

# HEADQUARTERS

---

The Headquarters of the Indian Council of Medical Research is located at Ramalingaswami Bhawan, Ansari Nagar New Delhi.

The Director General is the executive head of the Council. He is assisted by a Financial Adviser and Heads of Scientific and Administration Divisions.

The work assigned to each Division/Unit is described below:

## **Basic Medical Sciences Division**

The Division acts as the administrative division in respect of three Institutes/Centres, namely, Institute of Pathology New Delhi, National Institute of Immunohaematology Mumbai and Regional Medical Research Centre Belgaum.

It also oversees research in the areas of biochemistry, cell and molecular biology, genomics and molecular medicine, pharmacology, traditional medicine and haematology through the funding of extramural research in different medical colleges and research institutes of the country.

## **Epidemiology and Communicable Diseases Division**

The Division acts as the administrative division in respect of seventeen Institutes/Centres, namely, Centre for Research in Medical Entomology Madurai / Enterovirus Research Centre Mumbai / Microbial Containment Complex Pune/ National AIDS Research Institute Pune / National Institute of Cholera & Enteric Diseases Kolkata / National Institute of Epidemiology, Chennai / National Institute of Malaria Research Delhi/ National Institute of Medical Statistics New Delhi / National Institute of Virology Pune / National JALMA Institute for Leprosy and other Mycobacterial Diseases, Agra / Regional Medical Research Centre Bhubaneswar / Regional Medical Research Centre Port Blair / Regional Medical Research Centre for Tribals, Jabalpur / Rajendra Prasad Memorial Research Institute of Medical Sciences Patna / Tuberculosis Research Centre, Chennai/ Tuberculosis Research Centre Unit of Epidemiology, Chennai / Vector Control Research Centre, Puducherry / ICMR Virus Centre Kolkata.

It also oversees research in the areas of bacterial diseases, diarrhoeal diseases, outbreak investigations, other microbial infections, Vector biology, Viral diseases through the funding of extramural research in different medical colleges and research institutes of the country.

## **Non-Communicable Diseases Division**

The Division acts as the administrative division in respect of four Institutes/Centres, namely, Desert Medicine Research Centre Jodhpur / Institute of Cytology & Preventive Oncology NOIDA / National Institute of Occupational Health, Ahmedabad / Regional Medical Research Centre-NE, Dibrugarh.

It also oversees research in the areas of oncology, cardiovascular diseases, diabetes, mental health, neurological sciences, geriatrics, orthopaedics, disability, trauma, oral health, environment and

occupational health, and activities in the Northeast Region through the funding of extramural research in different medical colleges and research institutes of the country. The division also undertakes international collaborative programmes with other countries in these areas.

### **Reproductive Health & Nutrition Division**

The Division acts as the administrative division in respect of five Institutes/Centres, namely, Food Drug & Toxicology Research Centre, Hyderabad / ICMR Genetic Research Centre Mumbai / National Centre for Laboratory Animal Science, Hyderabad / National Institute of Nutrition, Hyderabad / National Institute for Research in Reproductive Health Mumbai, 2 Centres of Advance Research on nutrition and neonatal health, and a network of 31 Human Reproductive Research Centres.

It also oversees research in the areas of fertility regulation, infertility and reproductive disorders, preclinical reproductive and genetic toxicology, osteoporosis, structural biology, maternal health, child health, adolescent reproductive health, contraception, nutrition, malnutrition and infection, degenerative diseases, food biochemistry and food and drug toxicology through the funding of extramural research in different medical colleges and research institutes of the country.

### **Publication and Information Division**

The Division is engaged in the areas of publication (including in Hindi), information and communication including the media liaison, overseeing the Council's library and information network, bioinformatics activity, and scientometrics studies of the Council's research output. The major publications include the monthly Indian Journal of Medical Research, ICMR Bulletin, and the Council's Annual Report. The Bioinformatics Centre under the Division maintains the ICMR website and provides technical support to the activities in the areas of bioinformatics. The Division also maintains two web-based databases viz., IndMed and MedInd that cover most Indian biomedical journals, created through the ICMR-NIC Centre for Biomedical Information.

The Intellectual Property Rights Unit under the Division provides technical, legal and all other support on IPR-related issues in respect of all ICMR supported research (intramural/extramural). The technologies of ICMR are showcased through its publication "Technologies for Commercialization. The Unit is a recognized Centre for internship programme for Women Scientists of the Technology Information Forecasting and Assessment Council (TIFAC) of the Department of Science and Technology, New Delhi.

### **Health Systems Research Cell**

The Cell oversees research aimed at strengthening and improving the Indian Health Systems to tackle the health needs of the people. The current focus areas are - delivery models (public, public-private, NGO) of Reproductive and Child Health services, health insurance in rural areas/urban slums, strengthening of research capacity and effective knowledge utilisation, reduction of gap between health service manpower and service delivery, reduction of gender discrimination and improvement of adolescent health.

### **Translational Research Unit**

The Unit oversees the activities of 25 Translational Research Cells set up in ICMR's Institutes/Centres/Units in terms of periodic identification, development and listing of technologies having the

potential for translation into the national health care programme/clinical practice. It also organises workshops aimed at disseminating scientific knowledge for its wider application and potential for commercialization.

### **Social & Behavioural Research Unit**

The Unit undertakes Task Force studies/projects in the area of social and behavioural research. Some areas covered in the recent past include adolescents' reproductive health & sexuality, women's reproductive health issues, HIV/AIDS and health service research. It also reviews projects intended for international funding. Among the new areas of health concerns identified are i) Delivery and utilisation of Health services and newer technologies; ii) Gender issues and Reproductive Health; iii) Adolescent's behaviour and health; iv) Diseases and Stigma.

### **International Health Division**

The Division facilitates and coordinates international collaboration in biomedical research between India and other countries/international agencies under specific Agreements/Memoranda of Understanding.

International Health is promoted through exchange of scientific information, joint execution of scientific meetings, seminars, workshops and symposia in identified areas of cooperation under mutual agreements signed with international organisations.

It also coordinates the ICMR international fellowship programme for research training and exposure of Indian biomedical scientists in various countries as well as offering opportunities to scientists from developing countries to come and work in Indian institutes/laboratories.

### **Administration Division**

The Division headed by Sr DDG is responsible for the management of all the cadres of the Council, viz., Health Research Scientists, Technical, Administrative and Finance and Accounts, matters relating to the conditions of service of the Council's employees, matters relating to the Official Language, Welfare of the reserved categories, and Coordination of Parliament related work.

### **Finance and Accounts Division**

The Division is responsible for overseeing the control of the finance / budget of the Council, maintenance of accounts and internal audit, preparation of the Council's Annual Receipt and Payment Account, Income and Expenditure Account and Balance Sheet and investment of the Council's funds.

### **Manpower Development Division**

The Division oversees the conduct of a national level examination for selecting candidates for grant of Junior Research Fellowship for undertaking Ph.D in Life Sciences and social sciences including biostatistics in different institutions.

It also selects candidates for the grant of financial assistance to students in the second year of their MD/MS courses; financial assistance to young medical graduates with a proven excellent academic background to pursue post gradation; award of short term visiting fellowship to scientists working in

medical colleges, research institutes, universities etc, to learn advanced research techniques/methods in use in other institutes in India.

### **Medicinal Plant Unit**

The unit is engaged in bringing out series of publications/monographs in the area of medicinal plants viz. Reviews on Indian Medicinal Plants; Quality Standards of Indian Medicinal Plants; Monographs on diseases of public health importance.

Other initiatives include generation of marker phyto-constituents and development of repository, heavy metals and persistent pesticide analysis of medicinal plants and establishing the identity of selected Ayurvedic plant drugs.



# CENTRE FOR RESEARCH IN MEDICAL ENTOMOLOGY

(Established in 1985)

Address : 4-Sarojini Street, Chinna Chokkikulam  
Madurai - 625002, Tamil Nadu, INDIA  
Phone No : 0452-2520565  
FAX : 0452-2530660  
Email : crmeicmr@icmr.org.in

## 1. SCOPE OF ACTIVITIES

1.1 Situated at Madurai in Tamil Nadu, the Centre for Research in Medical Entomology (CRME), conducts research on various medico-entomological disciplines especially control of vector-borne diseases such as Japanese encephalitis, lymphatic filariasis, dengue/chikungunya and malaria.

## 2. THRUST AREAS

2.1 The following are the thrust areas of CRME

- ❖ Surveillance and development of early-warning systems for epidemic outbreaks of vector-borne diseases.
- ❖ Stratification of vector-borne diseases.
- ❖ Survey of haematophagous arthropods.
- ❖ Development of control strategies for vector-borne diseases.
- ❖ Technology transfer to the user agencies.

## 3. INTERNATIONAL RECOGNITION

3.1 CRME has been declared WHO Collaborative Research Centre for research in lymphatic filariasis and dengue.

## 4. HUMAN RESOURCE DEVELOPMENT

4.1 Three months project work to M.Sc., students from various Universities / Institutions.

4.2 Training to Public Health Staff / staff of other institutes on mosquito taxonomy.

## 5. RECOGNITION FOR DOCTORATE/MASTERS BY A UNIVERSITY

5.1 CRME is recognized for Ph.D programme by Madurai Kamaraj University, Madurai.

## 6. MAJOR ACHIEVEMENTS

6.1 Among the major achievement of CRME are the following

- Described four new mosquito species and reported several hitherto undescribed larval and adult stages of mosquito species.

- Developed a simple identification key with illustrations to identify the vectors of JE.
- The development of resistance in a wild population of the filariasis vector *Cx. quinquefasciatus* to *Bacillus sphaericus* (the microbial insecticide) was detected and reported for the first time in India.
- Incrimination of *Ochrotatus niveus* (*Aedes niveus*) as a vector of sub-periodic bancroftian filariasis in the Andaman & Nicobar Islands.
- Detection of JE virus antigen in desiccated vector mosquitoes.
- Studies to show that larval populations of vectors were significantly enhanced by the use of synthetic nitrogenous fertilizers. Application of neem-coated urea was found to decrease the larval population of JE vectors.
- Demonstrated effectively that vector control, when used as an adjunct to Mass Drug Administration (MDA), curtails transmission and prevents the resurgence of LF transmission.
- Detection, isolation and serotyping of dengue virus by using Toxo-IFA system from *Aedes albopictus*, for the first time in Kerala.
- Established presence of chikungunya virus in human sera in Lakshadweep Islands.
- Demonstrated the use of mosquito exuvium as an alternate source of DNA, for the molecular characterization of different vector mosquitoes.



# DESERT MEDICINE RESEARCH CENTRE

(Established in 1984)

Address : Pali Road, Jodhpur - 342005, Rajasthan  
INDIA  
Phone : 91-291-2722403  
FAX : 91-291-2720618  
E-mail : [director@dmrcjodhpur.org](mailto:director@dmrcjodhpur.org)  
Website : [www.dmrcjodhpur.org](http://www.dmrcjodhpur.org)

## 1. SCOPE OF ACTIVITIES

1.1 Situated at Jodhpur in Rajasthan, the Desert Medicine Research Centre (DMRC) conducts research on Vector-borne diseases, Infectious diseases & Non-communicable diseases, human nutrition and associated morbidities/diseases and Medicinal and Insecticidal plants covering conventional clinical, epidemiological, operational and laboratory aspects.

## 2. THRUST AREAS

2.1 The following are the thrust areas of DMRC

- ❖ Study maintenance mechanism of dengue virus in nature, determine regional risk factors of Dengue & DHF and develop surveillance design capable of forecasting impending epidemic situations for their prevention and management in Rajasthan
- ❖ Study vector bionomics and transmission dynamics of desert malaria, identifying local risk factors to develop a strategic action plan for its prevention and control
- ❖ Studies on tuberculosis, HIV and other prevalent infectious diseases for the development of improved diagnostic tools as well as intervention strategies
- ❖ Study epidemiology of non-communicable diseases, identify local risk factors and demonstrate intervention measures for their effectiveness in desert population
- ❖ Study magnitude and distribution of nutritional deficiencies and develop locally sustainable intervention programme for their management
- ❖ To undertake longitudinal studies for estimation of burden of communicable and non-communicable diseases and their transition across time and space for policy planning
- ❖ Studies on human genetics as well as other agents for diseases with a genetic component as a major factor in the context of stressful environmental conditions/adaptations
- ❖ Studies on Health Care Delivery aimed at the development of affordable, effective and sustainable modules for improvement of service delivery by healthcare providers in desert region
- ❖ Inventorization, distribution, biochemical analysis of useful medicinal plants; study of desert plants as alternative remedies; isolation of ingredients and the possible role of desert plants as anti-infective agents/insecticides.

### 3. INTERNATIONAL RECOGNITION

Nil

### 4. HUMAN RESOURCE DEVELOPMENT

4.1 The Centre organises training courses aimed at strengthening scientific and technical expertise of state/ local health agencies for their use in National Vector Borne Disease Control Programme in Rajasthan through research communications & training to Medical Officers & Technicians.

4.2 The Centre also runs summer training programmes. Students from various colleges, during their post-graduate courses in microbiology and biotechnology undergo training in microbiological, biochemical, molecular, virological and entomological aspects. Training is also imparted in software/hardware to B. Tech. & MCA students.

### 5. RECOGNITION FOR DOCTORATE/MASTERS BY A UNIVERSITY

5.1 The centre has been recognized by JNV University, Jodhpur for Ph. D. programmes. Some of the scientists have been recognized for supervising Ph. D. students.

### 6. MAJOR ACHIVEMENTS

6.1 Among the major achievement of DMRC are the following

- Established through Baseline and subsequent rapid drought surveys in the region that short and long-term malnutrition, anemia and diet deficient in calories, Vitamin-A and Vitamin-B complex were the common prevalent problems.
- Demonstrated that a camp approach was useful in tackling the Vitamin-A deficiency.
- Developed expertise, which proved useful for National Guinea-worm Eradication Programme in Rajasthan.
- Explained the mechanism of dengue virus retention in nature through demonstration of Trans-Ovarial Transmission (TOT) of dengue virus in *Aedes aegypti* up to seven generation under laboratory conditions.
- Contributed to better understanding of the dynamics of desert malaria.
- Developed a surveillance design capable of forecasting impending epidemic situations of malaria & dengue in Rajasthan to help in prevention and management.
- Demonstrated the utility, feasibility and affordability of wet-drilling as well as use of face masks for prevention of silicosis in sand stone quarry workers.
- Prepared a compendium on indigenous plant medicines from tribal areas of Rajasthan.
- Investigated opium addiction associated susceptibility to pulmonary tuberculosis, problem of silico-tuberculosis in stone quarry workers, nutritional deficiencies and associated morbidities.





# ENTEROVIRUS RESEARCH CENTRE

(Established in 1981)

Address : Enterovirus Research Centre, Haffkine Institute Campus, Acharya Donde Marg, Parel, Mumbai 400 012 Maharashtra INDIA  
Phone : 91 22 2413 4130, 91 22 2413 5209  
Fax No : 91 22 2415 6484  
Email : [erc@bom3.vsnl.net.in](mailto:erc@bom3.vsnl.net.in)

## 1. SCOPE OF ACTIVITIES

1.1 Situated at Mumbai in Maharashtra the Enterovirus Research Centre (ERC) conducts research on diseases caused by Enteroviruses, especially paralytic poliomyelitis, acute flaccid paralysis, acute hemorrhagic conjunctivitis, aseptic meningitis/ encephalitis and acute gastroenteritis caused by enteric viruses such as Rotavirus, Norovirus and enteroviruses.

