

वार्षिक प्रतिवेदन
Annual Report
2025-26

INDIAN COUNCIL OF MEDICAL RESEARCH

NATIONAL INSTITUTE OF RESEARCH IN TRIBAL HEALTH

आई.सी.एम.आर – राष्ट्रीय जनजाति स्वास्थ्य अनुसंधान संस्थान जबलपुर (म.प्र.)

ICMR - National Institute of Research In Tribal Health Jabalpur (M.P.)

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Message from the Director



It gives me immense pleasure to present the Annual Report of ICMR-National Institute of Research in Tribal Health (ICMR-NIRTH) for the year 2025–26. This report highlights the Institute's continued commitment to advancing research, innovation, and public health interventions aimed at improving the health of tribal populations across India. During the past year, the Institute has made significant contributions in priority research areas including haemoglobinopathy, communicable and non-communicable diseases, vector borne diseases, maternal and child health and social challenges prevalent in tribal communities. Our multidisciplinary approach, combining field-based epidemiological studies with cutting-edge laboratory research, has enabled us to generate impactful evidence for policy formulation and program implementation.

We have strengthened our collaborations with national and international partners, contributing to capacity building and knowledge exchange. Our scientists have continued to publish high-quality research in reputed journals, while also translating findings into actionable public health strategies. Special emphasis has been placed on addressing conditions such as sickle cell disease, TB elimination efforts, and emerging infectious diseases, which disproportionately affect tribal populations.

The Institute has also expanded its outreach activities, working closely with state health departments and community stakeholders to ensure that research outcomes effectively reach the grassroots level. Training programs, workshops, and awareness initiatives have further enhanced community engagement and public health awareness.

I would like to acknowledge the dedication and hard work of our scientists, technical staff, administrative personnel, and field workers whose collective efforts have made these achievements possible. I also extend my gratitude to the Indian Council of Medical Research for its continued guidance and support.

As we move forward, we remain committed to addressing emerging health challenges and strengthening our role as a center of excellence in tribal health research. We aim to further integrate advanced technologies and community-centric approaches to deliver sustainable health solutions.

I am confident that the Institute will continue to contribute meaningfully towards improving the health status of tribal populations and supporting the nation's public health goals.



Dr. Praveen K. Bharti
Director
ICMR-NIRTH, Jabalpur

Executive Summary
&
Scientist Profile

Executive summary

The research outputs during the year reflect a strong commitment to advancing **public health, biomedical science, and translational research**, with particular emphasis on tribal health and underserved populations in India. The work integrates epidemiology, molecular biology, clinical research, and health systems strengthening to address both communicable and non-communicable diseases of national importance.

A major thrust area has been tribal health, generating critical evidence on persistent inequities in healthcare access and outcomes. Studies have highlighted the increasing burden of hypertension**,** gaps in antenatal care utilization**,** and the high prevalence of undernutrition among Scheduled Tribe populations. Importantly, the research established linkages between food insecurity, poverty, and mental health**,** particularly in the post-pandemic context. Investigations into maternal mental health further demonstrated its association with under-five child mortality**,** emphasizing the need for integrated maternal-child health strategies. Additional work on menstrual hygiene, community governance (PESA Act), and healthcare accessibility provides actionable insights for strengthening public health programs in tribal regions.

Significant contributions were made in sickle cell disease (SCD), a key public health priority in central India. A multicentric framework for newborn screening and early intervention was developed, alongside qualitative assessments identifying barriers and facilitators for program implementation in tribal communities. Studies provided insights into the socioeconomic burden and clinical impact of SCD, while molecular investigations of adhesion molecules advanced understanding of disease pathophysiology. Systematic reviews further strengthened evidence on continuum of care, supporting national-level control strategies.

In the domain of infectious diseases, the institute contributed extensively to the research in the area of tuberculosis, malaria, leprosy, dengue, HIV, and emerging infections**.** Research included genomic and molecular characterization of pathogens, identification of drug resistance markers**,** and validation of novel diagnostic assays**.** Field-based studies on vector ecology**,** malaria drug efficacy, and scrub typhus manifestations strengthened disease surveillance and response strategies. Investigations into microbiome-host interactions and antimicrobial resistance further expanded the translational impact.

The growing burden of non-communicable diseases (NCDs) was addressed through population-based studies on hypertension awareness, treatment, and control, as well as analyses of metabolic syndrome risk factors across tribal and non-tribal populations. Research also highlighted the intersection of infectious diseases and NCDs, particularly through gut microbiome alterations in HIV-associated metabolic disorders**,** underscoring the dual disease burden.

Important findings in maternal and child health included the impact of malaria and malnutrition on pediatric outcomes and the role of nutritional factors such as vitamin B12 in shaping gut

microbiota in children. These studies reinforce the importance of early-life interventions in improving long-term health outcomes.

The institute also made notable advances in translational and precision medicine**,** including studies on pharmacogenomics (e.g., NAT2 polymorphisms) for personalized tuberculosis therapy, and the role of exosomes, extracellular vesicles, in disease diagnosis and therapeutics. Complementary work in vector biology, evolutionary science, and plant-based bioactive compounds contributed to a broader understanding of disease ecology and prevention strategies.

Our institute has significantly contributed towards strengthening of technical teams from various geographical regions in the form of training like malaria microscopy trainings, entomological surveillance and monitoring of insecticidal resistance. We also mentor young minds for future research by virtue of various programs like internship, dissertations, and PhD programs.

Overall, the year's research output demonstrates a cohesive approach that bridges laboratory science, field epidemiology, and public health implementation. These contributions provide robust evidence for policy formulation, program strengthening, and innovation in diagnostics and therapeutics**,** reinforcing the institute's role as a leader in addressing critical health challenges in India, particularly among vulnerable and tribal populations.

Profile of the Scientists currently working at NIRTH



Dr Praveen K. Bharti, Director and Scientist-G, ICMR–NIRTH, Jabalpur, has over 22 years of experience in malaria research and public health, particularly in tribal and hard-to-reach populations. His work has a significantly advanced understanding of malaria epidemiology, transmission dynamics, vector–host interactions, and operational challenges in endemic regions. He has contributed to strengthening surveillance systems and evaluating intervention strategies for malaria elimination under field conditions. Dr Bharti has led multicentric, interdisciplinary projects aligned with national priorities. He has authored over 175 peer-reviewed publications and contributes to policy and capacity building through leadership, mentorship, and research coordination.



Dr. K. B. Saha, Scientist 'G' at ICMR–NIRTH, Jabalpur, Professor-AcSIR, is a distinguished social scientist specialized in anthropology, bioethics and population studies. He holds a Ph.D. from IIPS, Mumbai, and has over two decades of experience in tribal health research. His work focuses on socio-behavioural determinants of health, reproductive health, and disease epidemiology among marginalized communities. He has contributed significantly to malaria control strategies, ethnomedicine, and health-seeking behavior. Dr. Saha has led multiple projects funded by ICMR and other agencies, mentored researchers, and published widely in reputed journals, influencing public health policies aimed at improving healthcare access and outcomes.



Dr. Vijay Nema, PhD is working as Scientist 'F', Associate Professor-AcSIR, who joined ICMR-NIRTH in April 2025 after serving more than 16 years at ICMR-NITVAR, Pune, is a microbiologist by education and has research experience in the areas of Molecular Biology, Bioinformatics, Metagenomics etc. He continues to work on the discovery research while carrying forward his projects on Tuberculosis drug targets. After joining this institute, he has taken up various institutional responsibilities and is currently exploring areas of research in Tribal health as per the mandate of the institute along with his continuous support to the national programmes like MRHRU, NJORT and Wastewater surveillance studies. He is currently guiding 03 PhD scholars at various stages of their research. During last one year, he has published 10 articles in reputed journals, book chapter and has registered a design to the Indian patent office being the mentor of engineering and biotechnology students from Ajinkya DY Patil University Pune.



Dr. Pushpendra Singh, PhD, is working as Scientist 'F' at ICMR-NIRTH, Jabalpur, India and Associate Professor- AcSIR. His research focuses on Microbial Genomics, Molecular Epidemiology and Anti-Microbial Resistance (AMR). Major thrust areas of research work are on Molecular diagnostics for infectious diseases such as Leprosy, Tuberculosis, Scrub typhus and viral diseases. He is also joined in his research efforts by a team of young researchers in the Virology and Zoonoses laboratory where diagnosis and research work on more than 20 different viruses are performed regularly. Dr Singh has contributed to establishing a research group working on Leprosy research, which is supported by 3 international funding agencies and many national and state level funding agencies such as ICMR, DHR, DBT and the Govt. of Madhya Pradesh. He is also mentoring DBT-Ramalingaswami Fellows and DBT-BioCARe awardee Scientists at ICMR-NIRTH and has supervised ICMR-SRF and ICMR-Research Associates.



Dr Dinesh Kumar, presently working as Scientist 'F' at ICMR-NIRTH, Jabalpur. He has completed 25 years of service and have experience in socio-behavioral, health system and implementation research. Dr Kumar has published several research articles in national and international journals. He has received grants for research in tribal health other than ICMR, from the Ministry of Tribal Affairs (MoTA) and the National Academy of Sciences, India (NASI) in the capacity of Principal Investigators. He has completed several National Taskforce projects like Universal Health Coverage (UHC), COVID, MCH, and AMR as PI and Co-PIs. He has been awarded 2 "International scholarships" from WHO/TRD, Thailand, for Participating in the 6th FERCAP (Forum for Ethical Review Committees in Asia and the Western Pacific), and Royal Society of Tropical Medicine and Hygiene (RSTMH), London, UK for participating in the Centenary Celebration Meeting on the Millennium Development Goals.



Dr. Rituraj Niranjan, Scientist 'E' at ICMR–NIRTH, Jabalpur and Assistant Professor- AcSIR. He obtained his Ph.D. from JNU and completed postdoctoral training in leading US institutions. He is an expert in cellular and molecular immunology. His research focuses on immunopathogenesis of dengue, neuroinflammation, fibrosis and nanoparticle-based drug delivery. He has significantly contributed to understanding IL-15 in immune disorders and matrix metalloproteinases in dengue severity. Ranked among the top 2% scientists globally for the year 2025. He has over 40 publications. His current work explores novel therapeutics, autophagy, and medicinal plant-based interventions for infectious and inflammatory diseases.



