/ ICMR websites to guide indigenous vaccine manufacturers on choice of yearly seasonal flu vaccine.
- Diagnostic Algorithms for various syndromes: Acute encephalitis syndrome; fever with Rash; Respiratory syndrome; Viral Diarrhoea; Viral Hepatitis with/without Jaundice have been formulated and uploaded on the DHR website in order to maintain the uniformity in diagnosis under various syndromes across the network of VRDLs.
- Thirty VRDLs have been trained for bacterial diagnosis – Scrub typhus and Leptospirosis. Plan for Quality Assurance and Quality Control for both serological and Molecular testing of both bacterial diagnosis has initiated.