## 2. THRUST AREAS

2.1 The following are the thrust areas of ERC

- ❖ Epidemiology of poliomyelitis leading to understanding of the virus transmission patterns for development of policies and strategies for disease control and eradication.
- ❖ Studies on poliomyelitis vaccines such as immunization schedules, vaccination campaigns, evaluation and improvements of vaccine delivery systems.
- ❖ Assistance to the Global Polio Eradication Program through laboratory support for disease diagnosis, understanding disease transmission by molecular epidemiology studies, evaluation of program progress, designing, testing and validating newer assays, participating in introduction of newer vaccine formulations and contributions to national policy on polio eradication.

## 3. INTERNATIONAL RECOGNITION

3.1 ERC is a part of the WHO network of 146 polio laboratories worldwide.

3.2 ERC based on its contribution to the Polio Eradication Programme, is also a WHO recognised Global Specialized Laboratory for Polio (GSL) - the only laboratory, among the seven laboratories so recognized, outside the developed world.

3.3 ERC is accredited by the WHO for poliovirus investigations.

## 4. HUMAN RESOURCE DEVELOPMENT

4.1 ERC conducts hands-on training workshops for WHO Polio Network Laboratories of Southeast Asia annually with a focus on laboratory bio-safety, cell culture, virus culture and newer molecular diagnostic assays. The Centre offers ad hoc training in these subjects.

## 5. RECOGNITION FOR DOCTORATE/MASTERS BY A UNIVERSITY

5.1 ERC is recognized by the University of Mumbai for M. Sc., and Ph. D degrees in Microbiology.

## 6. MAJOR ACHIEVEMENTS

6.1 Among the major achievement of ERC are the following

- Introduction of Oral Polio Vaccine (OPV) in India.
- Generation of epidemiological data on Polio for Mumbai for over 50 years.
- Nucleotide sequencing of poliovirus RNA (Molecular epidemiology of wild poliovirus) has provided accurate information of virus transmission pathways and guided polio immunization activities in the country since year 2001.
- Established environmental sewage samples testing as a surveillance activity supplementing AFP surveillance to detect wild poliovirus circulation in slums in Mumbai.
- Provided unequivocal data confirming wild poliovirus exportation from India to China (1999), neighboring Bangladesh (2006), Nepal (2005 onwards) and Angola (2005 onwards). Also proved that the wild poliovirus importation in Indonesia was from Nigeria via Saudi Arabia and not from India.
- Designing, development and evaluation of new testing algorithm for reducing time for reporting wild poliovirus detection in AFP cases resulted in reducing reporting time from 28 days to 14 days. The test algorithm has now been globally implemented.
- Evaluation of immunogenicity of monovalent, bi-valent and trivalent OPV for introduction of new polio vaccines for polio eradication. The trials, having a global significance, were conducted by the WHO in India with ERC as its laboratory partner.
- Serosurvey of poliovirus antibodies in Moradabad district UP that highlighted the risks of wild poliovirus 3 and VDPV poliovirus 2 in UP and Bihar.
- Detection and analysis of vaccine derived polioviruses responsible an outbreak of polio 1 VDPV in Indonesia in 2005.
- Detection of VDPVs (poliovirus 1 and poliovirus 2, one case each) in India in 2009.
- Reported Coxsackievirus A24v as the etiological agent of an epidemic of AHC in Mumbai in 2007.
- Reported New Enterovirus 71 genotype (genotype D) from India.



## GENETIC RESEARCH CENTRE

(Established in 1986)

Address : Jehangir Merwanji Street, Parel,  
Mumbai-400012  
Phone : 022-24192002  
Fax : 022-24139412  
Email : dirirr@vsnl.com  
Website : www.nirrh.res.in

### 1. SCOPE OF ACTIVITIES

1.1 Situated at Mumbai in Maharashtra, the Genetic Research Centre (GRC) is ICMR's only centre which offers prenatal diagnosis for mental retardation, birth defects, thalassaemia and reproductive loss.

### 2. THRUST AREAS

2.1 The following are the thrust areas of GRC

- ❖ Chromosomal basis of reproductive loss and identifying subtle chromosomal translocations using M-FISH.
- ❖ Molecular basis of birth defects with emphasis on MTHFR gene polymorphisms
- ❖ Pre implantation genetic diagnosis for aneuploidy screening.
- ❖ Molecular characterization of genetic syndromes

### 3. INTERNATIONAL RECOGNITION

Nil

### 4. HUMAN RESOURCE DEVELOPMENT

4.1 The center organizes workshops on Preimplantation Genetic Diagnosis and participants are trained on basic cytomolecular techniques like karyotyping, FISH, Preimplantation genetics techniques includes embryo collection, biopsy, fixing onto slides and FISH on blastomere and single cell PCR on blastomere for detecting single gene disorders.

4.2 Summer trainees are also trained on molecular and cytomolecular aspect of genetic disease diagnosis involving FISH, karyotyping, PCR in the ongoing projects of the center.

### 5. MAJOR ACHIEVEMENTS

5.1 Among the major achievements of GRC are the following

- Pioneered technologies like TFISH, MFISH, Sperm FISH and use of whole chromosome paints to identify unbalanced cryptic chromosomal rearrangements as a cause of recurrent spontaneous abortion.
- Screening for 22q micro deletion to ascertain its role in congenital heart diseases and to offer this test for prenatal diagnosis.

- ELISA for HbA2 for detection of ? Thalassemia in rural areas.
- Evaluated sex-reversed individuals using evidence from such rare disorders dissecting important events in sex determination.
- Immunocytochemical test for diagnosis of Fragile X syndrome.



## ICMR VIRUS UNIT KOLKATA

(Established in 1989)

Address : GB 4, 1st Floor, ID & BG Hospital Campus,  
57, Dr. S.C. Banerjee Road, Beliaghata,  
Kolkata 700010 West Bengal INDIA

Phone : 91 33 2353 7424-25, 2363 2515

Fax : 91 33 2353 7142

### 1. SCOPE OF ACTIVITIES

1.1 Situated at Kolkata in West Bengal, the ICMR Virus Unit conducts research on Viral Diseases viz. Hepatitis, Dengue, Japanese Encephalitis, Chikungunya virus and opportunistic infections among HIV seropositive patients from eastern India.

### 2. THRUST AREAS

2.1 The following are the thrust areas of the ICMR Virus Unit

- ❖ Studying the virological basis of chronic hepatitis B in humans, encompassing diagnosis, molecular epidemiology, pathogenesis and molecular characterization.
- ❖ Multiple viral infections and characterization of occult HBV infection in relation to safety of blood donation.
- ❖ Dengue, Japanese Encephalitis, Chikungunya virus: Laboratory-based surveillance of outbreaks and cases in the selected area; Hospital-based surveillance of cases in the selected divisions of state health services; Seroepidemiological surveys in the selected communities for infection & attack rates; Molecular characterization of the presently circulated strain; Sample surveys for the detection of CHIK JE and Dengue infections during and following the outbreak of the disease in the state and determination of the seasonal fluctuations of the cases.
- ❖ Opportunistic infections among HIV seropositive patients from eastern India: Collection of data on clinical, epidemiological, microbiological and virological information on opportunistic infections among the AIDS patients in West Bengal with a view to establish a database.

### 3. INTERNATIONAL RECOGNITION

3.1 The Virus Unit is a Collaborative Centre for the PDVI project.

### 4. HUMAN RESOURCE DEVELOPMENT

4.1 The scientists of the Unit are supervising the work of students working for their Ph.D from different Universities.

## **5. RECOGNITION FOR DOCTORATE//MASTERS BY A UNIVERSITY**

5.1 The scientists of the Unit are recognised supervisors of the following Universities -

- o University of Calcutta
- o Jadavpur University

## **6. MAJOR ACHIEVEMENTS**

6.1 Among the major achievement of the ICMR Virus Unit are the following

- Reporting a significant increase in the prevalence of HBV infection among the blood donors of West Bengal in the year 2005 over 2004.
- Detection of 1 in 5 HBsAg-ve/ anti-HBc+ve blood donors to have occult HBV infection, with possibility of transmission of hepatitis B in recipients of blood components derived from them.
- Collection of evidence of Horizontal transmission of HBV vaccine escape mutant G145R of in the family.
- In addition to genotypes A & D prevalent in different parts of India, identified genotype C (Southeast Asian sub genotype Cs) in one fifth of the Eastern Indian patients.
- HBV/C in urban population higher than in rural population (20% vs 6.7%).
- Indicated through molecular evolutionary analysis possible recent introduction of HBV/Cs from Southeast Asia through overland drug Trafficking routes via Manipur.
- Showed that male gender, high ALT, high HBV DNA levels, presence of 1762T/1764A mutations and HBeAg positivity are the predicators of progressive HBV associated liver disease in our population.
- Showed that among the Dengue virus genotypes, DEN-1 found to be most prevalent in the study area followed by DEN 4, DEN 2 and DEN



# INSTITUTE OF CYTOLOGY AND PREVENTIVE ONCOLOGY

(Established in 1979)

Address : I-7, Sector 39, Near Degree College,  
NOIDA 201301 Uttar Pradesh INDIA  
Phone : (0120) 2579471-72, 2500455-56  
Fax : (0120) 2579473, Telefax: (0120) 2578838  
Email : [directoricpo@icmr.org.in](mailto:directoricpo@icmr.org.in)  
Website : [www.icpo.org.in](http://www.icpo.org.in)

## 1. SCOPE OF ACTIVITIES

2.1 Situated at NOIDA in Uttar Pradesh, the Institute of Cytology and Preventive Oncology (ICPO) conducts research on common cancers prevalent in India.

## 2. THRUST AREAS

2.1 The following are the thrust areas of ICPO

### Cervical Cancer

- ❖ Early detection of cervical cancer, HPV programmes and development of low-cost screening tests, Genetic alteration and Biomarkers studies.

### Breast Cancer

- ❖ Screening of breast lumps, multidisciplinary study for risk factors, and role of BRCA1 and BRCA2 genes.

### New Areas

- ❖ Tobacco related cancers; HPV induced molecular pathogenesis of oral cancer, Oesophageal cancer, Liver cancer, ovarian cancer, gall bladder cancer and lung cancer.

## 3. INTERNATIONAL RECOGNITION

3.1 ICPO is a declared WHO Collaborating Centre for Research & Training in Cytology and HPV Vaccine.

3.2 Member International Union against Cancer (UICC).

## 4. HUMAN RESOURCE DEVELOPMENT

4.1 The Institute has been engaged in HRD activities in the form of in-service training, summer training, MSc. project dissertation, Ph.D and MD/MS/DM/DNB programmes. The training is imparted in the field of basic sciences including molecular genetics and molecular oncology, cytology and biostatistics / epidemiology.

## 5. MAJOR ACHIEVEMENTS

5.1 Among the major achievement of ICPO are the following

- National Referral centre for HPV and cervical cancer screening.

- Developed a simple magnified visual device with light source for an easy inspection of cervix in the field.
- First to establish that in India HPV prevalence in cervical cancer is the highest (98%) and HPV 16 is the type exclusively high (~ 90%).
- Based on a 12 year follow-up study of 1100 dysplasia cases along with controls demonstrated that more than 70% of those progressed to carcinoma were positive for high-risk HPV type 16/18.
- Established that women with high risk HPV and consummation of marriage under 18 years led to 22 fold increase in the risk of cervical cancer.
- Developed cost effective molecular methods for screening and typing "high-risk"HPVs.
- Identified a novel tumour suppressor gene site (D5S406 locus) on chromosome # 5 in precancerous and cancerous lesions of uterine cervix.





# INSTITUTE OF PATHOLOGY

(Established in 1980)

Address : Safdarjang Hospital Campus,  
Post Box 4909, New Delhi 110029 INDIA  
Phone : 011-26198402-10  
Fax : 011-26198401  
Email : sunita\_saxena@yahoo.com,  
saxenas@icmr.org.in,  
Website : instpath.gov.in

## 1. SCOPE OF ACTIVITIES

1.1 Situated at New Delhi, the Institute of Pathology (IOP) conducts research on various cancers of national importance (Breast Cancer, Prostate Cancer, Urinary bladder cancer, Hematopoietic-Lymphoid malignancies and Neurological cancers), Leishmaniasis, Chlamydial infection, Environmental toxicology and Adult stem cell biology. The major thrust is on basic as well as translational research leading to development of Vaccines for prevention and Biomarkers for screening, diagnosis, prognosis and prediction of drug response/resistance for various diseases.

## 2. THRUST AREAS

2.1 The following are the thrust areas of IOP

- ❖ Tumor Biology (breast cancer, genitourinary malignancies, lymphoma), Infectious diseases (Chlamydia, Leishmania), Stem Cell Biology and Environmental Toxicology.
- ❖ Genetic susceptibility for various familial and non familial tumors, predictive and prognostic biomarkers, molecular pathology, molecular functional pathways and drug targets.
- ❖ Investigation of the gene-environmental link responsible for very high incidence of several malignancies, especially those associated with tobacco and pesticide (Oral, Esophageal, Gastric, Lung and Breast cancers) in North Eastern states in India,
- ❖ Studies on Chlamydia infection on genital infection and coronary artery disease, including study on role of chlamydial heat shock protein in pathogenesis of genital tract infection in women.
- ❖ Understanding the process of in vitro differentiation of Leishmania donovani.
- ❖ Studies on role of environmental toxicants especially heavy metal in cases of miscarriage.
- ❖ Studies on utility of a patented synthetic thermo-reversible hydrogel polymer as supportive matrix towards the development of 3-D composite skin for application in wound healing and other dermatological disorders.

## 3. INTERNATIONAL RECOGNITION

Nil

#### **4. HUMAN RESOURCE DEVELOPMENT**

- 4.1 The Institute lays a lot of emphasis on Human Resource Development and is actively engaged in organizing training courses as well as conducting PhD and DNB programmes.
- 4.2 The Institute conducts one and a half year of Pre PhD course work as a prerequisite for registration to PhD.
- 4.3 The Post Graduate level training programme, i.e. Diplomate National Board (DNB) in the specialty of Pathology is being continued at the Institute since 1992.

#### **5. RECOGNITION FOR DOCTORATE/MASTERS BY A UNIVERSITY**

- 5.1 The Institute is recognised as an off Campus centre for Doctoral Programme by BITS- Pilani since 1993. Under the programme, faculty members of IOP are recognized as independent guides. Under the Doctoral Programme, IOP is also recognized by Jiwaji University, Gwalior and Guru Gobind Singh Indraprastha University (GGSIP) Delhi.