Dr. Vidhan Jain, Scientist 'D' at ICMR-NIRTH, Jabalpur, leads the TB Culture & Drug Susceptibility Testing Lab and SRL-HIV. His research focuses on microbiology and immunology of major infectious diseases, particularly tuberculosis and malaria, with emphasis on biomarkers for adverse outcomes. He completed his Ph.D. at ICMR–NIRTH and has contributed to both field- and laboratory-based studies published in reputed journals. He has presented his research at national and international forums and actively mentored students. His goal is to advance clinically relevant research in TB and malaria.



Dr. Ravindra Kumar, Scientist 'D' at ICMR–NIRTH, Jabalpur, and Assistant Professor at AcSIR, is a specialist in genetics and molecular haematology. With over a decade of experience, his research focuses on thalassemia, sickle cell disease, and anaemia, particularly in tribal populations. He has led and contributed to multiple projects funded by ICMR, DST, DBT, and NHM. Dr. Kumar has over 130 publications and actively mentors postgraduate students. Recognition of his excellence is evident in numerous awards, including the **Santosh and Arjun Dev Taneja Memorial Award for Excellence (2025)**, the **Achiever Award by Thalassemics India (2023)**, and the **Young Scientist Award under DST-Fast Track Scheme (2012)**. Dr Kumar has contributed to the national Sickle Cell Anemia Elimination guidelines. His work advances molecular diagnostics and improves management of genetic blood disorders in India. Currenly Dr Kumar is mentoring three Ph.D, students.



Dr. Anil Kumar Verma is working as Scientist 'D' at ICMR-NIRTH, Jabalpur and Assistant Professor at AcSIR, specializing in Life Sciences. He earned his Ph.D. from Jawaharlal Nehru University. His research focuses on malaria diagnostics, infectious diseases, and public health interventions, with publications in reputed journals. Dr. Verma has played a key role in multiple WHO, ICMR, and Industry funded projects, working on malaria diagnosis, treatment efficacy, antimicrobial resistance, and disease elimination strategies. His contributions include developing novel diagnostic tools and strengthening disease surveillance systems in malaria research. He has been recognized with several prestigious awards, including the Dr. D.S. Kothari Post-doctoral Fellowship (UGC), ICMR travel grants, etc. Dr. Verma remains committed to advancing research, training, and public health outcomes in alignment with the mandate of the Institute.



Dr. Suyesh Shrivastava, MBBS, MD, serving as Scientist 'D' at ICMR-NIRTH, Jabalpur. Dr Shrivastava specialization lies in epidemiology, non-communicable diseases (NCDs), and sickle cell disease, where he focuses on innovative clinical trials and public health strategies for rural, tribal and urban populations. He has been involved in various outbreak investigations in various urban, rural and slums areas of central India. As nodal officer of MRHRU, located at Datia (M.P.) and Durg (CG), he collaborate closely with Datia Medical College and JN medical college, Raipur on multiple projects, including an intensive population-based health survey conducted in 2025-26. His work drives evidence-based interventions to combat NCDs and hematological disorders in underserved communities.



Dr. Satyendra Pandey is serving as Scientist 'C' at ICMR-NIRTH, Jabalpur, Madhya Pradesh. He has extensive expertise in entomology and vector-borne diseases, with over 14 years of professional experience under the National Vector Borne Disease Control Programme (NVBDCP), National Health Mission, Madhya Pradesh. He made significant contributions to vector surveillance, disease control strategies, guideline development, and programme implementation across diverse operational settings. Dr. Pandey has been awarded multiple commendations and certificates in recognition of his outstanding contributions to vector-borne disease control programmes. At ICMR-NIRTH, he is actively involved in multidisciplinary research encompassing field-based investigations and laboratory studies in entomology and public health. He also serves as the Nodal Officer for the Master of Public Health (Entomology) programme, contributing to academic coordination, training, and capacity building. Dr. Pandey remains committed to advancing research, training, and public health outcomes in alignment with the mandate of the Institute.



Dr. Harshwardhan Vijay Shende is a social scientist working as Scientist 'B' at the ICMR–NIRTH, Jabalpur. He holds a PhD and MPhil in Rural Development from the Tata Institute of Social Sciences (TISS) Mumbai, Tuljapur campus. His research focuses on the psychosocial dimensions of chronic diseases, particularly among tribal and marginalised populations. He has a strong academic and research interest in mental health, including anxiety, depression, psychological distress, and the role of social stigma in shaping health outcomes. His work also explores social determinants of mental health and health inequities, with an emphasis on developing culturally appropriate public health interventions. His work drives evidence-based interventions to combat NCDs and hematological disorders in underserved communities.



Dr. Vijay Pratap Singh, PhD, is a DBT Ramalingaswami Fellow at ICMR NIRTH, Jabalpur, India. Dr. Singh completed his PhD at CSIR-CCMB, Hyderabad, followed by postdoctoral research at the Stowers Institute for Medical Research, Kansas City, USA. He has contributed significantly to the field of maternal child health, publishing research articles in leading journals and authoring book chapters on reproductive health. His research focuses on genome maintenance in placental development, a critical aspect of maternal-fetal health. The placenta, a highly polyploid organ, is vulnerable to genomic instability, which can impact pregnancy outcomes, fetal growth, and maternal well-being. Using advanced molecular and genetic tools, Dr. Singh investigates key regulators of genome stability in placental cells. His work explores how DNA damage and repair mechanisms influence placental aging, parturition, and embryo development, providing new insights into pregnancy complications and their connections to aging and cancer and has been funded by DBT, ANRF and ICMR. By deepening the understanding of placental biology, his work paves the way for potential therapeutic interventions to improve pregnancy outcomes and address broader health challenges associated with genomic instability.

Section 1- ICMR Funded Projects

1.1 Project:

Title: Development of novel molecular diagnostic target for detection of Scrub typhus (Development Research)

Status: New Initiative

PI: Dr. Pushpendra Singh, **Co-PI:** Dr. Manjunathachar HV, Dr. Vijay Pratap Singh, Dr. Satyendra Pandey

Year of initiation / completion: 2025 - 2028

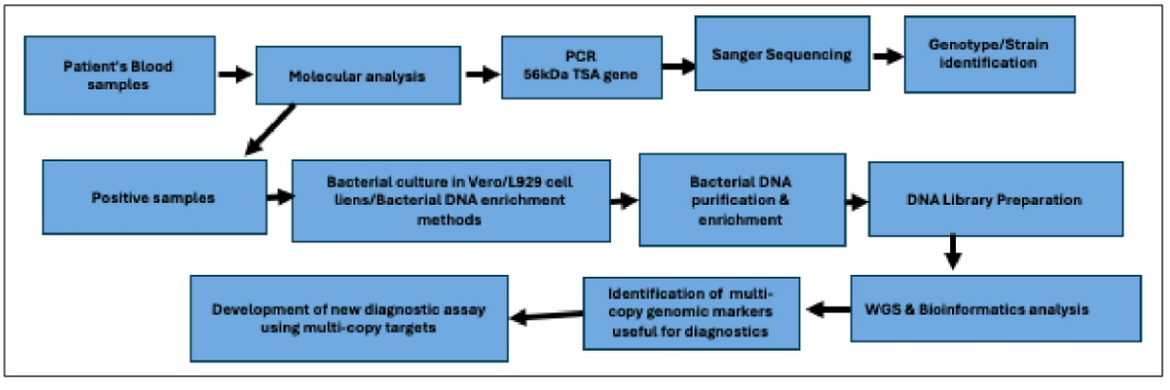
Funding source: ICMR

Background with objective: Scrub typhus is re-emerging zoonotic disease poses significant diagnostic challenges, especially in resource-limited or rural settings, where early detection is hindered by the limitations of current serological and molecular techniques. This study aims to develop a more reliable and accessible diagnostic tool based on multicopy sequences to improve the timely detection of scrub typhus, addressing a critical need in resource-poor settings where differential diagnosis is difficult.

Objectives:

1. Screening of Orientia tsutsugamushi in the acute undifferentiated febrile illness (AUFI) cases using conventional and novel genomic targets and determining their analytical sensitivities
2. Comparative genome-wide analysis of Orientia tsutsugamushi strains and identification of various multicopy sequences in all strains from Central and South India.

Methodology/ work progress/results: Below are details for methodology



Conclusion: Utilizing multi-copy genomic targets for detecting *O. tsutsugamushi* will significantly enhance the sensitivity and specificity of molecular assays compared to traditional single-copy targets, such as 56 kDa, groEL, and 47 kDa. Comparative genomic analysis of *O. tsutsugamushi* strains from various geographic regions will reveal novel multi-locus targets, improving early diagnosis of scrub typhus and ultimately reducing the disease burden.

Future directions: Using multi-copy genes will help detect *O. tsutsugamushi* more accurately than current methods. Developing an RPA-based test can provide a fast, simple, and reliable diagnosis of scrub typhus, especially in low-resource settings.

1.2 Project:

Title: Role of DNA damage response in regulating virus replication in the trophoblast cells among pregnant women with febrile illness during first trimester (Discovery Research)

Status: New Initiative

PI: Dr. Pushpendra Singh, **Co-PI:** Dr. Vijay Pratap Singh

Year of initiation/ completion:2025- 2028

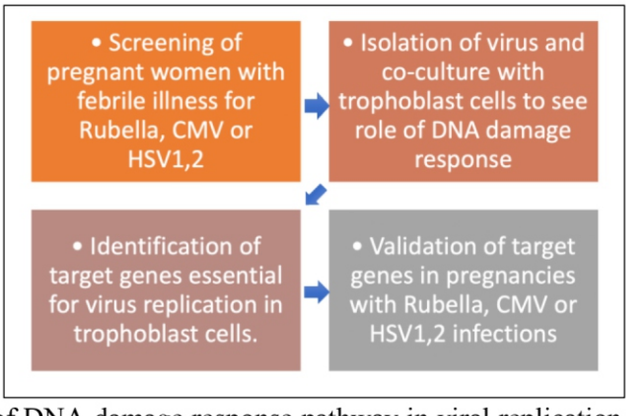
Funding source: ICMR

Background with objective: Viral infection during pregnancy severely affects fetus development and is one of the leading causes of congenital diseases, preterm birth, and low body weight. But the mechanism of transplacental transfer of viruses and their replication in placental cells are unknown. We hypothesized that placental cells use ATM DNA damage response pathway to replicate viruses and leading to congenital abnormalities and preterm birth.

Objectives:

1. To determine the serological evidence of the viral infections in pregnant tribal women during their first trimester.
2. To identify DNA damage response pathway activated with viruses using trophoblast cell culture model.
3. To perform molecular characterization of viral exposed placenta using gene expression changes and histopathology.