#### **6. MAJOR ACHIEVEMENTS**

- 6.1 Among the major achievement of IOP are the following
  - Identification of high risk alleles- CYP17A2, VDR Poly A L allele and >20CAG repeats in AR gene for breast cancer in young women and Androgen receptor as independent predictive biomarker for response to neoadjuvant chemotherapy in locally advanced breast cancer patients.
  - Establishment of cell line from primary breast cancer in young woman as an important tool to study molecular carcinogenesis and develop new therapeutic strategies.
  - Establishment of in vitro model of cultured autologous bladder cancer cells for In vitro cytotoxicity assay to select the drug and tailor the dose for individualization of treatment.
  - Gene expression and genome-wide copy number analysis to identify genetic risk factors for high incidence and familial association of esophageal cancer in North east region in India.
  - Functional genomic studies of virulence related genes in Leishmania- First identification of centrin gene of Leishmania.
  - Genes associated with drug resistance in Kala-azar.
  - Developed Diagnostics for Kala-azar (KA) and PKDL.
  - PKDL Immunobiology
  - Development of indigenous diagnostic assays (serovar and species specific) for Chlamydia trachomatis
  - Identification of biomarkers for prognosis of women at risk of developing a sequelae to chlamydial infection.
  - Identification of proteins acting as potential candidates for vaccine development.
  - Biomarkers for a risk of developing Coronary Artery Disease due to C. pneumoniae infection.



# NATIONAL AIDS RESEARCH INSTITUTE

(Established in 1992)

Address : G-73, Bhosari Industrial Estate, Bhosari,  
Pune 411026 Maharashtra INDIA  
Phone : (020) 2712 1280, 2712 1342, 27121343  
Fax : (020) 2712 1071  
Email : pnari@blicmr@sancharnet.in  
pblicmr@sancharnet.in, nari@nariindia.org  
Website : www.nari-icmr.res.in

## 1. SCOPE OF ACTIVITIES

- 1.1 Situated at Pune in Maharashtra, the National AIDS Research Institute (NARI) conducts research on HIV prevention, care and support including anti-retroviral treatment and Biology of HIV infection.
- 1.2 NARI, as part of the National AIDS Control Programme is also involved in monitoring, evaluation and quality control.

## 2. THRUST AREAS

2.1 The following are the thrust areas of NARI

- ❖ Prevention research: Vaccine development and conducting clinical trials of vaccines and microbicides, behavioural interventions and positive prevention studies.
- ❖ Care and treatment research: Increasing effectiveness of anti-HIV drug therapy, treatment of HIV-TB co-infected persons through controlled clinical trials for testing new treatment regimens and strategies. Screening new molecules for anti-HIV activity.
- ❖ Biology of HIV infection: Characterization of Indian HIV-1 strains including full length sequence data, cell tropism, surveillance for recombinant strains, host immune response including neutralizing antibody response, cytolytic T cell response and host genetics, role of Dendritic Cells.
- ❖ Support to National Programme in capacity building through training of doctors and other health care providers.

## 3. INTERNATIONAL RECOGNITION

3.1 NARI is a

- i. Designated WHO collaborating centre for HIV diagnosis and Monitoring of Antiretroviral Therapy.
- ii. Clinical Trial Unit under AIDS Research Programme of National Institutes of Health, USA.

3.2 The ART Drug Resistance Laboratory of NARI is the only WHO accredited laboratory in India for carrying out anti-HIV drug resistance genotyping.

## 4. HUMAN RESOURCE DEVELOPMENT

4.1 NARI organises training programmes/workshops for medical officers, specialists, microbiologists, laboratory

technicians in diverse areas viz., Antiretroviral therapy, Syphilis serology, bio-ethics, ANC, STD surveillance etc.

## **5. RECOGNITION FOR DOCTORATE/MASTERS BY A UNIVERSITY**

5.1 NARI is recognized by Pune University for PhD and M.Sc. programme and by Maharashtra University of Health Sciences, Nashik for Ph D programme in Epidemiology.

## **6. MAJOR ACHIEVEMENTS**

6.1 Among the major achievement of NARI are the following

- Established a repository of HIV strains isolated from different parts of the country.
- Carried out studies on characterization of Indian HIV viruses. Shown that Indian HIV subtype C segregates away from other such as China or South Africa. Sequencing full genome of over 60 HIV virus strains.
- First from India to report presence of recombinant viruses
- Established a large one of a kind cohort of HIV Sero negative persons which has resulted in valuable data on HIV and STI incidence, acute primary HIV infection, behavioural and biological factors associated with HIV prevalence and incidence.
- Demonstrated for the first time that women married to STD patients are at greater risk of HIV infection even though they do not indulge in high risk behaviour.
- Established vaccine testing site and conducted India's first HIV vaccine trial as per international scientific and ethical standards.
- Co-ordinated Integrated Behavioural and Biological Assessment survey in six high HIV prevalence states as a part of monitoring and evaluation of Bill and Melinda Gates Foundation's "Avahan India AIDS Initiative".
- Established Clinical Trial Unit: NARI having a capacity to carry out clinical trials for treatment and prevention of HIV using ART and provides drugs through the National ARV treatment program for ongoing access.
- Established a facility to conduct studies on women controlled methods for HIV prevention. Successfully conducted many Phase I and II trials for Vaginal Microbicides and Female condoms.
- Played a major role in National Aids Control Programme especially in the feasibility study for prevention of Mother to Child Transmission of HIV, External Quality Assurance Programme for HIV testing and CD4 counts, surveillance and monitoring of anti HIV drug resistance, HIV sentinel surveillance programme and training of various categories of health care workers.



# NATIONAL INSTITUTE OF CHOLERA AND ENTERIC DISEASES

(Established in 1962)

Address : P-33, C. I. T. Road, Scheme - XM, Beliaghata, Kolkata 700010 West Bengal INDIA

Phone : (033) 2363-3373

Fax : (033) 2363-2398

Email : [nairgb@icmr.org.in](mailto:nairgb@icmr.org.in), [gbnair\\_2000@yahoo.com](mailto:gbnair_2000@yahoo.com)

Website : [www.niced.org.in](http://www.niced.org.in)

## 1. SCOPE OF ACTIVITIES

- 1.1 Situated at Kolkata in West Bengal, the National Institute of Cholera and Enteric Diseases (NICED) conducts research on the
  - i. Epidemiological, parasitological, pathophysiological, virological, immunological, biochemical and microbiological aspects of the pathogens causing enteric diseases with special reference to cholera.
  - ii. Development of vaccines for cholera / typhoid and diarrhoeagenic viruses.
  - iii. Epidemiological and immunological aspects of HIV and its vaccine.
- 1.2 Antisera production and supply for the diagnosis of *Vibrio cholerae* O1 and O139.
- 1.3 Nationwide screening of phage types of *Vibrio cholerae* O1 biotype El Tor and *Vibrio cholerae* O139.
- 1.4 Clinical laboratory investigations for clinical research programmes, epidemic and outbreak investigations.
- 1.5 Training to assist in the development of skilled man power resource.

## 2. THRUST AREAS

2.1 The following are the thrust areas of NICED

- i. The study of pathogens causing enteric diseases and on HIV.

### Bacteriology

- ii. Identification of enteric bacteria in and around Kolkata responsible for causing diarrhoea with special reference to *Vibrio cholerae*.
- iii. Molecular typing of bacterial strains, detection of virulence genes, antimicrobial susceptible patterns and detection of resistance mechanisms and novel toxins.
- iv. The study of bacterium *H. pylori* as a causative agent of gastro-duodenal diseases.

### Biochemistry

- v. Understanding host-pathogen relationship in molecular terms by addressing the characterization of microbial proteins that are involved in the pathogenesis of enteric diseases and host immune responses.

- vi. Pathogenesis of different diarrhoeagenic bacteria with special emphasis on receptor biology and signal transduction pathway involved in the mechanism of action of different bacterial toxins and molecular mechanisms.

#### **Immunological**

- vii. Mucosal immune regulation by two proteins: porin (the major outer membrane protein of Gram negative bacteria, *Shigella dysenteriae* type 1) and hemolysin, (a pore-forming toxin released by *Vibrio cholerae*).

#### **Virology and Parasitology**

- viii. Studies at the molecular and cellular levels with epidemiological studies and etiological role of different diarrhoeagenic viruses with focus on Rotavirus, Caliciviruses, Astroviruses, Picobirnaviruses and Adenoviruses and disease burden.
- ix. Studies on influenza viruses.

#### **Clinical and Climate Research**

- x. Improved management of different types of diarrhoea, dysentery and typhoid fever. Epidemiological research on different aspects of diarrhoea- observational, intervention and operational projects like micronutrient supplementation and Albendazole administration to children and its impact on their growth.
- xi. Seasonal effects and their relationship with the incidence of diarrhoeal cases and application of remote sensing and geographic information system (GIS) for identifying the risk factors.

#### **Vaccines**

- xii. Field trials of live Oral Cholera Vaccine VA 1.3, VA1.4. Oral inactivated bivalent cholera vaccine, typhoid vaccine. Rotavirus Vaccines and Measles Aerosol Vaccine.

#### **Other Areas**

- xiii. The causative organisms for Neonatal sepsis with special reference to Gram negative bacteria and innate immune response of the gastrointestinal mucosa in response to pathogens.

#### **HIV studies**

- xiv. Identification of the magnitude of HIV epidemic among injecting drug users.
- xv. Documentation of the expanded horizon of HIV epidemic through the drug-sex interface.
- xvi. Characterization of HIV genome in different risk groups and identification of recombinant strains.
- xvii. Conduction of innovative intervention trial to reduce stigma around HIV/AIDS and focusing on cross border issues linked with drug, HIV, human trafficking and in as well as out-migration.
- xviii. Partnered modified vaccine candidate for HIV.

### **3. INTERNATIONAL RECOGNITION**

#### **3.1 NICED is a declared WHO Collaborating Centre for**

- i. Reference & Research in Vibrios.
- ii. Research & Training in diarrhoeal diseases.

#### **3.2 Focal Research Laboratory of the Asia Pacific PulseNet Molecular Electronic surveillance.**

- 3.3 Collaborative Research Centre for Studies on Emerging and Reemerging Infections, Okayama University, Okayama, Japan.
- 3.4 One of the study sites of the Global Enteric Multicentric study supported by Bill and Melinda Gates Foundation.
- 3.5 Multi vaccine based collaborations with International Vaccine Institute, Seoul, Korea.

#### **4. HUMAN RESOURCE DEVELOPMENT**

- 4.1 The Institute has been enrolling PhD students having registrations in different leading State Universities like Calcutta University, Jadavpur University, Burdwan University, and Kalyani University and also in Central University like Visva Bharati University since late 1970s.
- 4.2 Several trainings are being conducted from the Institute for the development of skilled man power resource viz.
  - Training on diarrhoeal diseases with a focus on diagnostics and management.
  - Training programmes on HIV sentinel surveillance and good laboratory practices.
  - Project specific training on development of questionnaire, intervening skills, field implementation of project activities, data management and analysis
  - Summer/Winter training of students of different universities and Institutions all over India.

#### **5. DETAILS OF RECOGNITION FOR DOCTORATE BY A UNIVERSITY**

- 5.1 The following Universities have recognised NICED for enrolling students for PhD work
  - Calcutta University
  - Jadavpur University
  - Burdwan University
  - Kalyani University
  - Visva Bharati University

#### **6. MAJOR ACHIEVEMENTS**

- 6.1 Among the major achievements of NICED are the following
  - Successful demonstration, based on results of the 2-years' old study that about 60% of all diarrhoea cases could be successfully treated with ORS and none had to be referred to the hospital.
  - Establishment of the strategy based on the results of a pilot study, that in the first tier mothers (or child caretakers) are required to give adequate amount of locally recommended home-available-fluid (HAF) to the child with diarrhoea. This resulted in HAF becoming along with ORS a key strategy in the global CDD programme.
  - Establishment of the superiority of hypo osmolar ORS over conventional ORS both in terms of reducing stool volume and duration of diarrhea. This led to the acceptance and widespread use of this solution to combat dehydration in all types of diarrhea.
  - Identification of multi-drug resistant *Shigella dysenteriae* type 1 (*Shiga bacillus*) as the causative agent of epidemic of bacillary dysentery that affected thousands of people in West Bengal in 1984 with a considerable number of recorded deaths, and establishment of the superiority of Norfloxacin to Nalidixic Acid in the treatment of Shigellosis caused by *Shigella*.

- Discovery of a new toxigenic non-O1 strain designated as *Vibrio cholerae* O139 Bengal.
- Development of a recombinant Oral Cholera Vaccine along with the Institute of Microbial Technology, Chandigarh and the Indian Institute of Chemical Biology, Kolkata.
- Successful phase II and III randomized controlled trials of a bivalent whole cell killed oral cholera vaccine developed by the International Vaccine Institute in Seoul, Korea, leading to it being licensed in India in March 2009. As a public health tool, this vaccine will make a dramatic change in reducing the burden of cholera worldwide, being effective, cheap, safe, and produced according to WHO and international norms, and which can effectively be implemented either preemptively in cholera prone areas or as reactionary measures for combating epidemics.
- Development of a new PCR-based method using genes encoding colonization factor antigens of enterotoxigenic *E. coli* (ETEC) as a supplement to serotype-based detection protocol.
- Demonstrated that cholera toxin and heat-labile toxin of *Escherichia coli* (LT) markedly suppressed expression of cationic antimicrobial peptides by intestinal epithelial cells. Thus, CT and LT, in addition to their enterotoxigenic effect, play a role in survival of the pathogen in the gut by down-regulating the innate immune response of the host.
- Identification of an HIV epidemic among injecting heroin users in the north-eastern states of India bordering Myanmar. This research drew the attention of the HIV programme planners towards the intervention design for injection drug use related HIV transmission in the country.
- Identification of outreach to the community before reaching out to the injection drug users (IDUs) as the key element in harm reduction approach for HIV prevention among IDUs. These findings played a key role in getting harm reduction accepted in the National AIDS Policy of India.
- Provided the first convincing evidence of progression of HIV from the male IDUs to their wives, none of whom had ever injected drug. This helped in shaping the National HIV intervention operational guideline which ensures coverage of IDUs and their female regular sex partners under National AIDS Control Programme.
- Pioneering clinical work in the north eastern states of India regarding HIV related morbidity among IDUs and recognition that multi-dermatome Herpes Zoster served as a very useful surrogate clinical marker for HIV infection in these community settings.





# NATIONAL INSTITUTE OF EPIDEMIOLOGY

(Established in 1999)

Address : R-127, 3rd Avenue, Tamil Nadu Housing Board  
Ayapakkam, Chennai-600077 Tamil Nadu,  
INDIA  
Phone : 044-26820517 044-65651587  
Fax : 044-26820464  
Email : [director@dataone.in](mailto:director@dataone.in), [pblicmr@sancharnet.in](mailto:pblicmr@sancharnet.in),  
[pblicmr@sancharnet.in](mailto:pblicmr@sancharnet.in)  
Website : [www.nie.gov.in](http://www.nie.gov.in) <http://www.rmrc.res.in>

## 1. SCOPE OF ACTIVITIES

1.1 Situated at Chennai in Tamil Nadu, the National Institute of Epidemiology (NIE) carries out a variety of research activities including interventional studies, disease modeling, and health systems research, evaluation of health schemes and disease control programmes, issues of statistical methodology, epidemiological investigations and clinical trials of traditional remedies.