Methodology/ work progress/results: Methodology is mentioned in the diagram.



Conclusion: With the emergence of new viruses, it is essential to design new intervention to treat viral infections. At the completion of the proposed research, our expected outcomes are to identify molecular regulators of viral replication in the placenta. These results are expected to have an important positive impact because they will provide foundational knowledge regarding the role of DNA damage response pathway in viral replication in the placental cells.

Future directions: This will help us to identify and validated molecular regulators which can be targeted in pregnancy during viral infection. Further, knockout mice related to DNA damage response pathway will be used to strengthen our results and taking it to next level with human clinical trials.

1.3 Project:

Title: Exploration and validation of new drug targets for tackling antimicrobial resistance in *Mycobacterium tuberculo*sis. (Discovery Research)

Status: Ongoing

PI: Dr. Vijay Nema

Year of initiation/ completion: 2024-2027

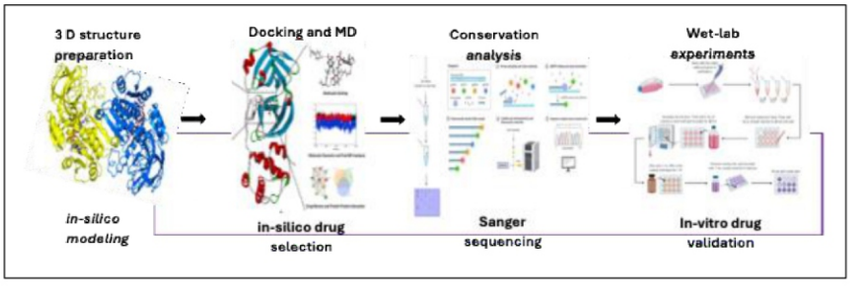
Funding source: ICMR IRG

Background with objective: In this study we aim to identify the crucial enzymes of Mtb and assess their potential as drug targets. Working from the structure analysis and deciphering ligand-binding sites would allow further work on these molecules as a drug target. By taking lead from this observation, we aim to identify conservation, and inhibitor to eradicate the TB bacilli from outside and inside of the cell compartments. Upon successful elucidation of the structure, we expect to find some inhibitor molecules against the targets which can be used as a new drug in the future.

Objectives:

i) Preparation of 3D structure of target enzymes by In-silico modeling
ii) High throughput screening and In-silico validation of Inhibitory compounds
iii) Target enzyme gene conservation study to prove the essentiality
iv) Checking the anti-tuberculosis activity of the promising molecules as suggested by in-silico studies

Methodology/ work progress/results:



1. Preparation of 3D structure of target enzyme by In-silico modeling or other: The available 3D crystal structures of the identified proteins would be prepared for docking studies. For non-available ones 3D structure of the target will be prepared by Protein expression and NMR or crystallography.
2. Screening and In-silico validation of Inhibitory compounds: Compound libraries screening to obtain potential hits for the target sites.
3. Target enzyme conservation study to prove the essentiality: by gene sequences and mutation analysis.
4. Validation of anti-tuberculosis activity of the promising molecules as suggested by in-silico studies: Cell-based toxicity testing, anti-tuberculosis activity of the promising molecules and infection assays.

Conclusion: Target conservation analysis is over and 05 targets were found to be well conserved. Identification of inhibitors and inhibition analysis for two targets is over. Discovery of VMP-7 as a novel GlgE targeted therapeutic candidate for tuberculosis intervention is under communication.

Future directions: Other target conservation studies are ongoing and docking for other targets with libraries may give us more inhibitors for in-vitro and cell based testing.

1.4 Project:

Title: CpsA of Mycobacterium tuberculosis: Exploration of its potential as a novel drug target (Discovery Research)

Status: Completed in 2026

PI: Dr. Vijay Nema

Year of initiation/ completion: 2023-2026

Funding source: ICMR Extramural

Background with objective: Two major hetero-polysaccharides are present in the cell envelop core of *M.tb* are Arabinogalactan (AG) and Peptidoglycan (PG). AG and PG are covalently attached, and for their attachment, CpsA plays an essential role as ligase for their attachment. CpsA belongs to the LytR-CpsA-Psr (LCP) family that is found in most Gram-positive bacilli. These enzymes play a vital role in glycolpolymer transfer reaction in various families of the microbes. To check the clinical importance of the CpsA in *M.tb*, more studies about the active site and critical residues are necessary. A detailed study is required to gain more information about gene essentiality, conservation pattern, identification of potential inhibitors, and creating avenues for new drug discovery. Hence the study was proposed with below **objectives:**

I. To understand the conservation pattern of *cpsA* gene in various *Mycobacterium tuberculosis* (*M.tb*) strains.

II. Optimization of CpsA protein expression and preparation of 3D structure.

III. In silico exploration of potential inhibitors against CpsA.

IV. In-vitro validation of potential inhibitor for CpsA.

Methodology/ work progress/results: In this research work, we characterized CpsA protein by expressing it in *E. coli* and attempting 3D structure determination through crystallization. We also explored conservation of cpsA gene across clinical *M.tb* isolates to assess its potential as drug target.

Conclusion: Analysis of cpsA from 75 clinical *M.tb* isolates (WT, MDR, XDR) and 200 BV-BRC genomes showed 71/75 clinical isolates fully conserved at nucleotide level vs H37Rv; 4 isolates had SNPs at positions 131, 453, 417, 1321. Only 2/4 SNPs changed amino acids (CH-12: Y44F; CH-54: I441L). BV-BRC analysis found 15/200 mutated, 12 silent at pos. 453. Full-length cpsA (1.539 kb) was cloned into pET28a (NdeI/HindIII), expressed in BL21-DE3/RIPL/Rosetta (0.5 mM IPTG), purified using Ni-NTA (optimal: 300 mM NaCl + BME), confirmed monomeric by SEC-MALS (56.7 kDa). Truncated CpsA 1-48 also expressed/purified similarly. Crystallization trials (10-70 mg/mL, sitting drop, 20°C) across multiple screens no diffracting crystals despite extensive optimization. Project completed per 3-year tenure (2023-2026), delivering conserved gene data, optimized expression/purification protocols, and protein stocks for future structural studies.

Future directions: Considering the high conservation of the cpsA gene across clinical isolates, continued structural and functional investigation of this protein may provide valuable insights for the development of new therapeutic strategies against drug-resistant tuberculosis.

1.5 Project:

Title: A non – inferiority randomized trial to assess the efficacy of 10 mg/kg/day versus 20 mg/kg/day hydroxyurea in the treatment of sickle cell disease of tribal and non-tribal areas in India.

Status: Ongoing

PI: Dr Rajasubaramaniam S*, Dr. Suyesh Shrivastava, Co-PI: Dr. Ravindra Kumar * superannuated on 31st Dec 2025

Year of initiation: 2022

Funding source: ICMR NIIH

Objectives:

Primary objective: To determine the efficacy of low dose 10mg/kg/day hydroxyurea vs. standard dose 20mg/kg/day hydroxyurea in treatment of SCD patients

Secondary Objectives:

I. To measure the incidence of vaso-occlusive crises, transfusion requirements, requirement of hospitalizations, infections and growth of children in both the arms.
II. To compare the adverse effects of low dose hydroxyurea with standard dose Hydroxyurea.
III. To look at the role of genetic modifiers in ameliorating the disease severity.

Methodology: This isbe a prospective non- inferiority trial to assess the low dose(10mg/kg/day) hydroxyurea treatment vs. standard dose(20mg/kg/day) hydroxyurea in children with sickle cell disease, using a randomized open labelled treatment assignment with allocation concealment.

Conclusion: In this non-inferiority randomized trial (84 patients enrolled: 41 in Arm I, 43 in Arm II), safety profiles were acceptable, with 14 serious adverse events, 31 adverse events, and 10 withdrawals. Diagnostic assessments revealed: transcranial Doppler (74/84 patients, all ages; 3 advised magnetic resonance imaging); ultrasonography (greater than 5 years, 41/43; abnormalities in 25); echocardiography (greater than 5 years, 41/43; abnormalities in 13); X-radiography (greater than 10 years, 7/15; no abnormalities); iron studies and vitamin B12 (78/84; 1 with decreased ferritin, serum iron, and transferrin saturation, others with elevated ferritin and low serum iron and transferrin saturation).

Future Directions: Till June 2027 we will follow all these 74 patients including all recommended tests.

1.6 Project:

Title: Effectiveness of a Digital Diabetes Prevention Initiative in Indian Cities: Hybrid Type 2 Pragmatic Cluster-Randomized Control Trial using mHealth (ICMR-DPCI) in Jabalpur

Status: Ongoing

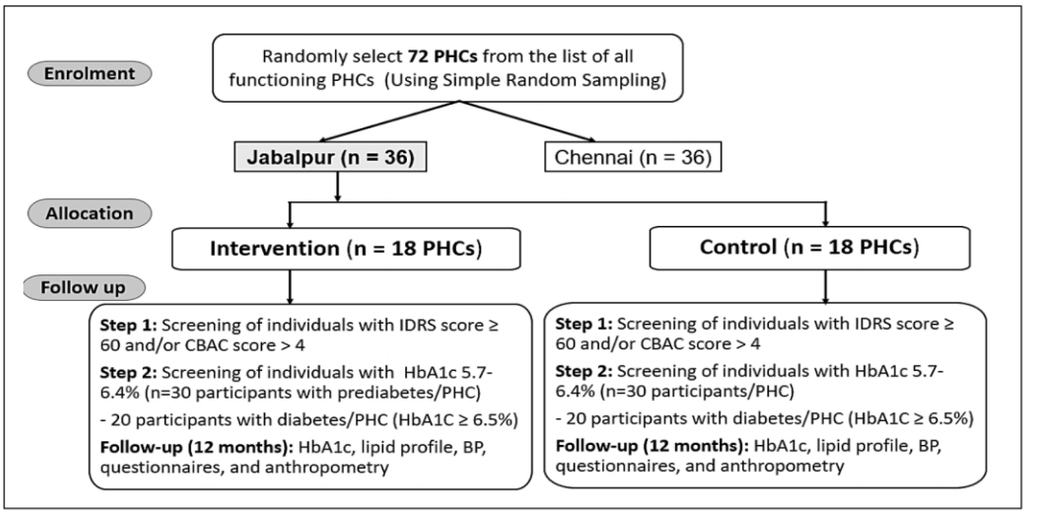
PI: Dr. Suyesh Shrivastava, **Co-PI:** Dr. K.B. Saha

Year of initiation: 2025

Funding source: ICMR

Background with objective: Digital-Diabetes Prevention and Control Initiative (ICMR-DPCI) is an implementation trial to evaluate the effectiveness of lifestyle modification delivered through WhatsApp (mHealth) for the prevention of diabetes among individuals with higher risk for developing diabetes within public primary health facilities of Chennai, Tamil Nadu and Jabalpur, Madhya Pradesh.

Objective: To determine the effectiveness of lifestyle modification using mHealth (ICMR-DPCI) on one-year diabetes incidence versus standard care in public primary care.



Methodology:
This is a two-phased mixed-methods study. Phase 1 focuses on co-design and intervention refinement. Phase 2 involves implementing the 12-month digital diabetes prevention initiative, assessing outcomes at 12 months post-randomization, conducting nested economic analysis, and dissemination.

Work Progress: Regulatory permissions have been obtained. A multi-stakeholder co-design workshop and two rounds of consumer profiling were conducted in Jabalpur and Chennai. Training on POC HbA1c and lipid profile devices was delivered in Chennai. Ongoing visits to PHCs and UPHCs focus on stakeholder sensitization and pre-implementation assessments.

Conclusion: During the reporting period, significant formative assessments relevant to this implementation trial were completed, strengthening the contextual understanding and stakeholder engagement.

Future directions:

- mHealth intervention refinement based on findings from Consumer Profiling activity.
- The implementation of the project will start from September 2026.

1.7 Project:

Title: Pan India Surveillance for respiratory viruses through DHR-ICMR VRDL Network

Status: Ongoing

PI: Dr. Pushpendra Singh

Year of initiation: 1st year (15th April 2025 to 14th April 2026)

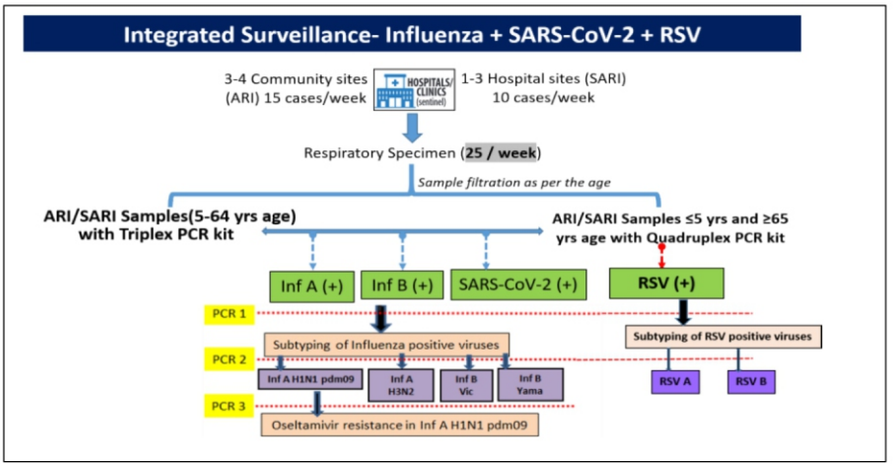
Funding source: ICMR/DHR

Background with objective: 1) To capture the trends of symptomatic illness, hospitalizations, and deaths

in SARI and/or ARI patients, infected with Influenza, SARS-CoV-2 and/or RSV, in selected geographical locations, both in healthy and co-morbid individuals

2) To document the trends of circulation of Influenza and SARS-CoV-2 viruses throughout the year and by seasonality
3) To identify different circulating types and subtypes of influenza and SARS-CoV-2 viruses
4) To characterize the circulating strains of Influenza virus for antigenic and genetic types for countrywide representation of possible candidate viruses for influenza vaccine recommendations in the upcoming season
5) To monitor emergence of antiviral resistance in circulating Influenza virus strains
6) To detect any untypable or novel strains of Influenza virus

Methodology: A total 488 samples were tested. Results are highlighted in the table.



Results: Following number of samples were tested.

Target Agents	Influenza A/B	SARS-CoV-2	H1N1	H3N2	Yamagata	Victoria	RSV A	RSV B	HMPV	Adeno
Sample tested	488	488	06	06	4	4	144	144	27	31
Positive	07	0	0	04	0	01	11	22	01	02
Negative	481	488	06	02	4	03	133	122	26	29

1.8 Project:

Title: Study of endothelial adhesion molecules for vaso-occlusive crises in the SCD patients.

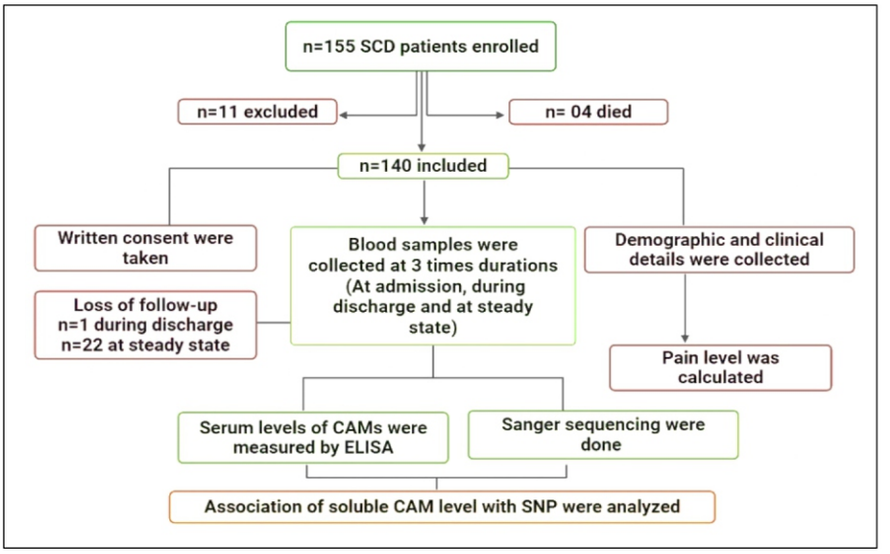
Status: Completed

PI: Dr Ravindra Kumar, **Project Fellow:** Dr Parul Gupta

Year of initiation: 2022

Funding source: ICMR, New Delhi

Background with objective: Sickle cell disease (SCD) is a hereditary haemoglobin disorder marked by recurrent vaso-occlusive crises (VOC), which are driven by inflammation and abnormal adhesion of blood cells to the vascular endothelium. Endothelial adhesion molecules such as E-selectin, P-selectin, VCAM-1 and ICAM-1 play a crucial role in the disease severity. However, variability in VOC frequency among patients suggests that circulating levels of these molecules and genetic variations may influence clinical outcomes. Therefore, this study aimed to determine the occurrence pattern of VOC in SCD patients, evaluate the association of key endothelial adhesion molecules with VOC, and investigate the relationship of common SNPs in VCAM1, ICAM1, SELP and SELE genes with their serum levels during crisis, after crises and steady state.



Methodology/ work progress/results: Sickle cell disease patients were recruited from NSCB Medical College, Patients with diabetes mellitus, hypertension, coronary artery disease, renal failure, pregnancy were excluded from this study. Patients below the age of 5 years were excluded. During the study period, a total number of 140 subjects were ecruited. Serum was separated from whole blood and stored at -80°C. The serum levels of VCAM-1, ICAM-1, P-selectin and E-Selectin of SCD patients and controls was measured by ELISA method using commercially available human VCAM-1, ICAM-1, P selectin and E-Selectin ELISA kits respectively. Genomic DNA was extracted from whole blood sample using standard salting out method. Sanger sequencing method was used for the identifications of different SNPs present in VCAM1, ICAM1, SELE and SELP gene. **Result:** The SNPs SELP: NM_003005.4: c.590_49G> C (p-value = 0.038), SELP: NM_003005.4: c.625G>A (GG) (p-value = 0.018), SELE: NM_000450.2: c.1723C>T (p-value = 0.048), SELE: NM_000450.2: c.109+138A>C (p-value < 0.0001), SELE: NM_000450.2: c.422_25T>C (p-value <0.0001), SELE: NM_000450.2: c.529+15T>C (p-value = <0.0001) and SELE: NM_000450.2: c.445A>C (p-value = 0.003), were found to be significantly associated with VOC. These significant SNPs may warrant further investigation to understand their potential role in influencing VOC severity.

Conclusion: The study showed that vaso-occlusive crisis in SCD is closely associated with endothelial dysfunction and increased circulating adhesion molecules. Serum levels of P-selectin, E-selectin, ICAM-1, and VCAM-1 were elevated in SCD patients, particularly during crisis, supporting their role in the pathophysiology of VOC. The study also identified several SNPs in SELP, SELE, ICAM1, and VCAM1 that showed associations with CAM levels, VOC, and pain severity, suggesting a possible genetic contribution to inter-individual variability in disease manifestations. However, as many associations did not remain significant after multiple-testing correction, these observations should be interpreted cautiously.

Future directions: Although this study established the occurrence pattern of VOC in SCD patients and demonstrated altered circulating levels of endothelial adhesion molecules during crisis, discharge, and steady state. Further research work is needed to strengthen the translational relevance of these findings. Future studies should include a larger multicentric cohort with longer follow-up to validate the observed associations between VOC severity and soluble adhesion molecules such as P-selectin, E-selectin, ICAM-1, and VCAM-1. Since some SNPs showed nominal associations with CAM levels and VOC but lost significance after Bonferroni correction, these genetic findings require validation in larger populations with better statistical power.

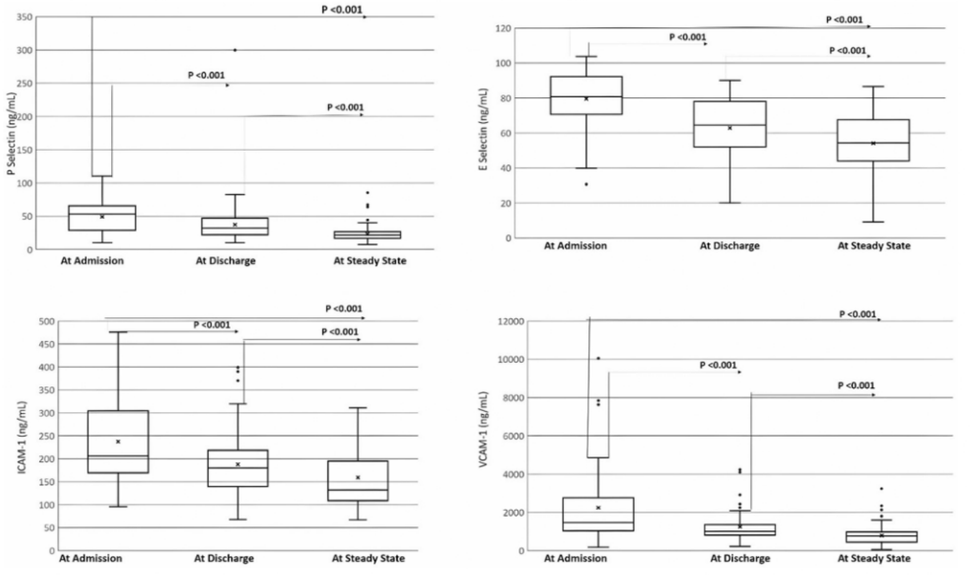


Figure showing plasma levels of P-selectin (1), E-selectin (2), ICAM-1 (3) and VCAM-1 (4) in the SCD patients (At admission n=140, At discharge n=139, At steady state n= 118).