## 2. THRUST AREAS

2.1 The following are the thrust areas of NIE

- ❖ Epidemiology of communicable diseases namely leprosy, tuberculosis and other diseases
- ❖ Epidemiology of Non-communicable diseases
- ❖ Biostatistics
- ❖ Support for Controlled clinical trials especially for traditional medicines
- ❖ Maternal and child health
- ❖ Health surveys
- ❖ Data processing and analysis for national and international health programmes
- ❖ Conducting training programmes annually for medical doctors, PG medical students and para-medical workers in bio-statistics, controlled clinical trials and basic epidemiology
- ❖ Conducting regional workshops on Surveillance, Epidemic preparedness and Response

## 3. INTERNATIONAL RECOGNITION

3.1 NIE is a declared WHO Collaborating Centre for Epidemiology of Leprosy.

3.2 NIE is a member of Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET), a global network of 32 field-based training programmes.

## 4. HUMAN RESOURCE DEVELOPMENT

4.1 Running a 2-year Field Epidemiology Training Programme (FETP-INDIA) leading to Master of Applied Epidemiology (MAE) degree and the Master of Public Health (MPH).

## 5. RECOGNITION FOR DOCTORATE/MASTERS BY A UNIVERSITY

- 5.1 Masters recognized by the Sree Chitra Tirunal Institute of Medical Sciences and Technology (Deemed University), Thiruvananthapur.
- 5.2 The Institute is recognized by the University of Madras for research leading to Ph. D degree in the areas of epidemiology and bio-statistics.

## 6. MAJOR ACHIEVEMENTS

6.1 Among the major achievements of NIE are the following

- Identified as a Technical Resource Group for Epidemiology of HIV by National AIDS Control Organization.
- Conducted a large scale vaccine trial to evaluate the efficacy of BCG in leprosy.
- Coordinating centre for the multi-centric trial to assess the efficacy and effectiveness of 6 month MDT for all types of leprosy.
- Assessed efficacy of traditional medicines in controlled clinical trials.
- Over 80 MAE (FETP) scholars trained and in place in different state health systems
  - o These scholars now form an impressive technical force to investigate rumours and outbreaks in the context of the new International Health Regulations (IHR), 2005.
- The MAE/FETP scholars have investigated more than 75 outbreaks including the classical outbreak-prone pathogens in India, and toxic agents.
- These investigations led to evidence-based recommendations to reduce morbidity and mortality.
- Setting up the ICMR School of Public Health and managing the partnership of ICMR schools of Public Health.



# NATIONAL INSTITUTE OF IMMUNOHAEMATOLOGY

(Established in 1983)

Address : 13th Floor, New Multi-storied Building,  
KEM Hospital Campus,  
Mumbai - 400012 Maharashtra INDIA  
Phone : (022) 24138518/19, 24111161  
Fax No : (022) 24138521  
Email : [info@niih.org.in](mailto:info@niih.org.in)  
Website : [www.niih.org.in](http://www.niih.org.in)

## 1. SCOPE OF ACTIVITIES

1.1 Situated at Mumbai in Maharashtra, the National Institute of Immunohaematology (NIIH) conducts research on various haematological disorders.

## 2. THRUST AREAS

2.1 The following are the thrust areas of NIIH

- ❖ Study from population to molecular levels of Haemoglobinopathies, Thalassemia, Red Cell Enzymopathies and Membrane disorders.
- ❖ Pilot projects to assess the control and smoother management of these disorders in our country.
- ❖ Prenatal diagnosis of all inherited severe haematological disorders, for which no effective treatment/ cure is available, including in addition, haemophilia, other congenital coagulation disorders, severe immunodeficiencies etc.
- ❖ Cytogenetics, immunophenotypic studies of acute leukaemia, haemopoietic stem cell expansion and differentiation programmes.
- ❖ Cost effective treatment modalities for various haematological disorders.
- ❖ Molecular studies of major blood group antigens, HLA and immunogenetics.

## 3. INTERNATIONAL RECOGNITION

3.1 NIIH is recognized as World Federation of Hemophilia (WFH) training centre in genetic diagnosis of hemophilia for South East Asia.

3.2 WHO has recognized NIIH as a

- o training centre listed under its Regional Directory of Training Institutes.
- o training centre in “Transfusion Medicine” and “Advanced Haematology and Immunohaematology” for its in Country Fellowship Training Programme.

## 4. HUMAN RESOURCE DEVELOPMENT

4.1 NIIH has been training Blood Bank Medical Officers and Technicians from all over India, with special emphasis on backward areas of the country, for the past 35 years.

4.2 The Institute is recognized by WHO for training in Transfusion Medicine and Advanced Haematology and Immunohaematology for trainees on ‘WHO - In Country Fellowship’.

- 4.3 WHO has included the Institute's name in its Regional Directory of Training Institutions for Blood Banking.
- 4.4 The Institute is recognized as a Training Centre for Genetic Diagnosis of Haemophilias by the World Federation of Haemophilia.
- 4.5 The International Centre for Scientific Research (ICSR) has included the Institute's name in its list of research institutes in the world.
- 4.6 The Institute has conducted several hands on training workshops sponsored by DBT, WHO, Red Cross, State Blood Transfusion Council etc where advanced training in specific subjects is given to the trainees.
- 4.7 The Institute has been conducting NACO and MDACS sponsored special adhoc training programmes for doctors and technicians for HIV testing since 1985.
- 4.8 The institute undertakes M.Sc dissertation projects of Mumbai University for 6 months.

## **5. RECOGNITION FOR DOCTORATE/MASTERS BY A UNIVERSITY**

- 5.1 NIIH is recognised by the University of Mumbai for M.Sc and Ph.D in Applied Biology and Biochemistry.
- 5.2 The Institute is also involved n training DM (Clinical Haematology) students at KEM Hospital under Maharashtra University of Health Sciences.
- 5.3 The Institute has 8 guides for Ph.D in Applied Biology and 3 guides for Ph.D in Biochemistry of Mumbai University.

## **6. MAJOR ACHIEVEMENTS**

6.1 Among the major achievements of NIIH are the following

- Discovery of "Bombay Blood, Ina blood group, Hb Ratnagiri, Fibrinogen Mumbai as well as demonstration of several mutations in Hemoglobin, Pyruvate Kinase, Factor VII, Factor X, Factor VIII, Factor IX, Protein C molecules, and Gp IIb, IIIa molecules in Glanzmanns Thrombasthenia.
- Development of Prenatal diagnosis for various inherited haematological disorders like haemoglobinopathies, thalassemia, and hemophiliac, methodology for non-invasive prenatal diagnosis for -thalassemia.
- Identification of some rare as well as novel G6PD variants (G6PD Coimbra, G6PD Namoru, G6PD Niligiri) among primitive tribes of India.
- Studies on Effect of Hydroxyurea on patients suffering from various hemoglobinopathies
  - o Sickle cell anemia
  - o -thalassemia intermedia
  - o -thalassemia major.
- Tracing of mechanism of thrombocytopenia following dengue virus infection to infection of CFU - Meg colonies.
- Development of preliminary data on molecular analysis of ABO alleles and D variants in Indian population.
- Production of Monoclonal antibodies against B antigen, H antigen, Fetal hemoglobin, Factor VIII using hybridoma technology.
- Development of a diagnostic algorithm for detection of congenital immunodeficiency syndromes.
- Development of FISH and comparative genomic hybridization techniques for study of MDS, Fanconi's anemia, Down syndrome etc.
- Development of a TEG based classification of haemophilia for rational management of these patients.



# NATIONAL INSTITUTE OF MALARIA RESEARCH

(Established in 1977)

Address : Sector-8 Dwarka, New Delhi-110077  
INDIA  
Phone : 011-25307103  
Fax : 25307177  
Email : [director@mrcindia.org](mailto:director@mrcindia.org) [pblicmr@sancharnet.in](mailto:pblicmr@sancharnet.in)  
Website : [www.mrcindia.org](http://www.mrcindia.org) <http://www.rmrc.res.in>

## 1. SCOPE OF ACTIVITIES

- 1.1 Situated at New Delhi the National Institute of Malaria Research (NIMR) conducts research on Malaria and other vector borne diseases like dengue and chikungunya etc.
- 1.2 Its primary task is to find short term as well as long term solutions to the problems of malaria through basic, applied and operational field research

## 2. THRUST AREAS

- 2.1 The following are the thrust areas of NIMR
  - ❖ Testing and validation of new rapid diagnostic kits, drugs, insecticides, insect growth regulator compounds and repellents.
  - ❖ Monitoring of insecticide resistance, drug development, and therapeutic efficacy of antimalarial agents and supervision of indoor residual spray.
  - ❖ Providing support to National Vector Borne Disease Control Programme (NVBDCP)
  - ❖ Evaluation of strategies of NVBDCP.
  - ❖ Networking and linkages with national and international laboratories/agencies.
  - ❖ Manpower resource development through trainings/workshops and transfer of technology.

## 3. INTERNATIONAL RECOGNITION

- 3.1 NIMR is a declared WHO reference centre for sibling species identification and insecticide testing equipments.

## 4. HUMAN RESOURCE DEVELOPMENT

- 4.1 NIMR conducts short-term & long-term training courses in field of vector control, microscopy, entomology, surveillance, quality assurance of RDT, insecticide bioassay, bioenvironmental control, field applications of biocides, IRS, preparation of blood smear for diagnosis, malaria in pregnancy, anti-malaria operations and new tools like RS & GIS in prevention and control of vector borne diseases.
- 4.2 NIMR also imparts training to national and international participants from all levels starting from students, Ph.D. scholars, WHO fellows, community workers, counselors, lab technicians, epidemiologists,

Entomologists, Biologists, Scientists, Health Officers Assistant Medical Officers, Medical Officers, Assistant District Health Officers, Chief District Health Officers, Regional Deputy Directors to District Malaria Officers belonging to different organizations.

## **5. RECOGNITION FOR DOCTORATE/MASTERS BY A UNIVERSITY**

5.1 NIMR's scientists are affiliated with the following Universities to guide Ph.D. students -

- o Jiwaji University, Gwalior,
- o I.P. University, Delhi
- o Goa University, Goa

## **6. MAJOR ACHIEVEMENTS**

6.1 Among the major achievement of NIMR are the following

- National reference centre for evaluation of insecticides, biopesticides, biological agents, diagnostic kits and resistance monitoring.
- National biological resource for malaria parasite repository, insectary with different genetic strains.
- Cytotaxonomic studies identifying major vectors as species complexes and laboratory and field studies to examine the biological variations among sibling species, development of molecular identification techniques for sibling species.
- Demonstrated bioenvironmental methods for control of malaria and transferred this technology in 8 states and industrial units.
- Evaluated various insecticides of which deltamethrin, biolarvicides and pirimiphos methyl have been introduced in the national programme.
- Evaluated Insecticide treated mosquito nets, long lasting nets (Olyset, Permanet, and interceptor) which have been introduced into the programme.
- Developed mosquito control plans for Chennai, Ahmedabad, Panaji, Bangalore, Delhi and Dindigul.
- Assessed Health Impact of Konkan Railways, Marmugao Port trust, Goa and Sardar Sarovar dam.
- Undertook drug trials namely Bulaquine, alpha-beeta arteether, combination therapy which have been introduced in the national programme.
- Evaluated various Rapid Diagnostic Kits of which Paracheck and Parahit have been accepted by the NVBDCP.
- Established a repository of over 800 strains of malaria parasites in Malaria Parasite Bank which serves as a national resource for various studies.



# NATIONAL INSTITUTE OF MEDICAL STATISTICS

(Established in 1978)

Address : Ansari Nagar, New Delhi 110029 INDIA

Phone : 26588900, 26588904, 26588803

Fax : 26589635

Email : [arvindpandey@icmr.org.in](mailto:arvindpandey@icmr.org.in), [inpblicmr@sancharnet.in](mailto:inpblicmr@sancharnet.in)

Website : ICMR Website, <http://www.rmrc.res.in>

## 1. SCOPE OF ACTIVITIES

1.1 Situated at New Delhi, the National Institute of Medical Statistics (NIMS) conducts research on Medical Statistics.

## 2. THRUST AREAS

2.1 The following are the thrust areas of NIMS

- ❖ To provide latest methodologies in field of biostatistics for project planning with a component of research
- ❖ Conduct need based training programmes in medical statistics for the on job personnel of various institutions
  - o involved in biomedical research
  - o seeking help in
- ❖ clinical trials and
- ❖ statistical computing
- ❖ To provide consultancy to various users, researchers and scientists

## 3. INTERNATIONAL RECOGNITION

3.1 Clinical Trial Registry, India (CTRI) recognised as a primary register of International Clinical Trial Registry platform.

3.2 Member of Global Reference Group for HIV estimation Technical Advisory Committee.

3.3 Member of Science and Technology Group for HIV/AIDS in Asia Pacific Region.

## 4. RECOGNITION FOR DOCTORATE/MASTERS BY A UNIVERSITY

4.1 NIMS is affiliated as an approved research centre for Ph.D in Medical Statistics by the Guru Gobind Singh Indraprastha University, Delhi.

## 5. MAJOR ACHIEVEMENTS

5.1 Among the major achievements of NIMS are the following

- India's only institute to coordinate and standardize the collection of medical and health statistics in the country.
- Establishment of India's first Clinical Trials Registry, in collaboration with DST and WHO.
- Chair, National Family Health Survey.
- Assisted NACO in HIV sentinel surveillance and estimation of HIV burden in the country.
- Integrated Behavioural and Biological Assessment on National Highways (IBBA-NH) among truckers for HIV epidemic in the country.
- Identified as the National Nodal Agency for the implementation of IDSP- NCD risk factor survey.





# NATIONAL INSTITUTE OF NUTRITION

(Established in 1919)

Address : Jamai - Osmania (P.O.), Tarnaka,  
Hyderabad, Andhra Pradesh INDIA  
Phone : 91-040-27018083  
Fax : 91-040-27019074  
E-mail : nin@ap.nic.in  
Website : www.ninindia.org

## 1. SCOPE OF ACTIVITIES

- 1.1 Situated at Hyderabad in the State of Andhra Pradesh, the National Institute of Nutrition (NIN), conducts research in the area of Food and Nutrition.
- 1.2 The Food & Drug Toxicology Research Centre (FDTRC) of the NIN carries out research in areas of food safety, food toxicology, drug-nutrient interactions, mycotoxins, heavy metal contaminants and fluorosis.
- 1.3 The National Centre of Laboratory Sciences (NCLAS) of NIN (established in 1957) develops breeds and supplies various animal models and feeds for experimental purposes.
- 1.4 The Preclinical toxicology centre (PCT) of NIN carries out short term and long term toxicological evaluations of candidate molecules.
- 1.5 National Nutrition Monitoring Bureau (NNMB), an extramural project of NIN operating in 10 states, generates information on food and nutrient intakes, nutritional status, prevalence of chronic degenerative disorders such as overweight/obesity, hypertension, Type 2 diabetes, micronutrients deficiency disorders etc. among rural communities, on a continuous basis.

## 2. THRUST AREAS

- 2.1 The following are the thrust areas of NIN

### Basic Research

- ❖ Food chemistry, nutritional biochemistry, endocrinology, lipid chemistry, ocular bio-chemistry, biophysics, work physiology, molecular biology, and stem cell research.

### Clinical Research

- ❖ Maternal and child nutrition, bone health, diet & cancer, diet & diabetes, infection & immunity, pathology and microbiology related studies.

### Community based operational research

- ❖ Nutrition monitoring & surveillance, food & nutrient intakes, infant and child feeding practices, macro and micronutrient malnutrition, behavioral sciences, sports nutrition, biostatistics and policy research.