1.9 Project:

Title: Implementation research for optimizing the comprehensive Sickle Cell Anemia (SCA) care services under the national SCA elimination mission

Status: Ongoing

PI: Dr. Ravindra Kumar, **Co – PI: 1.** Dr. Kalyan B. Saha, **2**. Dr. Nishant Saxena, **3**. Dr. Harshvardhan Shende, **4**. Dr. Suyesh Shrivastava,

Year of Initiation: 2025

Funding Source: ICMR, New Delhi

Background with Objective: Sickle Cell Disease (SCD) is a significant public health concern in high-burden regions, requiring early diagnosis, continuous care, and efficient health system support. Despite existing national and state programs, gaps in facility preparedness and service delivery hinder optimal outcomes. This implementation project aims to strengthen health system readiness, standardize service delivery, and bridge policy–practice gaps. It focuses on improving awareness of SCD, screening, treatment, care, and welfare services for SCD patients. The objectives of the project are as follows

1. To undertake formative research to optimize "National Sickle Cell Anemia Elimination mission."
2. To co-develop & co-implement the strategy with state government to optimize delivery of various components of mission.
3. To evaluate the effectiveness of the implementation strategy.

Methodology: Mixed method approach was used for the formative research. A total 4054 Community participants were surveyed in 80 villages of Tamia block of Chhindwara District. **Results**: Data analysis underscored need for awareness of community and screening activities with capacity building of the healthcare workers. In-depth interviews of 22 patients, and 86 other health care workers, along with Sarpanch achieved.



Figure: Glimpse of Household Survey

Conclusion: Primary data analysis highlighted need for health system strengthening for better treatment facilities with transportation support and coordination with Panchayat system.
Future directions: The planned interventions include community awareness and demand generation, decentralized screening and diagnostics, PHC-level care and follow-up, and Referral transport and coordination.

1.10 Project:

Title: PAN India Antigenic Characterization of Dengue Viruses: Early warning signal for a potential pandemic.

PI: Dr. Rituraj Niranjan (PI), (multicentric project, site PI for Jabalpur)

Status: Ongoing

Year of Initiation / completion: 2024-2027

Funding Source: PM-ABHIM

Background: Emerging and re-emerging infectious diseases caused by flaviviruses pose significant challenges to the human population all over the world. Flaviviruses (such as Dengue, Japanese encephalitis, Zika, and West Nile) are RNA viruses, transmitted mainly by mosquitoes. Genomic mutation of RNA viruses is a natural phenomenon of evolution for their survival that results in antigenic variant strains and hence escape from the host immune response. The endemic nature of Flaviviruses in India combined with JE vaccination in certain regions of India and the looming availability of Dengue and Zika vaccines in near future, make a perfect recipe for the antigenic variance of these viruses resulting in the evolution of new strains that may result in an epidemic. Furthermore, since Dengue/JE/Zika/WNV share antigenic properties,

the infection of one virus may pre-dispose the generation of antigenic variants of other viruses upon subsequent infection. Early recognition of antigenic variant strains, causing an outbreak, will facilitate rapid response before the outbreak turns into an epidemic or pandemic.

Objectives:

1. To study antigenic characteristics of dengue viruses circulating across India.
2. To develop Spatio-temporal antigenic maps on a real-time basis to indicate the antigenic evolution of dengue viruses across India

Methodology:

1. Collection of samples- Collaborating with the health care authorities for sample collection with all permissions and ethical clearances. With proper storage and transportation of samples to the laboratory.
2. Confirmation by Diagnostic test - Confirming the Dengue positive sample by various diagnostic tests such as NS1 ELISA, IgM ELISA and IgG ELISA.
3. 3.Virus isolation and Propagation- Isolating the virus from collected samples by culture method and propagating it in suitable cell lines to obtain sufficient viral material for further analysis.
4. Serotype determination: Determining the Serotype of sample collected by RT- PCR (Lanciotti et al., 1992). Oligonucleotide consensus primers were designed to anneal to any of the four dengue virus types and amplify a 511-bp product in a reverse transcriptase-polymerase chain reaction (PCR) and then type-specific primers are used for second round of amplification (Nested PCR).
5. Analysis by Sequencing: Determine the antigenic properties of different dengue virus strains and serotypes by sanger sequencing. Compare the sequences of circulating viruses with historical strains to identify potential antigenic drift.

Results: This year a total of 853 samples have been collected from various locality in nearby regions of Jabalpur, with all necessary approvals and ethical clearance. All collected samples were subjected to an NS1 ELISA test for confirmation. To obtain a sufficient viral material for further analysis, Only NS1 positive samples were propagated in C6/36 cell line which shows great susceptibility for Dengue virus growth. To get a high titer of virus, the positive serum samples were passaged several times. We have 12 successfully cultured isolates so far and others are in process. To ensure the virus isolation and propagation, these harvested samples were tested with NS1 ELISA. For titration of these isolates, $TCID_{50}$ is in process.

These samples were serotyped using Reverse Transcriptase PCR, as described by Lanciotti et al. (1992). RNA extraction was done by using Qiagen viral RNA extraction kit. By ensuring the quality of extracted RNA using nanodrop, this RNA proceeded to RT-PCR. Correctly sized DNA product (511 bp) was obtained for each of the dengue viruses after amplification with consensus primers Dl and D2. Each DNA product was correctly typed with a second round of amplification with the type-specific primers. Results revealed that all four serotypes are circulating in Jabalpur and adjoining rural areas. DENV-3 being the most predominant among all. Some of the patients were found positive for co-infection (need confirmation). As a part of this project, a total of 30 samples from various locations and age groups of patients were sent to NIRBI for WGS.



Figure showing control C6/36 cells and Dengue Infected C6/36 cells showing Cytopathic effect (CPE)

Future directions: This study has substantial translational potential, linking large-scale genomic and antigenic research with actionable public health outcomes. By generating high-resolution, Pan-India data on dengue virus genomic diversity and antigenic evolution, the project will create a robust evidence base to guide vaccine development and therapeutic strategies.

1.11 Project:

Title: AES therapeutics: study on the astrocyte specifics mechanisms of neuroinflammation in response to Japanese encephalitis virus/OT antigens and its modulation by molecular and pharmacological inhibitors
Status: Ongoing
PI: Dr. Rituraj Niranjan
Year of Initiation/Completion: 2025-2028
Funding source: ICMR
Background & Objectives: Japanese encephalitis virus (JEV) and Orientia tsutsugamushi (OT) are predominantly known to cause AES in India including tribal populations, however their mechanisms largely unknown. Protein antigens of JEV (Nonstructural protein-1, 5 and Envelop protein) and *O. tsutsugamushi* (56 kDa, Sta22 and Anks) that are suspected to cause the pathophysiology of AES, remains elusive. It is speculated that, AES may happen due to immune dysfunction caused by JE and O. tsutsugamushi antigens alone or in different combinations with other antigens, but the exact mechanism is still not cleared. Thus, this study is planned to understand the mechanisms of neuroinflammation, primarily due to JEV and OT antigens and role of inhibiters.

Objectives:

1) To investigate the role of peripheral immune system (innate immune cells and mediators) in JE and scrub typhus patients' samples associated to neuroinflammation.
2) To understand the astrocyte specific mechanisms of neuroinflammation due to JEV and *O. tsutsugamushi* (OT) antigens in experimental models.
3) To explore the anti-neuroinflammatory potential of molecular and pharmacological inhibiters against JEV/OT antigens to elucidate better drugs for AES therapeutics.

Methodology/Work Progress/Results (in form of flow diagram, if any):

1) Project staff recruitment and procurement of resources.
2) Clinical sample collection and processing from different centers.
3) ELISA was used for serological and molecular confirmation.
4) In-vitro culture assays were carried out using neuronal cell line.
5) Gene expression and molecular analysis was done by PCR technique.
6) Data Analysis and Interpretation.

Results: Trained project staff were recruited, and essential laboratory infrastructure was established. Required reagents, including ELISA kits, primers, molecular biology reagents, antibodies, and cell culture materials, were procured to ensure uninterrupted experimental workflow. Cerebrospinal fluid (CSF) and peripheral blood samples are being collected from clinically diagnosed AES patients across multiple collaborating centers. Samples are processed under sterile conditions, aliquoted, and stored at appropriate temperatures (−80°C for long-term storage) to preserve biomolecular integrity. We have received ELISA kits recently and collected samples are subjected to ELISA for confirmation of JEV and Scrub Typhus (ST) infection. Neuronal cell lines are cultured under standard conditions. These cells are exposed to JEV and ST CSF samples to mimic infection-induced neuroinflammatory conditions. RNA is extracted from treated and control cells, followed by cDNA synthesis. PCR is performed to analyze the expression of key inflammatory and neurodegenerative markers such as MMPs (e.g., MMP-2, MMP-9). All experimental data are statistically analyzed to identify significant differences between control and treated groups. Correlations between clinical findings and in-vitro results are explored to establish translational relevance.

Conclusion: Preliminary progress indicates successful establishment of clinical sample collection, pathogen confirmation, and in-vitro experimental models.

Future Directions: Further sample collection and RT-PCR–based confirmation of JEV and Orientia tsutsugamushi will be completed. Expanded cytokine profiling and optimization of in-vitro astrocyte models with individual and combinational antigen exposure will be carried out. Screening of selected molecular or pharmacological inhibitors and validation of key gene or protein expression findings will be undertaken.

1.12 Project:

Title: Elucidating the role of nanoparticles and associated mechanisms in modulating matrix metalloproteinases activities/expressions in dengue viral disease: nanotherapeutics for dengue shock syndrome (DSS/DHF)

PI: Dr. Rituraj Niranjan

Status: Ongoing

Funding source: ICMR

Year of initiation/ completion: 2023 - 2026

Background: Dengue is a rapidly increasing mosquito-borne viral disease caused by DENV and transmitted by *Aedes* mosquitoes. Severe forms like dengue hemorrhagic fever (DHF) and dengue shock syndrome (DSS) involve vascular leakage and inflammation. In previous studies, it is suggested that matrix metalloproteinases (MMPs) play a key role in endothelial dysfunction and disease severity. Targeting MMPs using nanoparticle-based therapies presents a promising strategy for managing severe dengue.

Objectives: 1) To assess the effects of nanoparticles on the expression profile of MMPs and associated mediators on blood innate immune cells (monocytes, neutrophils and eosinophils) in dengue viral disease. **2)** To investigate the autophagic or endoplasmic reticulum stress mediated mechanisms of nanoparticles associated to MMPs expressions in dengue viral disease. **3)** To understand and establish the mechanisms of nanoparticles in regulating the MMPs mediated endothelial dysfunctions associated to DSS/DHF.

Methodology: THP-1 monocyte cells were infected with dengue virus and treated with a nano formulation containing silver nanoparticles (AgNPs), plant extract, and Ivermectin. Cytotoxicity was assessed using MTT assay, while morphology was observed via microscopy. Cytokines and protein levels were measured using ELISA and Bradford assay. MMP gene expression was analyzed using PCR, and data were statistically evaluated using GraphPad Prism.

Results: The plant extract was non-toxic up to 50 µg/mL, indicating minimal cytotoxic effects and dose-dependent effect. Morphological analysis of THP-1 cells revealed significant changes upon dengue virus infection. Dengue infection caused significant cellular damage and upregulation of MMPs (MMP-1, MMP-2, MMP-7, MMP-8, MMP-10, and MMP-13). Treatment with the nano formulation improved cell morphology and significantly reduced MMP expression, indicating anti-inflammatory and protective effects with possible synergistic action.

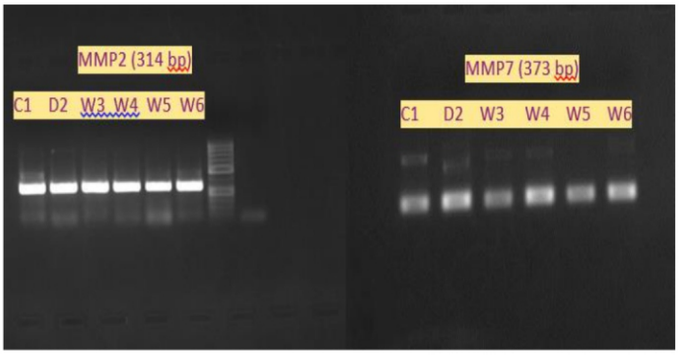


Figure showing mRNA expression of MMP2 & MMP7 gene after infection. (C1: control cells; D2: DENV infected cells; W3: THP1 cells + DENV2 + Ivermectin + AgNPs; W4: control cells; W5: THP1 Cells+DENV2+Ivermectin +AgNPs+ Plant extract; W6: THP1 cells+DENV2+Plant extract

Conclusions: The nanoformulation effectively reduces dengue-induced cellular damage, cytopathic effects, and downregulates MMP expression, suggesting its potential as a therapeutic strategy target both viral-induced damage and host-mediated inflammatory responses.

Future directions: Further preclinical and clinical studies are needed to validate efficacy. MMPs can be explored as biomarkers, and the nano formulation may be optimized as a multi-targeted therapy for dengue management.

1.13 Project:

Title: Deciphering the immunological, molecular and genetic mechanisms of "Antibody Dependent Enhancements (ADE)" of dengue virus particles: relevance for immunopathogenesis and vaccine developments

Status: Ongoing

PI: Principal investigator: Dr. Rituraj Niranjan, Co-I: Dr. Anil Kumar Verma,

Duration: 2023 -2026

Funding Source: ICMR

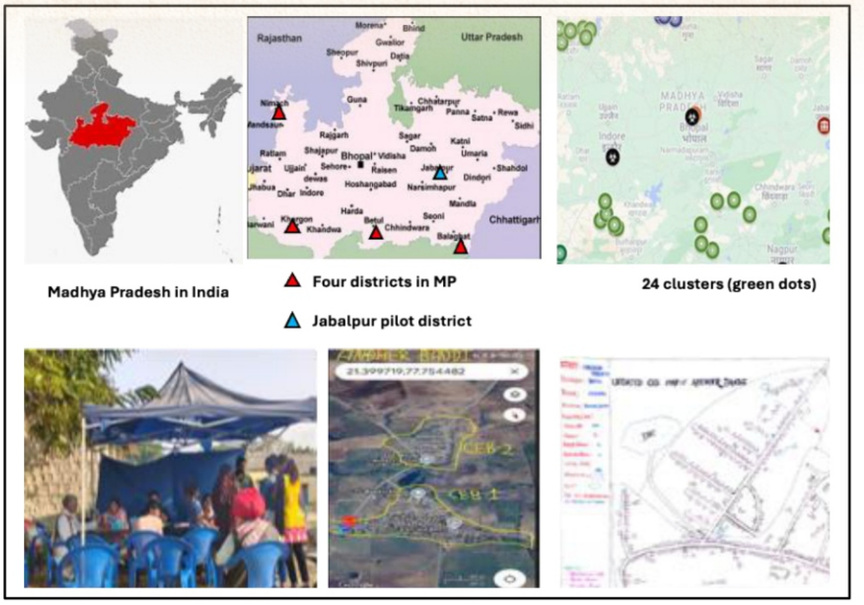
Background: Dengue is one of the key health problems, that affects massive population world-wide and is an emerging disease of the tribes in India. In some cases, secondary infection is more severe than primary due to the already existing antibodies, this mechanism is called antibodies dependent enhancements (ADE). Antibody-dependent enhancement (ADE) may drive higher viral loads in these secondary infections and is purported to result from antibodies that recognize dengue virus but fail to fully neutralize it. However, the exact mechanism of ADE of dengue virus is completely unknown and need extensive investigations. FcyR is understood to be a key regulator in the mechanism of ADE; however, its role on innate immune cells is not clearly understood in dengue virus replications. Autophagy is believed to participate in the virus replications and intracellular mechanisms. Therefore, the present study is planned to understand the mechanism of antibody dependent enhancements of dengue virus replications.

Objectives:

1. To investigate the Fcγ receptor (Fcγ-R) expressions patterns (constitutive and inducible) in immune cells in dengue patients' samples.
2. To understand the serotype specific mechanisms in Fcγ receptor mediated ADE in immune cells and its pathological perspective.
3. To elucidate the role of autophagic pathway in antibody dependent enhancements (ADE) of dengue virus particles replication.

Methodology: Experimental designs: both in vivo (patients' samples) and in vitro studies was be done. Cell lines: THP-1 human monocyte, cells were used in the present. Dengue virus identifications and serotyping was done using, Lanciotti et al.1992 with desired modifications. Virus titer was measured using real time PCR and PFA, and by NS1 ELIZA. Cell viability was done by MTT assay (Mossman et. al., 1983). Real time PCR for transcriptional analysis of FcγR and associated genes was done by Niranjan et al. 2016.

Results: In general, virus-specific antibodies are considered antiviral and play an important role in the control of virus infections in several ways. However, in some instances, the presence of specific antibodies can be beneficial to the virus. This activity is known as antibody-dependent enhancement (ADE) of virus infection. To study the mechanism of ADE we have developed an in vitro model of monocytes culture system. We have observed that there is sequential decrease in the virus concentrations in all four generations of monocytes cell cultures. We have also tested the expression profile of FcγR receptor gene in response to virus antigen and its inhibition by atorvastatin. We have observed that NS1 antigen of dengue virus serotype 2 has significantly increased the expression profile of FcγR receptor gene expression which was inhibited by atorvastatin in dose dependent manner.



Future directions: In the present study we have observed that, the virus FcγR receptor expression is increased in response to virus antigen which indicate that its activation and increased response towards ADE in monocytes cells. This means that further exposer with the virus will leads to high replication and increased virus production or titre.

1.14 Project:

Title: Monitoring and strengthening of tuberculosis elimination in India –District level sentinel surveillance (Madhya Pradesh)

Status: Completed

PI: Dr. Mukesh (Sc. C, ICMR-NIRT), **Co-PI** – Dr. Shriram S (Sc. E, ICMR-NIRT), **Site PI** – Dr. Vidhan Jain

Duration: 2024 – 2026

Funding Source: ICMR

Objective : To monitor national trends of TB prevalence, TB infection, health seeking behaviour, using community-based sentinel survey. **Method -** As part of the project four districts (Neemuch, Khargone, Balaghat and Betul) were selected in Madhya Pradesh. In each district, 6 clusters were selected (24 clusters), with screening target of 500 persons per cluster (3000 per cluster, total **12,000** population in 24 clusters). Out of 24 clusters 5 were urban and 19 were rural.
Sputum eligibility criteriawas symptoms suggestive of TB, past history of TB, and abnormal chest X ray carried out using hand held device (remote reading). From each sputum eligible participant one spot sputum sample (on site for CBNAAT) and one morning sputum sample (for smear, culture, line probe assay and DST at NRL, Bhopal) was collected. Verbal autopsy was done using ODK collect v2024.2.4. Cy-TB (advance tuberculin skin test based on ESAT-6 and CFP 10 antigens of MTB) was administered intradermally in the forearm of participants in four clusters (one in

each district). Hb (mission Hb, POC), random blood sugar, height, weight, BP have been measured of each participant. Staff (32 members) was trained (two teams consisting of lab technicians, X ray technicians, field investigators, site investigators) before the start of work. Pilot testing was done in two villages of district Jabalpur. Data collection has been done after updating 2011 CEB maps provided by Census department, Bhopal, MP. Two clusters have been completed by DLSS-Bihar team.