### Human resource development

- ❖ Conducting regular post graduate and certificate training programmes in various areas of applied nutrition, and need based ad hoc training programmes for various target groups.
- ❖ Extension & education activities in nutrition and health

### 3. INTERNATIONAL RECOGNITION

- 3.1 NIN is a WHO collaborating centre for Nutrition in health development.
- 3.2 NIN serves as the secretariat for the WHO South East Asia Nutrition Research-cum-Action Network (SEA RCA network).

### 4. HUMAN RESOURCE DEVELOPMENT

- 4.1 NIN runs a Postgraduate Certificate programme in Nutrition. It also has a M.Sc. (Applied Nutrition) 9-month programme (affiliated to Osmania University till the year 1986, and from 1987 to 2004, with Dr. NTR University of Health Sciences). In 2009, M.Sc. (Applied Nutrition) programme was revived as a two-year programme in affiliation with Dr. NTR University of Health Sciences.
- 4.2 The other training programmes being run are
  - On Endocrinological Techniques and their Applications.
  - Training Course on Techniques for Assessment of Nutritional Anaemias.
- 4.3 National Centre for Laboratory Animal Sciences (NCLAS) also conducts two different training programmes, viz.
  - Laboratory Animal Supervisors' Training Programme (LASTC)
  - Laboratory Animal Technicians' Training Programme (LATTC).

### 5. RECOGNITION FOR DOCTORATE/MASTERS BY A UNIVERSITY

- 5.1 NIN is recognised for D.Sc by Madras University, Chennai, Andhra University, Hyderabad, Mysore University, Mysore, Calcutta University, Kolkata and Nagpur University, Nagpur.
- 5.2 In addition, a number of universities - Osmania University, Hyderabad, Madras University, Chennai, Bombay University, Mumbai, Benaras Hindu University, Benaras, MS University, Vadodara, Pune University, Pune, Indian Institute of Science, Mysore, and Guwahati University, Guwahati - have recognized NIN as a research center for carrying out Ph.D.
- 5.3 NIN is also recognised by the Osmania University, Hyderabad for obtaining M.D.

### 6. MAJOR ACHIEVEMENTS

- 6.1 Among the major achievements of NIN are the following
  - Exploded the Protein myth and highlighted the calorie gap as a major bottleneck in Protein Energy Malnutrition (PEM).
  - Institute's research formed the basis for formulation and implementation of national nutrition intervention programmes for the control and prevention of iron deficiency anaemia (IDA) and vitamin A deficiency (VAD).
  - Determined nutritive value of over 650 Indian foods.
  - Established Recommended Dietary Allowances (RDA) for different age/sex/ physiological and occupational groups in India.
  - Generated data on diet & nutritional status of populations at different time points that formed the basis for development of nutrition policies and intervention programmes.
  - Developed technology of double fortification of cooking salt with iron and iodine to tackle the twin problem of IDA & IDD.
  - Established the anti-cancer properties of traditional Indian spices such as turmeric, and ginger.
  - Developed simple and sensitive method for assessment of blood vitamin A levels using dried blood spot technique.
  - Established molecular link for degenerative disorders such as diabetes, cardiovascular diseases and obesity.
  - Developed different animal models for studying various nutrition related disorders.



# NATIONAL INSTITUTE OF OCCUPATIONAL HEALTH

(Established in 1969)

Address : Meghani Nagar, Ahmedabad - 380 016,  
Gujarat, INDIA  
Phone : (91) 79-22686351, 22686352, 22686359,  
22686242  
Fax : (91) 79-22686110  
Email : [nioh@nioh.org](mailto:nioh@nioh.org)  
Website : [www.nioh.org](http://www.nioh.org)

## 1. SCOPE OF ACTIVITIES

- 2.1 Situated at Ahmedabad in Gujarat, the National Institute of Occupational Health conducts research on occupational and Environmental health to provide a safe, healthy and comfortable work environment and living, through multidisciplinary approach viz. education, service and related activities.
- 2.2 NIOH has two Regional Centres at Kolkata and Bangalore to cater the need of Eastern and Southern parts of the country.

## 2. THRUST AREAS

2.1 The following are the thrust areas of NIOH

- ❖ Epidemiological and environmental monitoring and corollary toxicological studies in hazardous occupations for recognition and evaluation of risk factors
- ❖ Development of tools for early diagnosis of health impairment and design of appropriate intervention measures for the prevention of hazards at work places.
- ❖ Occupational and environmental epidemiology
- ❖ Toxicology (metal, pesticide, reproductive, geno and neurobehavioral)
- ❖ Environmental pollution (air, water, noise, thermal)
- ❖ Development of safety norms (chemical physical agents)
- ❖ Operational research
- ❖ Women and children health
- ❖ Agricultural health

## 3. INTERNATIONAL RECOGNITION

- 3.1 NIOH is a declared WHO Collaborating Centre for Occupational Health South-East Asia region.
- 3.2 Participating Institute for International Programmed on Chemical Safety (IPCS) - a program organized jointly by WHO, International Labor Organization (ILO) and United Nations Environmental Programme (UNEP).

#### **4. HUMAN RESOURCE DEVELOPMENT**

4.1 One of the major functions of this Institute is to develop human resources. In this direction, NIOH has carried out number of training programmes. These training programmes were carried out for medical officers working in the ESIS, PHCs, and industries, industrial hygienists, medical inspectors of factories, factory inspectors, safety officers, NGOs, etc. The period of these training programmes ranges from one week to three months. NIOH has also started three months certificate course of Associate Fellow of Industrial Health (AFIH) for the medical officers working in the industry in collaboration with Mahatma Gandhi Labour Institute, Ahmedabad.

#### **5. RECOGNITION FOR DOCTORATE/MASTERS BY A UNIVERSITY**

5.1 The M.S. University, Vadodara, Gujarat University, Ahmedabad, University of Kolkata and University Jadavpur have recognized the Institutes' scientists as Ph.D. guides.

#### **6. MAJOR ACHIEVEMENTS**

6.1 Among the major achievement of NIOH are the following

- Undertook studies on the industries such as Slate Pencil and Agate Industry, Quartz Grinding, Stone Quarries, Mica Processing and also developed an exhaust system with Bag filters to reduce the risk of silica exposure.
- Studies in various industries viz., Asbestos-Cement Asbestos mining, milling, etc. over a period of time reported reduction in fiber levels from as high as several hundred fibers per cubic centimeter of air to less than permissible levels. It also helped Government in reducing the permissible level from 2 fibre/ml to 1 fibre/ml.
- First to show through epidemiological studies a very high prevalence Byssinosis especially in blow (30%) and card rooms (38%) of textile mills. Byssinosis was also reported for the first time in Jute Mill Workers.
- Reported low prevalence of pneumoconiosis and absence of more severe cases of pneumoconiosis in Indian coal miners. It also reported very high prevalence of non pneumoconiotic respiratory morbidity in coal miners.
- Successfully undertook gloves awareness programmes in different tobacco cultivating regions. The Bureau of Indian standards, Tobacco Board, Ministry of Commerce (Government of India) has acknowledged the development for incorporation in standards and specification of use by the tobacco farm workers of AP and Karnataka.
- Demonstrated very high sound pressure levels in various industries, ranging from 102-114 dBA in textile industries, 93-103 dBA in pharmaceutical firms, 90-102 dBA in fertilizer plants, 90-119 dBA in oil and natural gas complexes in Bombay High, 60-102 dBA due to road traffic in Ahmedabad city, 90-102 dBA in surface rail traffic, 70-111 dBA in metro rail, 90-112 dBA for air traffic.
- Conducted evaluation of occupational exposures to metals in a number of industries such as printing press, type foundries, ceramic and pottery foundries, battery reconditioning shops, garage workers, mining and smelting plants, silver foundries and silver refinery, etc.
- Study on insecticide hexachlorocyclo-hexane (HCH) was of its own kind that covered all the four HCH manufacturing units in the country resulting in Beta-HCH being taken as the marker for cumulative exposure for HCH and lindane for immediate past exposure.
- Designed a prototype of a ploughing device for better tillage.

- Research and experimental studies that helped in the development of various intervention strategies and engineering control devices in order to reduce the exposure level in the work environment.
- Designed dust control device consisting of blower, and bag filters for traditional grinding machines in agate industry. Dust control device to reduce silica dust in small silica flour mill units was developed using ACGIH ventilation guidelines.
- Established that Glycerol hyperhydration allows maintaining an enhanced fluid reservoir, thereby reversing cardiovascular and thermoregulatory challenges during work-heat stress.
- Developed two (portable and mobile) local exhaust ventilation (LEV) units in collaboration with the Rural Technology Institute, Gandhinagar, India.
- Maiden study on cardiac toxicity due to exposure to methomyl, a carbamate pesticide.
- Non-occupational exposure to silica dust in the vicinity of agate (Gujarat) and slate pencil (M.P.) industries was reported for the first time. Several cases of non-occupational silicosis were also reported.



# NATIONAL INSTITUTE OF RESEARCH IN REPRODUCTIVE HEALTH

(Established in 1970)

Address : Jehangir Merwanji Street, Parel,  
Mumbai- 400012, Maharashtra INDIA  
Phone : 022-04192002  
Fax : 022-24139412  
Email : [dirirr@vsnl.com](mailto:dirirr@vsnl.com)  
Website : [www.nirrh.res.in](http://www.nirrh.res.in)

## 1. SCOPE OF ACTIVITIES

- 1.1 Situated at Mumbai in Maharashtra, the mission of the National Institute for Research in Reproductive Health (NIRRH) is to protect and enhance the reproductive health of people through research, and development of technologies and programmes for field applications which can be incorporated into national programmes.
- 1.2 NIRRH is one of the designated ICMR centres for bio-medical informatics.

## 2. THRUST AREAS

2.1 The following are the thrust areas of NIRRH

- ❖ conduct biomedical, clinical and operational research on various aspects of reproductive health;
- ❖ collaborate with national and international research organizations in global effort to promote multilateral exchange in reproductive health;
- ❖ develop human resources by training young researchers in the specialized areas of reproductive health;
- ❖ propagate research results into policy making and planning;
- ❖ provide consultant assistance to other institutions; and,
- ❖ establish national facilities for experimental animals, toxicological evaluation of new and existing drugs, devices and vaccines for improving reproductive health.

## 3. INTERNATIONAL RECOGNITION

3.1 NIRRH is designated as a WHO Collaborating Centre on Research and Training in Reproductive Health.

## 4. HUMAN RESOURCE DEVELOPMENT

4.1 Some of the training programs regularly conducted at the Institute relate to molecular biology techniques, insertion and management of complications with IUCDs, ultrasonography, assisted reproductive technologies, gynecological cytology and colposcopy, management of infertility and reproductive disorders, and detection of reproductive tract infections, stem cell biology, preclinical reproductive and genetic toxicology, training modules on adolescent friendly health services and research methodology.

4.2 The Institute also inducts summer trainees in various departments, wherein students are given hands-on training on the working of various departments.

## 5. RECOGNITION FOR DOCTORATE/MASTERS BY A UNIVERSITY

5.1 The University of Mumbai has recognized the Institute for M. Sc (by research) and Ph D degrees in the faculties of Biochemistry, Applied Biology, Life Sciences and Biotechnology.

## 6. MAJOR ACHIEVEMENTS

6.1 Among the major achievements of NIRRH are the following:

- Evaluation of a number of contraceptives such as oral pills, injectables, transdermal devices, vaginal rings, intrauterine devices and emergency contraceptives for their safety, efficacy and acceptability.
  - The data generated helped the government to introduce some of these methods in the national family welfare programme.
- Identification of several novel molecules which have a role in fertility regulation, both in the male and the female.
  - Some of these molecules are being tested for their safety as a prelude to initiation of clinical evaluation.
- The studies carried out by the Institute have shown that oral administration of an antiprogestin (RU 486) followed by a prostaglandin analogue (Misoprostol) provides a safe and effective method for early pregnancy termination.
  - Availability of such noninvasive methods has made pregnancy termination much safer and affordable.
- Studies in the area of infertility management leading to the establishment of Assisted Reproductive Technologies (ART) in the country.
- The birth of India's first scientifically documented test tube baby was possible through the research endeavors of scientists working at NIRRH and the KEM Hospital.
- Identification of some new molecules with the potential for further development as microbicides.
- Development of simple, cost-effective and highly accurate methods for diagnosis of fertility status and RTIs.
  - Some of these technologies have been transferred to the industry for developing appropriate kits and wider use.
- A study that indicates that with specific training and facility up-grading, RTI services could be operationalised at the primary health care level.
- An operational research study in the area of adolescent health conducted in schools recommended that medical examination of reproductive system of adolescents needs to be included in the existing school health programme.
- Initiation of work to establish a primate centre to serve as a national resource for undertaking research on human health-related problems where non-human primates serve as the most appropriate animal model.
- Establishment of a centre for evaluation of reproductive and genetic toxicology of new products, devices and vaccines.
- This center caters to the needs of the Institute as well as of other institutions and the Indian pharma industry.



# NATIONAL INSTITUTE VIROLOGY

(Established in 1953)

Address : 20 A Dr Ambedkar Road Camp,  
Pune - 411001, Maharashtra INDIA

Phone : 020 - 26127301/26006290

Fax : 020 - 26122669/26126643

Email : [director@niv.co.in](mailto:director@niv.co.in) [nivicl@pn3.vsnl.net.in](mailto:nivicl@pn3.vsnl.net.in)

Website : [www.niv.co.in](http://www.niv.co.in) <http://www.niv.co.in>

## 1. SCOPE OF ACTIVITIES

- 1.1 Situated at Pune in Maharashtra, the National Institute of Virology (NIV) conducts comprehensive research on Human Viruses of public health concern. In addition to emerging and re-emerging viruses such as KFD, Hepatitis E, HIV, Chandipura, Nipah, Chikungunya, Human metapneumo and H5N1/swine H1N1 other viruses Dengue, Hepatitis A-G, Japanese Encephalitis, West Nile, Measles, Rota, Human Influenza and Avian Influenza causing considerable morbidity and mortality are studied in depth.
- 1.2 A Microbial Containment Complex (MCC) having BSL 3+ bio-safety level facility for handling microorganisms of highly infectious nature has been established at Pashan, Pune. A Maximum Containment Laboratory (BSL4) is under advance stage of construction. These laboratories provide National facility for safe handling of highly hazardous pathogens.

## 2. THRUST AREAS

2.1 The following are the thrust areas of NIV

- ❖ Thorough investigations of epidemics of viral /suspected viral and diseases of unknown etiology.
- ❖ To serve as an apex national laboratory in providing quick and accurate diagnostic services whenever situation demands.
- ❖ High quality applied and basic research on viruses of public health relevance including:
  - o Precise assessment of prevalence of different viruses in different populations at different time points, identifying risk groups requiring interventions. Conducting similar studies in animals / mosquitoes and other insects.
  - o Development of diagnostics, both serological and molecular.
  - o Understanding of the genetic variation in viruses with time, location and clinical presentation
  - o Development of vaccines employing different approaches
  - o Pathogenesis of viral infections in animal models and humans
  - o Partner to several national and international studies assessing efficacy of antivirals / vaccines, prevalence of viral infections and characterization of viruses.
  - o To suggest preventive and control strategies for viral infections.