Results – In pilot screening, 85 persons were screened and 84 X rays were taken (98.8%). Out of 85, 16.5% were symptomatic. Eleven persons (12.9%) were tested by CBNAAT and 2.4% (2 cases) were positive for MTB. In district Neemuch, 2,828 persons were screened and 2,795 X rays were taken (98.8%). Out of 2,828 participants, 427 (15.1%) were symptomatic. 347 (12.3%) were tested by CBNAAT and 6 (0.21%) were MTB positive. In district Betul, 2,802 persons were screened and 2,753 X rays were taken (98.3%). Out of 2,802 participants, 725 (25.9%) were symptomatic. 628 (22.4%) were tested by CBNAAT and 8 (0.3%) were MTB positive. In district Khargone, 2,843 persons were screened and 2,783 X rays were taken (97.9%). Out of 2,843 participants, 558 (19.6%) were symptomatic. 500 (17.6%) were tested by CBNAAT and 1 case (0.04%) was MTB positive. In district Balaghat, MP-DLSS team could cover only 4 clusters. A total of 1,841 participants were screened and 1,823 X rays were taken (99%). Out of 1841 participants, 361 were symptomatic (19.6%). 344 were tested by CBNAAT and 3 cases (0.2%) were MTB positive. All the cases were Rif sensitive in CBNAAT. Additional 80 cases were culture positive and mostly from district Neemuch, Betul, Khargone and Balaghat in decreasing order of prevalence. A total of 22 verbal autopsies were done. In Cy-TB testing 1,253 participants were successfully read for wheel size. Nichay IDs were created for all the microbiologically confirmed cases of MTB.

1.15 Project:

Title: Connecting the unconnected: An incentive-based model to connect the Baiga traditional tribal healers to public health system

PI: Dr. Nishant Saxena, ICMR-NIRTH Jabalpur (transferred to NIOH, Nagpur on 17-11-2025), **Co-I:** Dr. K. B. Saha, Dr. Dinesh Kumar, Dr. Suyesh Srivastava, Dr Harshwardhan Shende, Dr. R. K. Mehra, CMHO, Umaria, MP, Dr. Brijesh Patel, DHO and DMO, Dindori, MP

Year of start: 2023

Funding: ICMR TSP

Progress:

The larger aim of the project is to connect the traditional tribal healers (TTHs) providing services in tribal hinterlands of Madhya Pradesh to the public health care system. This is being achieved through the development and implementation of a referral slip based mechanism for transfer of patients from the TTH to nearby health worker (like ASHA, ANM) or health post (like HWC, PHC or CHC) in tribal block of Dindori district. After the completion of formative phase and baseline survey phase, the intervention phase of project was undertaken during the period under review, and this phase focused on strengthening referral linkages between TTHs and public health facilities, including Health and Wellness Centres (HWCs), Primary Health Centres (PHCs), Community Health Centres (CHCs), and ASHAs. The structured, QR code-based referral mechanism was introduced, supported by capacity building, sensitisation, and an incentive-based approach to encourage active participation of TTHs. Identified TTHs and health workers

were trained in the usage and handling of QR code-based referral slips. Since incentives were linked to the submission of these slips, emphasis was placed on ensuring that every referral was documented and counted. In all, during the period under review, a total of 749 patient referrals were generated by 51 TTHs and for this the incentive was directly credited to the bank accounts of TTHs. By means of this project activities it was demonstrated that through this mechanism, better health outcomes for patients could be ensured. It is also worth noting here that among the patients transferred from TTH to health centres, 22% patients reached the health facility through this referral slip-based mechanism on the same day of visiting the TTH. Thus, the model was successful in substantially reducing the time-lag for seeking treatment at health centres.

Based on the findings of the intervention phase, detailed progress report was submitted to the ICMR HQ for granting approval for third year of the project which has been communicated very recently. The process for undertaking the end-line survey and project completion has been started.

Section 2- Extramural Projects

2.1 Project:

Title: Role of genome maintenance in placental development and pregnancy complications (Discovery research).

Status: Ongoing

PI, Co-PI and Nodal officer: Dr. Vijay Pratap Singh

Year of initiation/ completion: 2023- 2028

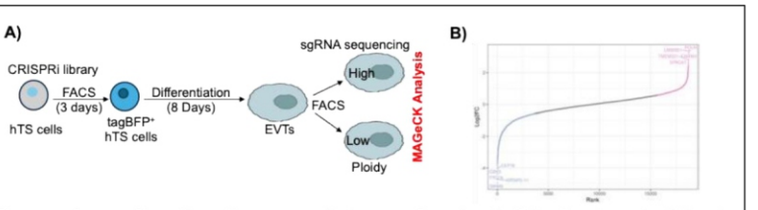
Funding source: Department of Biotechnology, India

Background with objective: Globally, approximately 20 million infants are born small for gestational age (SGA), contributing significantly to infant mortality, and lifelong morbidity. Placental abnormalities are leading cause of pregnancy associated disorders such as SGA, preterm birth and pre-eclampsia. Placental cells regulate ploidy in spatiotemporal manner and changes in ploidy can significantly affect placental/fetal development. The overall objective of this grant is to understand role of genome maintenance in placental development and pregnancy complications. Following are the objectives for this project-

1) To identify molecular regulators of polyploidy in the placental development.
2) To understand how polyploidy drives DNA damage and senescence.
3) To understand the role of senescence in premature and preterm birth.

Methodology/ work progress/results:

We performed a genome wide screen to identify molecular regulators of polyploidy using the pCRISPRia-v2-library from the Jonathan Weissman lab MIT, USA using human trophoblast stem cells as mentioned in figure.



Screening of molecular regulators of polyploidy in trophoblast stem cells. A) hTS cells expressing dCas9-KRAB-MeCP2 was transduced with pCRISPRia-v2-library containing one lac sgRNA (20K genes). Transduced cells expressed tagBFP and was FACS sorted. After eight days of differentiation to EVTs, cells were FACS sorted for EVTs marker (using anti HLA-G antibody), and ploidy (using DRAQ-5 nuclear stain). Enrichment of sgRNA was analysed after next generation sequencing using MAGeCK analysis pipeline. **B)** Rank plot for genes identified in the screen affecting ploidy in EVTs using MAGeCK analysis pipeline.

Conclusion: 1. We were able to identify several genes such as TP53, NAA10, MBD3L5, CST9L, PTPN20B which inhibits EVTs formation and ZNF705D, C11orf85, C14orf37, PRR13 and SLC17A1 which promotes EVTs formation.**2.** We identified several genes that promote EVT ploidy, including CDK5, SMIM8, TTC7A, KRTAP5-11, and CEP78. Conversely, genes such as CMTM3, POLN, TMEM221, SPAC7, and LMBRD1 were found to inhibit EVT ploidy.

Future directions: In future we are validating these genes using candidate genes approach to understand their role in placental development and pregnancy complications.

2.2 Project:

Title: Identifying Unique Repetitive Elements in Cell-Free DNA (cfDNA): Potential Biomarkers for Predicting Pregnancy Complications with Point-of-Care Applications (Discovery & development research).

Status: Ongoing

PI: Dr. Vijay Pratap Singh

Year of initiation/ completion: 2025- 2028

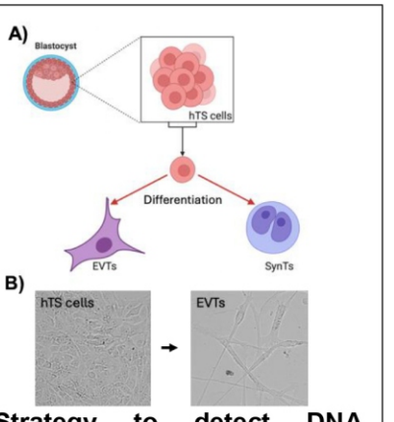
Funding source: Anushandhan National Research Foundation (ANRF), India

Background with objective: DNA damage is a physiological process during placental development but an increase in such damage triggered by genetic predispositions, stress or environmental toxins, can severely affect placental development leading to pregnancy complications such as preeclampsia, fetal growth restrictions (FGR) and preterm birth. Mechanisms that regulate DNA damage in placental cells are largely unknown and understanding this process is crucial for elucidating its impact on pregnancy outcomes. Following are the objectives for this project-

1. To identify DNA damage sites in human placental cells and detection of associated genomic regions (Fragile DNA) in the serum of pregnant women.
2. To measure the levels of fragile DNA in various pregnancy complications with focus on preeclampsia/preterm birth/FGR.
3. To create diagnostic tools to detect DNA breaks in early pregnancy.

Methodology/ work progress/results:

We have mapped DNA damage sites in mouse placental cells using γH2A.X ChIP-seq and identified several fragile sites in these cells. Among several types of repeats, we found that CGG repeats are particularly prone to breaks in these cells. We hypothesize that DNA near these breaks have higher chance of entering maternal circulation and can be detected as cfDNA. To test our hypothesis, we analyzed one of the target DNA regions as cfDNA in different stage of human pregnancy and observed that the breaks associated CGG repeats are enriched in pregnant women as compared to non-pregnant women.



Strategy to detect DNA damage sites human placental cells. A) Human trophoblast stem cells (hTS cells) are derived from blastocyst and can be differentiated to extra villous trophoblasts (EVTs) and Syncytiotrophoblast (SynTs). B) Image showing successful culture of hTS cells and their differentiation into EVTs.

Conclusion: 1. Placental cells shows consistent DNA damage at some fragile sites. 2. CGG repeats are highly pone to breaks in placental cells.

Future directions: In future we will be mapping all fragile sites from human cells

2.3 Project:

Title: Mission Program on Pediatric Rare Genetic Disorders

Status: Ongoing

PI: Dr Ashwin Dalal, CDFD, Hyderabad, Site PI: Dr Ravindra Kumar, Co-PI : Dr Asha Tiwari, NSCB, Medical College, Project Co-Ordinator: Dr K. Thangraj, Director, CDFD.