- ❖ Timely supply of diagnostic kits to WHO, neighboring countries and network of laboratories identified by the government within India.

### **3. INTERNATIONAL RECOGNITION**

- 3.1 NIV is a WHO Collaborating Centre for Arbovirus and Haemorrhagic Fever Reference and Research.
- 3.2 NIV is a WHO National Influenza Center in India.
- 3.3 NIV is a WHO Influenza A H5 Reference laboratory for South East Asia.
- 3.3 The NIV Unit Bangalore is an accredited National Laboratory under National Polio Surveillance program.

### **4. HUMAN RESOURCE DEVELOPMENT**

- 4.1 NIV conducts on a regular basis
  - M Sc Virology and PhD programs
  - Short-term projects to the students from different colleges and universities
  - Workshops for newly introduced and classical techniques.

### **5. RECOGNITION FOR MASTERS/DOCTORATE BY A UNIVERSITY**

NIV is an affiliated institute of the Pune University. Both M Sc and Ph D degrees are awarded by this university.

### **6. MAJOR ACHIEVEMENTS**

6.1 The major achievements of NIV include:

- So far, the success stories of NIV, "from recognition to vaccine development" have been KFD, Hepatitis E and Chandipura.
- In the earlier years, NIV's contribution in defining role of different vectors in the spread of arboviruses and understanding of vector biology has been immense.
- The first insect cell-line, C6/36, was developed at NIV and is used world wide for isolation of arboviruses.
- Clinical trial of Measles vaccine produced by Serum Institute of India, Pune was jointly conducted by NIV and B J Medical College, Pune. This vaccine is used in majority of the countries in world.
- Invaluable collection of over 2 million serum samples, a thousand strains of viruses, and 21 new-discovered viruses are in our repository.
- Several new species of ticks, lice, flea, sand flies, mosquitoes and a new species of rodent has been described by the scientists of the institute.
- For all hepatitis viruses age-stratified serosurveys conducted over 20 years documented changing epidemiology requiring re-thinking about vaccination policy
- For several viruses, mutations over time were studied leading to calculation of evolutionary rates of the viruses.
- Development of immunoassays for KFD, hepatitis A, B, E, JE, WN, DEN, CHP, Chikungunya, Rota and Measles viruses.

- Development of molecular assays for diagnosis for almost all the viruses under investigation and real time PCR for the quantisation of HBV, HEV, HAV, HCV, CHP, Dengue and CHIK viruses.
- HAV and JEV were transferred to an industry for the development of a killed vaccine
- Recombinant protein-based vaccine for hepatitis E and a combination vaccine for hepatitis E and B was developed; preclinical trial in monkeys showed very promising results.
- Documentation of Nipah virus as the etiology of an epidemic at Siliguri and Nadia with very high mortality.
- The institute rose quickly to the emergency situations and provided diagnosis for SARS, H5N1, Chikungunya and swine H1N1 with the labs working 24-hours a day.
- Avian Influenza virus - recombinant virus using reverse genetics developed with CDC - identified as prospective vaccine candidate by WHO
- The institute produces thousands of ELISA kits for the diagnosis of JE, Dengue and Chikungunya and supplies to the national programs
- Avian Influenza (H5N1) recombinant virus using reverse genetics developed with CDC was identified as prospective vaccine candidate by WHO
- An animal model was developed for Chikungunya producing disease similar to humans
- Patents obtained / filed:
  - o Insect repellent device
  - o Chimeric T helper B cell peptide
  - o Use of IgY antibodies against rotavirus inf. in children and Poultry
  - o Preparation & use of immune goat colostrum against rotavirus infection
  - o ELISA for Rotavirus
  - o Recombinant proteins of genotype-4 swine Hepatitis E virus.



# NATIONAL JALMA INSTITUTE FOR LEPROSY AND OTHER MYCOBACTERIAL DISEASES

(Established in 1976)

Address : Dr. M. Miyazaki Marg, PO Box 101, Tajganj,  
Agra-282001 Uttar Pradesh INDIA

Phone : 0562-2331751-54, 2331756, 2232222

Fax : 0562-2331755

Email : kirankatoch@rediffmail.com; jalma@sancharnet.in

Website : [www.jalma-icmr.org.in](http://www.jalma-icmr.org.in); <http://icmr.nic.in/pinstitute/jalma.htm>

## 1. SCOPE OF ACTIVITIES

1.1 Situated at Agra in Uttar Pradesh, the National JALMA Institute for Leprosy and Other Mycobacterial Diseases (NJILOMD) conducts research on leprosy, tuberculosis, HIV.

## 2. THRUST AREAS

2.1 The following are the thrust areas of NJILOMD

### Leprosy research

- ❖ Early diagnosis
- ❖ Improving and monitoring treatment
- ❖ Prevention and correction of deformities
- ❖ Understanding the transmission of disease
- ❖ Field studies and Operational research.
- ❖ Mechanisms of pathogenesis: interphase with other diseases (filariasis), social health and other problems

### Tuberculosis

- ❖ Early diagnosis and development of tests
- ❖ Drug sensitivity testing and designing and testing for rapid screening of sensitivity profile
- ❖ Experimental chemotherapy and immunotherapy
- ❖ Operational research including disease prevalence and drug resistance surveys in several districts of the State
- ❖ Molecular epidemiology in the field settings
- ❖ Mechanism of pathogenesis and vaccine studies
- ❖ Monitoring the effect of treatment using RNTCP protocols on disease dynamics in the community
- ❖ Participation in multicentric studies on the early diagnosis and therapy of tuberculosis
- ❖ Selected studies on HIV-AIDS

### **3. INTERNATIONAL RECOGNITION**

- 3.1 Participating centre in WHO multicentric studies on Uniform MDT for all types of leprosy patients.
- 3.2 It is also the surveillance centre undertaking molecular detection of drug resistance in leprosy in coordination with SEARO, WHO.
- 3.3 Its studies on the use of immunomodulator Mw as an adjunct to chemotherapy in CAT I and CAT II pulmonary tuberculosis approved by the FDA, USA.

### **4. HUMAN RESOURCE DEVELOPMENT**

- 4.1 NJILOMD undertakes various training programmes as mentioned below -
  - o One week long training programme on leprosy for District leprosy officers, Medical Officers.
  - o Training of medical graduates of local SN Medical College as per the curriculum.
  - o DBT multi-centric collaborative projects & trainings to various categories of personnel on molecular techniques (average 12-20 per year) to all categories of technical and scientific staff for over two decades.
  - o Teaching research & training support for M.Sc. in Life Sciences (Microbiology, Biochemistry and Biotechnology) to Bhim Rao Ambedkar University, Agra since 1998.
  - o Short term trainings, specialized trainings and capacity building trainings were imparted to more than 1500 aspirants of various other colleges/universities/Institutions etc.
  - o EQA, Drug Resistance Surveillance (DRS) training to Medical and paramedical staff of 35 districts of Bundelkhand and Western UP since 2007.
- 4.2 Till March 2009, 1175 project dissertation theses, 213 MD theses, more than 35 PhD theses have been completed, with entire or part of the work performed at NJILOMD, and submitted at various educational Institutes/Universities.
- 4.3 Having been recognized as a National Reference Laboratory (NRL) for RNTCP activities of Central TB Division of Government of India NJILOMD is providing training in Laboratory diagnosis especially molecular techniques for diagnosis and drug resistance studies on tuberculosis since 2008.

### **5. RECOGNITION FOR DOCTORATE/MASTERS BY A UNIVERSITY**

- 5.1 NJILOMD has entered into MOUs with a number of Universities for registering PhD students and for M.Sc dissertation projects -
  - PhD students
    - i. Bhim Rao Ambedkar University, Agra
    - ii. Jiwaji University, Gwalior
    - iii. Panjab University, Chandigarh
    - iv. Rani Durgavati Vishwavidyalaya, Jabalpur
  - M.Sc dissertation
    - i. Jiwaji University, Gwalior,
    - ii. Rani Durgavati Vishwavidyalaya, Jabalpur
- 5.2 Students from Bhim Rao University, Agra, and other regional and national Universities are also considered for M.Sc project dissertation.

## 6. MAJOR ACHIEVEMENTS

6.1 Among the major achievement of NJILOMD are the following

- Established state of art laboratories e.g. Micro-array lab, proteomics including MALDI-TOF, BSL-3 laboratories for microbiology and animal experiments with aerosol facility for MTB infection in guinea pigs.
- Established a field centre i.e. Model Rural Health Research Unit at Ghatampur (MRHRU) and a satellite centre at Banda, the main focus of which is to bring technology to the people.
- Examination of over 30,000 patients of leprosy annually in the OPD of it hospital and providing care and free treatment in the hospital and field for leprosy, TB, Filariasis etc..
- Serves as a National Reference Laboratory (NRL) for tuberculosis and repository centre for mycobacterial strains.
- Established animal house facility as part of the initiative for detecting multidrug resistance in leprosy using conventional mouse foot pad methods as well as molecular methods for surveillance of multi drug resistance in leprosy.
- Serves as a surveillance centre for AIDS control and has a VCTC clinic. Besides testing of foreign nationals it also undertakes free HIV testing and counseling of referred and voluntary patients of the society.
- Evaluated and demonstrated the immunoprophylactic effect of immunomodulator Mw on immunoprophylaxis of both TB and leprosy.
- Designed several new treatment regimens for leprosy.
  - o WHO has adopted modified PB regimen as uniform treatment regimen for all types of leprosy cases.
  - o Established the safety and usefulness of addition of immunotherapy (Mw and BCG to MDT) and is now available in the market for use as Immunovac.
- Identified antigenic targets and developed serological tests for leprosy.
- Developed new surgical procedures for correction of deformities i.e. JALMA flap for restoration of volume of first web space in muscular atrophy associated with ulnar paralysis in leprosy.
- Designed the partial micro array chip for leprosy (metabolic pathways and virulence) and TB (efflux pumps and gene associated quinolones resistance).
- Developed new methods for early diagnosis of leprosy using amplification of RLEP, 16S gene region and established it in slit skin smears, biopsy specimens and also in tissue sections using in situ PCR.
- Developed in house PCR RFLP based method to differentiate mycobacterial isolates (M tuberculosis, M avium, M fortuitum and other pathogens).
- Developed molecular typing methods for studying the strain variations in M leprae for identification of sources and mode of transmission.
- Established the presence of live bacilli in the environment (soil and water samples) by molecular methods.
- Established a network of Institutes/ centres working in leprosy for detection of multidrug resistance in leprosy using mice model as well as molecular methods.
- Established a National repository for mycobacteria, networking 38 Institutes and Medical Colleges, and supplying various strains to scientists.

- Co-ordinated multicentric studies on molecular methods (PCR based) for diagnosis of tuberculosis.
- System developed for molecular diagnosis of Kala Azar.
- Undertaking Government of India sponsored and UP Government funded Drug resistance surveys (DRS) in 35 districts of Bundelkhand and Western UP region (in collaboration with STDC Agra and UP government).
- Part of DBT sponsored multicentric studies of use of immunomodulator Mw as an adjunct to chemotherapy in Cat I Na Cat II tuberculosis.
- Has been training a large number of undergraduate, post graduate and doctoral medical and biomedical students.



## REGIONAL MEDICAL RESEARCH CENTRE, BELGAUM

(Established in 2006)

Address : Nehru Nagar, Belgaum 590 010  
Karnataka INDIA

Phone : 0831-2475477-78

Fax : 0831-245479

Email : oicmrblm@yahoo.com, sankhol@yahoo.com

Website : www.icmr.nic.in

### 1. SCOPE OF ACTIVITIES

1.1 Situated at Belgaum in Karnataka, the Regional Medical Research Centre (RMRC, Belgaum) conducts research on Herbal Medicine.

### 2. THRUST AREAS

2.1 The following are the thrust areas of RMRC, Belgaum

- ❖ Scientific validation of Herbal Medicine (phytochemistry, efficacy, safety, mode of action and clinical trials)
- ❖ Prevalence of diseases at regional level and the role of Herbal Medicine in treating these diseases
- ❖ Database for ethno medicinal plants of Western Ghats
- ❖ Improvement of infra-structural facilities and strengthening human resources in the area of Herbal and Traditional Medicine
- ❖ Close collaboration with traditional and herbal medicine practitioners in the region to
  - o Create general awareness
  - o Promote scientific temperament and
  - o Collect, collate and disseminate relevant scientific information in the area of herbal medicine.

### 3. INTERNATIONAL RECOGNITION

Nil

### 4. HUMAN RESOURCE DEVELOPMENT

- 4.1 The Centre provides hands-on training to B.Sc/B.Tech/B.Pharm, M.Sc./M.Tech/M.Pharm and MD students of different Universities as part of their courses and for dissertation purposes.
- 4.2 Training is also provided on demand to technicians/field workers on various aspects of identification, biological screening, phytochemistry and molecular biology of medicinal and aromatic plants.
- 4.3 The Centre provides its instrumentation facilities to the neighbouring institutes for R & D activities.
- 4.4 The Centre provides statistical consultations to MD/Ph.D students of neighbouring institutions.

4.5 The Centre is also involved in propagating Bioethics, Concepts to biomedical researchers in North Karnataka region.

## **5. RECOGNITION FOR DOCTORATE/MASTERS BY A UNIVERSITY**

5.1 The Scientists of the Centre are recognised as Guide/Co-Guide for Ph.D/MD by the KLE University, Belgaum, BMK Ayurveda Mahavidyalaya, Belgaum and Pondicherry University, Puducherry.

## **6. MAJOR ACHIEVEMENTS**

6.1 Among the major achievement of RMRC, Belgaum are the following

- Prepared a database on Ethno medicinal Plants of Western Ghats.
- Established a museum for Ethno medicinal plants of Western Ghats.
- Developed an herbal garden for Medicinal Plants of the Western Ghats Region with more than 200 medicinal plants in its campus.
- Prepared a directory of the local traditional practitioners (non-codified) from Belgaum district.
- Provided services to neighbouring research institutes and NGOs in respect of
  - i. Plant identification and Authentication of medicinal plants/drugs
  - ii. Information on collection, cultivation and utility of medicinal plants
  - iii. Preliminary screening of phytoconstituents and screening of biological activities.
  - iv. Consultation for experimental design and statistical analyses.





## REGIONAL MEDICAL RESEARCH CENTRE BHUBANESWAR

(Established in 1981)

Address : ECo Railway Complex Post Office Chandrasekharpur,  
Bhubaneswar-751023 Orissa INDIA

Phone : +91-674-2301332 / 2301322

Fax : +91-674-2301351

Email : [skk@icmr.org.in](mailto:skk@icmr.org.in) / [rmrcdir@sancharnet.in](mailto:rmrcdir@sancharnet.in)

### 1. SCOPE OF ACTIVITIES

1.1 Situated at Bhubaneswar, Orissa, Regional Medical Research Centre (RMRC, Bhubaneswar) conducts interdisciplinary research on locally prevailing communicable and non-communicable diseases such as filariasis, malaria, viral hepatitis, tuberculosis, diarrhoeal disorders, hemoglobinopathy and allied disorders, tribal health and nutrition in the state and neighboring areas; provides support to the state Health Departments and National programmes in disease surveillance activities in form of epidemic investigation and diagnosis, evaluation and training; and, provides HRD activities in form of training and research to post graduate students for Ph.D./ MD degree, MSc. dissertation and short term training to the doctors and technicians from state health departments and NVBDCP, Delhi.

### 2. THRUST AREAS

2.1 The following are the thrust areas of RMRC, Bhubaneswar

#### Filariasis

- ❖ Undertakes studies to find out the dynamics of disease progression for disease management; to develop an intervention strategy through clinical trials with emphasis on drug delivery mechanism, advocacy, monitoring and evaluation; to understand the immunological and molecular basis of host parasite interaction to develop immunodiagnostic/ immunoprophylactic tools as R & D activity.

#### Malaria

- ❖ Carries out molecular characterization of incriminating parasites; therapeutic efficacy of commonly used antimalarials and alternative treatment regimens for resistant parasite; studies on identification of genetic factors in human involved in natural resistance to malaria infection; studies on identification of sibling species and genetic structure of malaria vectors using molecular markers; studies on application of remote sensing and GIS in epidemiology of malaria to develop strategy for vector control.

#### Viral Hepatitis

- ❖ Undertakes research works on genomic characterization of hepatitis E and A viruses and genotyping of HBV infection circulating in different parts of Orissa.

#### Diarrhoeal Disorders

- ❖ Undertakes studies on hospital and field based surveillance system for diarrhoeal diseases to monitor spectrum of enteric pathogens; molecular epidemiology and genetic characterization of V. cholerae strains and other diarrhoeal pathogens.

### **Haemoglobinopathies and Allied disorders**

- ❖ Study the distribution pattern of genetic abnormalities, clinical spectrum and molecular characterization of abnormal haemoglobin molecules; G6PD deficiency prevalent in Orissa and their clinical significance.

### **Nutrition & Tribal Health**

- ❖ Studies on the prevalence of anaemia, Vitamin A and iodine deficiency disorders among the primitive tribes; health and nutritional status of different tribes with special focus on micronutrients to develop suitable intervention strategy; prevalence of haemoglobinopathies in the tribal population

## **3. INTERNATIONAL RECOGNITION**

**Nil**

## **4. HUMAN RESOURCE DEVELOPMENT**

- 4.1 MSc. Dissertations: Sponsored from different universities of Orissa and other parts of the country,
- 4.2 Other training programmes: Short term training to the doctors and technicians/paramedics from state health departments and NVBDCP, Delhi.

## **5. RECOGNITION FOR DOTORATE/MASTERS BY A UNIVERSITY**

- 5.1 Ph.D. Programme: Recognized by Utkal University, Bhubaneswar (Orissa) and Kalyani University, Kalyani (West Bengal).

## **6. MAJOR ACHIEVEMENTS**

- 6.1 Among the major achievement of RMRC, Bhubaneswar are the following
  - First to standardize tissue tonometry for assessing progression of lymphoedema.
  - First to describe the lymphatic nodules as clinical manifestation of bancroftian filariasis.
  - First to report the use of Ivermectin for treatment of scabies.
  - Developed the urban strategy of mass drug distribution (MDA) for improvement of compliance of single dose DEC for elimination of LF.
  - Described the potential anti-microfilarial role of ALT2 and CPI2 recombinant antigens.
  - Identified a candidate antigen (DssDI) for development of vaccine against bancroftian filariasis
  - Described a new variant of G6PD enzyme called "G6PD Orissa" among tribal and non-tribal populations of India.
  - Identified a novel allele in the intron 4(VNTR) of endothelial nitric oxide synthase (eNOS) in our population and association of eNOS polymorphism against cerebral malaria.
  - Developed a single tube PCR method to identify mosquito species, presence sporozoite and kind of blood meal taken by the vector mosquito.
  - Identified Pentoxifyline as an adjunct drug for treatment of cerebral malaria.
  - Established a close link with state health system of Orissa to transfer knowledge regarding vector borne and diarrhoeal diseases.



## REGIONAL MEDICAL RESEARCH CENTRE, DIBRUGARH

(Established in 1982)

Address : Post Box No. 105, Dibrugarh - 786001  
Assam, INDIA  
Phone : + 91 373-2381494, 2381591, 2381548,  
2381566  
FAX : +91 373- 2381748, 2381494, 2381548  
Email : icmrrcdi@hub.nic.in

### 1. SCOPE OF ACTIVITIES

1.1 Situated at Dibrugarh in Assam, the Regional Medical Research Centre, Dibrugarh (RMRC, Dibrugarh) conducts research on cardio vascular diseases, Rheumatoid heart disease, cancer, haemoglobinopathies, mosquito borne diseases (malaria, filariasis, Japanese encephalitis, Dengue), influenza, trematode infection, hepatitis, HIV & AIDS in the North eastern region.

### 2. THRUST AREAS

2.1 The following are the thrust areas of RMRC, Dibrugarh

- ❖ Diseases having priority in National Health Programmes
- ❖ Diseases common in two or more states of the north-eastern region
- ❖ Diseases unique to the north-eastern region
- ❖ Exploration of traditional knowledge
- ❖ Research on mosquito-borne diseases, HIV & drug abuse, Trematode infections & Haemoglobinopathies
- ❖ Cancers (Nasopharynx, oesophagus, stomach)
- ❖ Cardiovascular diseases and hypertension
- ❖ Medicinal plants of NE India
- ❖ Nutrition

### 3. INTERNATIONAL RECOGNITION

3.1 RMRC, Dibrugarh is a

- WHO recognised centre for training in malariology for Medical officers & Laboratory technicians
- Recognised centre for PhD/masters programme under Indo-US RISE programme

### 4. RECOGNITION FOR DOCTORATE/MASTERS BY A UNIVERSITY

4.1 RMRC, Dibrugarh is recognized by Guwahati University, Guwahati, Assam and Dibrugarh University, Dibrugarh, Assam for Ph D/MD programme.

## 5. MAJOR ACHIEVEMENTS

5.1 Among the major achievements of RMRC, Dibrugarh are the following

- Declared by the Govt. of India as a Centre of Excellence
- Developed forest malaria control module
- Patented on herbal anti malarial product and applied for two others as (i) mosquito repellent (ii) Mosquitocidal
- Developed early warning system for Japanese encephalitis
- First in the world to describe three new mosquitoes
- Established lung fluke as a major public health problem in north-east India
- Developed a new diagnostic kit for lung fluke disease
- Developed a murine model for lung fluke, and non human schistosome
- Established population based cancer registry network in Northeast India
- First to discovered the presence of West Nile virus infection in Northeast India
- First to established the presence of all four species of malaria parasite in Northeast
- Developed screening assays both in-vivo and in vitro for anti-malarial drugs
- Started MSc Biotechnology and Bioinformatics course in collaboration with Dibrugarh University.



## REGIONAL MEDICAL RESEARCH CENTRE, PORT BLAIR

(Established in 1983)

Address : Post Bag No. 13, Port Blair 744 101, Andaman and Nicobar Islands INDIA  
Phone : 03192-251158 (EPABX), 03192-2517429 (Director)  
03192-251043 (AO)  
Fax : 03912-251163  
Email : pblicmr@sancharnet.in/-vijayacharip@icmr.org.in  
Website : <http://www.rmrc.res.in>

### 1. SCOPE OF ACTIVITIES

1.1 Situated at Port Blair in Andaman & Nicobar Islands, the Regional Medical Research Centre Port Blair, (RMRC, PB) conducts research on communicable and non-communicable diseases prevalent in Andaman and Nicobar Islands with special emphasis on the health problems of the indigenous tribes. Local technical manpower development is another important facet of the Centre's mandate.

### 2. THRUST AREAS

2.1 The following are the thrust areas of RMRC, PB

- ❖ Leptospirosis
- ❖ diarrhoeal diseases, viral hepatitis, tuberculosis, lymphatic filariasis and other vector borne diseases including chikungunya, malaria and other health problems of the indigenous tribes of these Islands
- ❖ research on chronic non-communicable diseases including diabetes mellitus and cardiovascular diseases as well as on psycho-social issues including alcoholism and post-traumatic stress syndrome triggered by natural calamities such as earthquake and tsunami.
- ❖ collection and collation of information on traditional medicine/folk lore practices of the aborigines on medicinal plants and sea weeds and their medicinal properties.

### 3. INTERNATIONAL RECOGNITION

3.1 RMRC, PB is a designated WHO Collaborating Centre for Diagnosis, Research, Reference and Training in Leptospirosis, with the added mandate to develop Leptospirosis reference laboratories in other countries of the Southeast Asia Region

### 4. HUMAN RESOURCE DEVELOPMENT

4.1 RMRC, PB conducts doctoral programmes in Microbiology and Entomology as well as training programmes in Laboratory Diagnostic Procedures of Leptospirosis regularly. Besides, several workshops/seminars/symposia are also organized on various aspects of both communicable and non-communicable diseases including CME programmes.

### 5. RECOGNITION FOR DOCTORATE/MASTERS BY A UNIVERSITY

5.1 RMRC, PB is affiliated to Pondicherry University for conducting PhD programmes in Microbiology and Entomology.

## 6. MAJOR ACHIEVEMENTS

6.1 Among the major achievements of RMRC, PB are the following

- Establishment of the Leptospiral aetiology of 'Andaman Haemorrhagic Fever' (a mysterious febrile illness associated with pulmonary haemorrhages that was occurring as seasonal outbreaks during the 1980s and 90s).
- Development of indigenous and cost effective rapid tests for the diagnosis of leptospirosis and standardized new techniques for genetic characterization of leptospires.
- Establishment of a National Leptospira Repository that maintains several hundred reference strains and isolates of leptospires from various parts of the country and abroad.
- Establishment of the leptospiral aetiology of the outbreak of haemorrhagic fever that occurred in Orissa after the super-cyclone in 1999.
- Investigation of several outbreaks of leptospirosis in various parts of the country, and assisting in containment, setting up surveillance and developing strategies for prevention and control of the disease.
- Identification of Hepatitis B as a major health problem among the tribes.
  - Recommendation to include hepatitis B vaccination in the primary immunization schedule for children in the islands was subsequently accepted and implemented.
- Detection of the first reported outbreak of cholera in Andaman and Nicobar Islands (caused by the seventh pandemic strain of *Vibrio cholerae* Ogawa biotype El Tor). Identified subsequent outbreaks due to *V. cholerae* Inaba.
- Study of the transmission dynamics of diurnally sub periodic *Wuchereria bancrofti* transmitted by *Ochleorotatus niveus* in the Nancowry group of islands.
- Identification of acute flaccid paralysis as a neurological complication of chikungunya virus infection and initiation of the development of DNA vaccine in collaboration with University of Pennsylvania, USA.
- Active participation in the medical relief operations after the Asian Tsunami of December 2004, including initiation of the establishment of RMRC, PB's Field Units at Car Nicobar and Nancowry Islands.
- Recognition by the Pondicherry University to conduct Doctoral programmes in Microbiology and Entomology.



## REGIONAL MEDICAL RESEARCH CENTRE FOR TRIBALS, JABALPUR

(Established in 1984)

Address : Nagpur Road, Garha, Jabalpur- 482 003  
M P INDIA

Phone : +91-761-2370800/818, 2672713/445,

Fax : +91-761-2672835

Email : [rmrctjabalpur@rediffmail.com](mailto:rmrctjabalpur@rediffmail.com)

Website : [www.rmrct.org](http://www.rmrct.org)

### 1. SCOPE OF ACTIVITIES

- 1.1 Situated in the city of Jabalpur in the state of Madhya Pradesh, the Regional Medical Research Centre for Tribals (RMRCT) conducts research on Haemoglobinopathies, Vector borne disease, other Communicable diseases and Nutritional disorders.
- 1.2 The studies in Haemoglobinopathies are confined to sickle cell anemia, G6PD Deficiency and ? Thallasemia; the studies in vector borne diseases are restricted to the study of Malaria, Filariasis and Dengue; the studies on other communicable diseases include Tuberculosis, Viral hepatitis, sexually transmitted infection including HIV/AIDS, Diarrheal diseases, etc.; the Nutritional studies include research on nutritional disorders and studies on fluorosis.

### 2. THRUST AREAS

- 2.1 The following are the thrust areas of RMRCT
  - ❖ Haemoglobinopathies and malaria.
  - ❖ Work on the genetic disorders by mapping the genetic traits/ diseases.
  - ❖ Work on bio-medical and behavioural aspects of malaria using technology driven laboratories developed by it over the years.

### 3. INTERNATIONAL RECOGNITION

- 3.1 The requisite formalities and processes to declare RMRCT as a WHO collaborative centre for Malaria and Haemoglobinopathies are currently underway.
- 3.2 RMRCT works in close coordination with many international organizations in collaborative research or organizing symposia, etc. e.g. Centre for Disease Control, London School of Tropical Medicine, Liverpool School of Tropical Medicine and Hygiene, UNICEF, WHO, DFID, USAID, US Embassy, etc.

### 4. HUMAN RESOURCE DEVELOPMENT

- 4.1 RMRCT is recognized as State Referral Laboratory for HIV. Under this it participates in External Quality Assurance Scheme (EQUAS) where samples from different ICTC'S and Blood banks of the state are tested for quality controls. Regular trainings are also organized under EQUAS for laboratory technicians and medical officers. Induction and reorientation trainings on HIV/AIDS are also regularly organized for laboratory technicians of ICTC's.

4.2 RMRCT jointly with NIMR-FS, Jabalpur organises from time to time training workshop for medical officers on malariology.

4.3 RMRCT also organizes various national/international symposia, workshops and trainings.

o 2004

- WHO workshop on Rapid Assessment Tools for Malaria in Pregnancy for South East Asian Countries;
- INDO-US workshop on Cerebral Malaria Associated Neurological Disorders in India.

o 2006

- National symposium on Tribal Health.

o 2007

- Workshop on molecular and immuno-epidemiological aspects of malaria and other vector born diseases.

o 2009

- Symposium on tribal health.

4.4 Various students from Rani Durgawati Vishwavidyalaya, Jabalpur, Sikkim Manipal Institute of Technology and Medical Sciences, Sikkim, etc. have completed their M.Sc dissertation work under the guidance of scientists of the centre.

4.5 Nine students guided by the centre's scientists were awarded Ph.D from various universities such as Rani Durgawati Vishwavidyalaya, Jabalpur; Dr. Harisingh Gour University, Sagar; Bundelkhand University, Jhansi.

## **5. RECOGNITION FOR DOCTORATE/MASTERS BY A UNIVERSITY**

5.1 Rani Durgawati Vishwavidyalaya, Jabalpur through a memorandum of understanding in 2008 has recognized the centre/ scientists for guiding bio-medical and socio-behavioural health research students for the degree of Ph.D.

5.2 The centre is also recognized for Ph.D work by Jiwaji University, Gwalior.

## **6. MAJOR ACHIEVEMENTS**

6.1 Among the major achievements of RMRCT are the following:

- ❖ Established a TB lab.

Research Projects and important findings:

- Prevalence of pulmonary tuberculosis in tribal population of Madhya Pradesh;
  - o The overall prevalence of TB was assessed at 387 per 100,000 populations
  - o It was observed as a major public health problem amongst the Saharia primitive tribal community with the prevalence of 1,518 per 100,000 populations; 150 per 100,000 populations among Baigas of Baigachak; 430 per 100,000 populations among Bharias of Patalkot.
- Epidemiology of viral hepatitis in primitive tribes of Madhya Pradesh and Chhattisgarh (Ongoing)
  - o An ICMR multi-centric task force study being undertaken among primitive tribal communities in different parts of the country.



- o The prevalence of HBsAg is found to be ranging between 3 - 6.5% in different tribal communities.
- o The prevalence of anti-HCV is found to be ranging between 1 - 7% except among Bharias (15%).
- o The study has shown genotype D to be the most prevalent genotype in the study population.
- Genetic Diversity of Plasmodium vivax Circumsporozoite Protein (Ongoing)
  - o A total 40 samples were sequenced & amplified successfully and compared to a reference sequence obtained from GenBank (M11926 & J04090).
  - o All aligned sequences were found to be of VK210 type showing 5 sub type variants.
- Malaria in Baiga Chak of Dindori and Kanha of Mandla districts (Ongoing)
  - o These districts contribute about 29% of the state's malaria even though their population is only 2.6 % of state of M.P.
  - o In Baiga Chak, Chloroquine sensitivity test showed 53% treatment failure rate (early treatment failure - 26%, late clinical failure - 8% and late parasite clearance failure - 19%).
  - o The insecticide susceptibility test of An. culicifacies showed only 15% mortality against DDT while cent percent mortality was recorded against Deltametherine.
  - o Based on this study drug policy was modified in Baiga Chak in 2006. The change in insecticide and drugs reduced the prevalence of malaria significantly.
  - o Sibling species composition revealed the predominance of species C (90%) followed by species B and D using the cytotoxic techniques.
  - o An. fluviatilis sibling species was identified using Allele specific PCR technique which revealed the predominance of species T (80%) and the proportion of species S was 20%.
  - o Sporozoite rate of 0.08 and 0.3 was recorded in Baiga Chak and Kanha respectively.
- Prevalence of Haemoglobinopathies in tribes of Madhya Pradesh (Ongoing)
  - o High prevalence of alpha thalassaemia type II (52 to 82%), which is benign in nature, in ethnic tribes of MP.
  - o The distribution of alpha thalassaemia type II is suggestive of selection pressure.
  - o High prevalence of sickle haemoglobin (30%) in Pradhan tribe of district Dindori.
  - o Minor intervention of sickle cell disease reduces the disease severity.
- Integrated Disease Surveillance Project - NCD Risk Factor Surveillance, Madhya Pradesh and Maharashtra, India
  - o The first community based survey on assessment of cardiovascular risk factors.
  - o In Maharashtra stage II hypertensive which is usually manifested in the disease form was seen in 7% individuals some of them were even less than 30 years old.
  - o In Madhya Pradesh stage II hypertensive was seen in 8% individuals of which 3.4% individuals were less than 30 years.
- Newborn Care among Tribes of Madhya Pradesh: A Case Study among the Bhils of Dhar District of Madhya Pradesh (Ongoing)
  - o 65% of recently delivered women (RDW) registered with ANM.

- o 63% received at least one antenatal care.
- o 45% of the deliveries are made at a Government institution.
- Tobacco Related Disease in the Tribal Population of Kundam Block, Jabalpur District, Madhya Pradesh
  - o This study demonstrates a high prevalence of tobacco use - smoking (59.9%) and smokeless/chewing tobacco (42.2%).
  - o Resulting in hypertension (31.8%), mouth ulcer (12.6%), leukoplakia (11.3%), sub-mucosis fibrosis (9.4%), and chronic obstructive pulmonary disease (COPD) (5.1%), etc.
- Other activities
  - o The centre/scientists are recognized for PhD by Rani Durgawati Vishwavidyalaya, Jabalpur. One Ph.D awarded.
  - o Close linkages established with the Tribal Welfare Department, Government of India as well as Government of Madhya Pradesh for providing technical assistance/evaluation of programmes and for receiving financial support for the research studies.



# RAJENDRA MEMORIAL RESEARCH INSTITUTE OF MEDICAL SCIENCES

(Established in 1984)

Address : Agam-kuan, Patna-800 007, Bihar INDIA

Phone : + 91 612 2631565, 2631561

Fax : + 91 612 2634379

Email : [rmrims@rmrims.org.in](mailto:rmrims@rmrims.org.in), [dirrmris@sancharnet.in](mailto:dirrmris@sancharnet.in)

Website : <http://www.rmrims.org.in>

## 1. SCOPE OF ACTIVITIES

1.1 Situated at Patna in Bihar State, the Rajendra Memorial Research Institute of Medical Sciences (RMRIMS) conducts research on various aspects of Visceral Leishmaniasis, also known as Kala-azar, and HIV/AIDS. Tuberculosis is now being included.

1.2 RMRIMS is one of the designated ICMR centres for bio-medical informatics.

## 2. THRUST AREAS

2.1 The following are the thrust areas of RMRIMS

- ❖ PCR based diagnosis
- ❖ Studies on VL-HIV co-infection
- ❖ Clinical trials
- ❖ Cost effective integrated vector management
- ❖ Leishmania repository
- ❖ Role of cytokines in responsive and unresponsive patients
- ❖ Immuno-pathology of PKDL patients
- ❖ Innate immunity in malnutrition
- ❖ Database design of leishmania parasite
- ❖ Routine Biochemical and Hematological Diagnosis and Treatment of VL/PKDL/HIV
- ❖ HLA Typing of VL Patients
- ❖ Studies on Drug Resistance Mechanism in Genomic and Proteomic Level

## 3. INTERNATIONAL RECOGNITION

3.1 RMRIMS is a declared WHO reference centre for Leishmania Parasite and Sera Bank.

#### **4. HUMAN RESOURCE DEVELOPMENT**

##### 4.1 RMRIMS is providing

- Training to Masters and P.G. students of Life Sciences.
- Teaching and training to M. Pharma students.
- Training to District Medical Officers in Kala-azar control programme.

#### **5. RECOGNITION FOR DOCTORATE/MASTERS BY A UNIVERSITY**

5.1 RMRIMS is recognized for Doctorate programme by T.M. Bhagalpur University, Bhagalpur, Calcutta University, Kolkata and Patna University, Patna.

#### **6. MAJOR ACHIEVEMENTS**

##### 6.1 Among the major achievements of RMRIMS are the following:

- Establishment of a repository of 22 different isolates of Leishmania; preservation of 119 sera samples of various categories of Kala Azar patients for future work.
- Successful demonstration of the use of plants' extract as animal product free culture medium for propagation of Leishmania promastigotes.
- Successful application of PCR as better diagnostic test for Kala-azar, with encouraging results as compared to conventional microscopy of bone marrow/ splenic aspirate, and similarly also in PKDL cases, especially with macular lesion, where sensitivity of conventional microscopy of slit kin/ biopsy is very poor.
- Various clinical drug trials for treatment of VL, PKDL and co-infection and also to assess the safety and efficacy of combination therapies in shorter duration. Some clinical trials undertaken by RMRIMS along with names of the funding agencies are mentioned below:
  - Dose finding study of Miltefosine in treatment of PKDL (WHO/TDR)
  - Paromomycin Phase IV study (iOWH)
  - Combination therapy of Ambisome, Miltefosine and Paromomycin for treatment of VL (DNDi)
  - Combination therapy of Miltefosine and Ambisome for treatment of VL (WHO/TDR)
  - Single low dose of ambisome for treatment of VL (MSF-Spain)
  - Treatment of Kala-azar co-infected with HIV/ Tuberculosis (MSF-Spain)
  - Validation of sand fly distribution and Kala-azar disease prevalence through Remote Sensing & GIS in endemic and non endemic foci of Kala-azar to re-assess its applicability for the entire Kala-azar endemic region was undertaken.
- Re-establishment of the "Integrated Counseling and Testing Centre (ICTC)" for HIV/ AIDS.



# TUBERCULOSIS RESEARCH CENTRE

(Established in 1955)

Address : Mayor V.R. Ramanathan Road (Spurtank Road),  
Chetput, Chennai -600031 Tamil Nadu INDIA  
Phone : 044-28369500 044-65651587  
Fax : 044-28362525  
Email : icmrtrc@vsnl.com pblicmr@sancharnet.in  
pblicmr@sancharnet.in  
Website : www.trc-chennai.org http://www.rmrc.res.in

## 1. SCOPE OF ACTIVITIES

- 1.1 Situated at Chennai in Tamil Nadu, the Tuberculosis Research Centre (TRC) carries out research on all aspects (clinical, bacteriological, epidemiological, behavioural and laboratory) of tuberculosis and HIV-TB.
- 1.2 TRC coordinates nation wide surveys to assess the prevalence of drug resistance to anti-TB drugs and also provides quality assurance to the laboratory arm of the national programme.
- 1.3 TRC is the preferred training destination for training of personnel for the RNTCP.

## 2. THRUST AREAS

- 2.1 The following are the thrust areas of TRC
  - ❖ Development of cost effective, user- friendly treatment regimens for all forms of tuberculosis
  - ❖ Studies on the chemotherapeutic and behavioural aspects of HIV-TB
  - ❖ Vaccine trials for assessing the safety and efficacy of candidate HIV vaccines
  - ❖ Molecular and immunological aspects of TB pathogenesis and development of diagnostics.

## 3. INTERNATIONAL RECOGNITION

- 3.1 TRC is a declared WHO Collaborating Centre for TB Research and Training and a Supranational Reference Laboratory.
- 3.2 An International Centre for Excellence in Research (ICER) has been established at TRC in collaboration with NIH, USA.

## 4. HUMAN RESOURCE DEVELOPMENT

- 4.1 Currently 32 students registered for the PhD programme (Over 90 PhD and 2 D. Sc granted to staff members and students)
- 4.2 Regular training programmes on GCP, GLP and statistics conducted in collaboration with national and international institutes of repute.

## 5. RECOGNITION FOR DOCTORATE/MASTERS BY A UNIVERSITY

- 5.1 The Centre is recognized by the University of Madras for the PhD Degree. Several staff members serve as Guides/supervisors and members of the Doctoral Committees of the University.

## 6. MAJOR ACHIEVEMENTS

6.1 Among the major achievements of TRC are the following

- Revolutionized the treatment of TB chemotherapy by establishing the value of domiciliary treatment of TB.
- Provided the evidence base for the globally used DOTS strategy by demonstrating the role of supervision and documentation in the treatment of tuberculosis.
- Demonstrated the utility of short course chemotherapy for extra-pulmonary tuberculosis.
- Conducted the largest vaccine trial ever to demonstrate the efficacy of BCG in preventing severe childhood forms of tuberculosis and paved the way for the inclusion of the vaccine in the national immunization programme.
- Demonstrated the significant epidemiological impact of the DOTS strategy in a community setting.
- Provided the nation the first reliable estimate of the burden of Tuberculosis.
- Trained over 5000 RNTCP personnel during the last decade.
- Completed a Phase I of Modified Vaccine Ankara (MVA) HIV -I multi-genic subtype C vaccine (TBC-M4) in 32 volunteers.



## VECTOR CONTROL RESEARCH CENTRE

(Established in 1975)

Address : Indira Nagar, Puducherry INDIA  
Phone : 0413-2272396, 2272397, 227242  
Fax : 0413-2272041  
Email : [vcrc@vsnl.com](mailto:vcrc@vsnl.com)  
Website : <http://www.vcrc.res.in>

### 1. SCOPE OF ACTIVITIES

1.1 Situated at Puducherry, the Vector Control Research Centre (VCRC) is engaged on research on Vector borne diseases such as Malaria, Filariasis, Dengue, Chikungunya, Japanese encephalitis (JE).

### 2. THRUST AREAS

2.1 The following are the thrust areas of VCRC

- ❖ Development of better tools and formulation of strategies for vector borne disease control/elimination.
- ❖ Surveillance tools for monitoring vector resistance to insecticides.
- ❖ Development of Vector management strategies.
- ❖ Development of newer tools/products for vector control.
- ❖ Vector and Parasite diagnosis and genomics.
- ❖ Development of Molecular and immunological diagnostics.
- ❖ Epidemiological studies for optimizing of intervention strategies.
- ❖ Technical support to the national and state programmes.
- ❖ Epidemic/Epidemiological Investigations.
- ❖ HRD activities towards capacity building.

### 3. INTERNATIONAL RECOGNITION

3.1 VCRC is a declared WHO collaborating Centre for Research & Training in Integrated Methods of Vector Control.

### 4. HRD ACTIVITIES

- 4.1. The Ph. D. & P.G. Programmes of the Centre are recognised by the Pondicherry University, Puducherry.
- 4.2 The Centre covers Zoology, Epidemiology, Microbiology and Chemistry under its Ph. D programme.
- 4.3 The Centre also runs the following Post-Graduate Course -
  - o PG Diploma in Medical Entomology

4.4 The following Short Term Training Courses are also being by the Centre -

International: Vector Borne Disease (VBD) Control

National: Epidemiology & control of Vector Borne Diseases

## 5. MAJOR ACHIEVEMENTS

5.1 Among the major achievement of VCRC are the following

- Established a museum and developed DNA barcodes for several species of mosquitoes (vectors) from different regions of the country.
- Developed a production technology for a biolarvicide, *Bacillus thuringiensis* var. *israelensis* transferred to 7 companies, and developed two mosquito pupicides, from *Pseudomonas fluorescens* and *Bacillus subtilis* var. *subtilis*.
- Developed production technologies for Cyclosporin A - an immunosuppressive agent, Thrombinase - a blood clot dissolving enzyme and an enzyme useful in leather industry for dehairing of animal skins.
- Developed an insecticide impregnated fabric trap (IIFT) for sampling indoor resting mosquitoes and a molecular marker detecting insecticide resistance in mosquitoes.
- Developed a synthetic insect repellent (DEPA) and a controlled release formulation of an insect growth regulator (DPE-28) for mosquito larval control.
- Identified two anti-filarial lead molecule, 5-hydroxy-2-methyl-1, 4-naphthalenedione, and a monoterpene with phenolic properties from *Trachyspermum ammi*, an indigenous medicinal plant.
- Developed diagnostics for detecting infective with filarial parasites in vectors by RT-PCR and sibling species of *Anopheles fluviatilis*, a major vector of malaria by PCR (rDNA-ITS2 region based).
- Developed malaria control strategies for coastal (Pondicherry and Rameswaram Island), riverine (Sathanur), and urban (Salem) areas in Tamil Nadu, and tribal areas in Koraput, Orissa.
- Master plans for mosquito control developed for Township, Neyveli Lignite Corporation, Tamil Nadu, Municipal Corporation, Kochi (Kerala), Municipal Corporation, Bangalore (Karnataka) and Municipal Corporation, Vishakhapatnam (Andhra Pradesh).
- Integrated vector control strategies developed for bancroftian filariasis in Puducherry and brugian filariasis in Shertallai, Kerala.
- Developed a community based treatment of malaria cases involving local traditional health providers (Dishari).
- Prepared a lymphatic filariasis transmission risk map for the entire country, using the Geo-Environmental Risk Model (GERM).
- Developed a DEC-fortified salt strategy as a supplement to Mass drug Administration for elimination of lymphatic filariasis.
- Prepared Guidelines on programme implementation for Programme managers and Drug distributors towards capacity building for the elimination of Lymphatic Filariasis (LF).
- Organised Regional Training course on Comprehensive Vector Control for Vector Borne Disease Control Programme Managers.