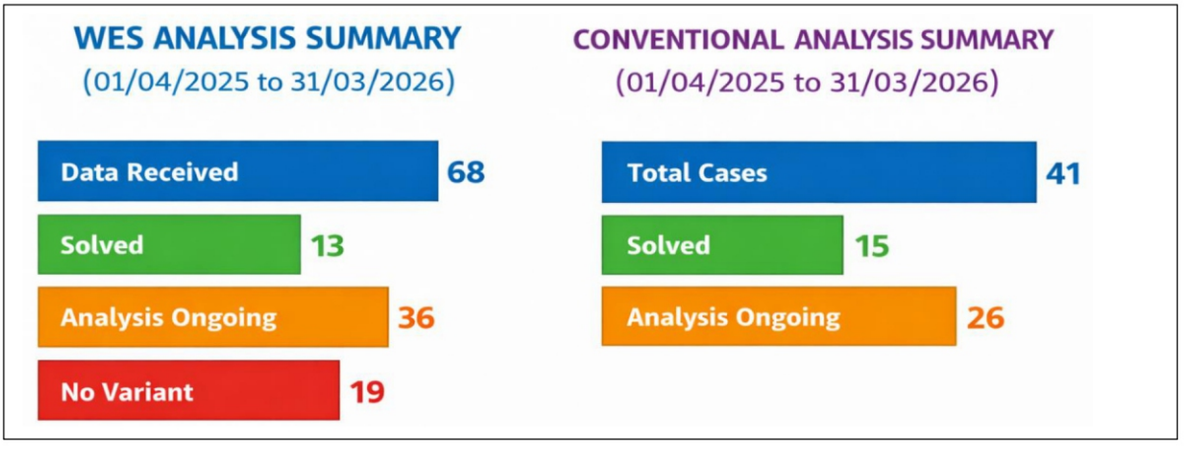
Year of initiation: 2022

Funding source: DBT, New Delhi

Background with objective: India has one of the world's largest populations affected by rare genetic disorders, with nearly 70 million individuals estimated to suffer from conditions rooted in inherited mutations. Despite this high burden, a significant proportion of pediatric cases remain undiagnosed due to limited access to genomic testing, reliance on conventional methods, and the absence of an Indian-specific reference database for genetic variants. Advances in next-generation sequencing, especially whole-genome sequencing, now offer powerful tools to identify disease-causing mutations, including those in non-coding and complex genomic regions. The aim of the project is to establish a nationwide, integrated program to diagnose, study, and manage pediatric rare genetic disorders, thereby improving clinical outcomes and supporting precision medicine in India. The specific objectives are as follows: Objective: 1) Recruitment of patients with Pediatric rare genetic diseases. 2) Genomic analysis for diagnosis of rare genetic disorders. 3) Database development and analysis. 4) Functional validation of novel variants/novel genes. 5) Screening for genetic diseases under DBT-UMMID programme. 6) Awareness programme in rare genetic diseases.

Methodology/ work progress/results: Patients with suspected rare genetic disorders were recruited through collaborating centers after informed consent and detailed clinical evaluation. Blood samples were collected and initially screened using conventional genetic methods such as TP-PCR, MLPA, enzyme assays, karyotyping, and Sanger sequencing based on clinical indications. Cases remaining unresolved were further analyzed using Whole Exome Sequencing (WES) or Whole Genome Sequencing (WGS). Sequencing data were processed through standardized bioinformatics pipelines for variant identification, annotation, and interpretation, followed by confirmatory testing, genetic counseling, and clinical reporting.

A total of 68 exome cases and 41 conventional cases were processed, with sequencing pipelines, variant interpretation workflows, and reporting mechanisms functioning smoothly.



Conclusion: The project has shown substantial progress in strengthening diagnostic services for pediatric rare genetic disorders through the integration of advanced genomic and conventional testing approaches.

Future directions: The project will focus on expanding patient recruitment and increasing the number of samples for Whole Genome Sequencing (WGS) to identify complex and structural variants not detectable by exome sequencing.

2.4 Project:

Title: General health screening with special focus on selected disease conditions (Tuberculosis, Anemia, Haemoglobinopathies & Malnutrition) and Ayurvedic management of Anaemia & Malnutrition in students of Eklavya Model Residential Schools (EMRS)

Status : Ongoing

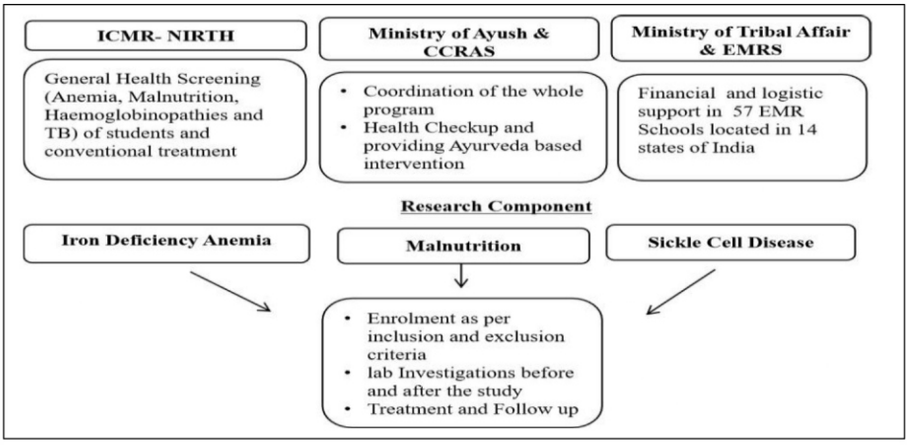
PI: Dr. Ravindra Kumar, **Co-PI:** Dr. Suyesh Shrivastava

Year of initiation: 2024

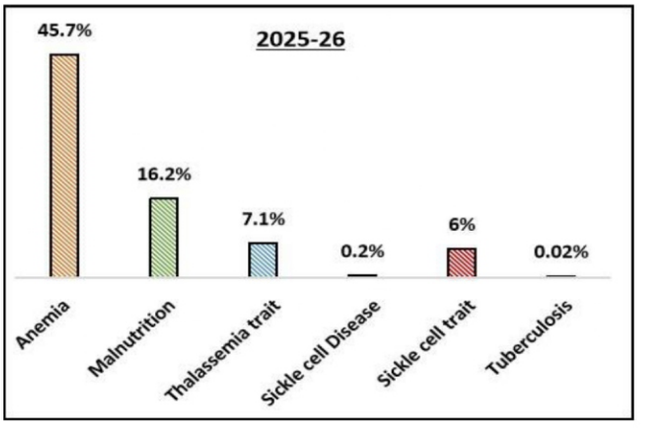
Funding source: CCRAS, New Delhi

Background with objective: Children in tribal populations have a high but often undetected burden of disease, which adversely affect their growth and development. Integrated school-based screening is essential for early identification and management of the disease. Additionally, evaluating Ayurveda-based interventions may provide a complementary, accessible approach for managing anemia and malnutrition in these settings. The project aims to cover the students of 57 EMRS functioning under the Ministry of Tribal Affairs across 14 states of India. The objectives of the project -

- To screen the general health condition of the students of EMRS with special focus on Anemia, Malnutrition, Haemoglobinopathies and Tuberculosis
- The management of Anemia and Malnutrition through Ayurveda interventions as a standalone/add-on.



Methodology, Work progress/results: A total of 11936 students from 36 EMRS were screened during 2025-26 across Andhra Pradesh, Gujarat, Rajasthan, Jammu & Kashmir, Jharkhand Sikkim, Uttar Pradesh, Uttarakhand and Odisha.



Conclusion: Prevalence and early identification of Anemia, Malnutrition, Haemoglobinopathies and tuberculosis among tribal students, which change the health status of the students in terms of hemoglobin, and body mass index. This initiative also assess the treatment adherence for Anemia, and malnutrition through self-reported compliance. Consequently, this program leads to improved academic performance among students and strengthens public health strategies for tribal communities.

Future direction: Expanding screening coverage, integrating digital health records for continuous monitoring and strengthening partnerships with healthcare providers to ensure sustained care.





2.5 Project:

Title: DBT UMMID - Screening of Pregnant Women and Newborns in Aspirational Districts for Preventable Genetic Disorders and Their Management.

Status: Ongoing

PI: Dr Rajasubramaniam S*, Co PI: Dr Ravindra Kumar

***superannuated on 31 Dec 2025**

Year of initiation: 2024

Funding source: DBT, New Delhi

Background: Due to the high birth rates, a very large number of infants with genetic disorders are born every year (Verma, 2000). In the absence of diagnostic facilities, affected children are identified late cause an enormous burden on the family and health infrastructure. The study aims to screen newborns for five genetic disorders and antenatal screening for hemoglobinopathies in aspirational districts.

Objectives of the Proposal:

1. To undertake a new born screening program for- Sickle cell anaemia, Thalassemia, G6PD Deficiency, Galactosemia, Biotinidase deficiency, Congenital Hypothyroidism, Congenital adrenal Hyperplasia.
2. Impart genetic testing and genetic counselling to antenatal mothers carrying fetuses with high risk of genetic disorder.

Methodology: Blood samples were collected from the pregnant women visiting to Damoh district hospital with informed consent. Haemoglobin variant analysis was performed using High-Performance Liquid Chromatography (HPLC) at the ICMR-NIRTH, Jabalpur. Identified carriers were counselled and data were recorded for epidemiological mapping. **Results** Screening has been conducted in Damoh and Barwani districts. The following summarizes sample analysis for the period 2026:

Period	Total Samples Screened	Normal (HbAA)	Carrier (HbAS)	HbAA2	AD	AF	AE
2026	771	720 (94%)	19 (2.5%)	24 (3%)	7 (1%)	0	1 (.1%)

2.6 Project:

Title: Genetic Variants Associated with Vaso-Occlusive Crises in Sickle Cell Disease

Status: Ongoing

PI: Dr Ravindra Kumar, Project Fellow: Dr Parul Gupta

Year of initiation: 2025

Funding source: DBT, New Delhi

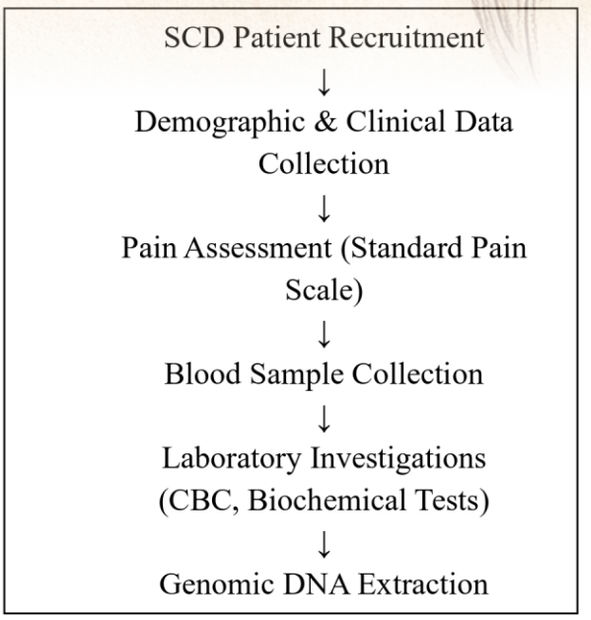
Background with objective: Sickle Cell Disease (SCD) is a major inherited blood disorder affecting tribal populations in India and is characterized by recurrent vaso-occlusive crises (VOC) that cause severe pain and organ complications. Increasing evidence suggests that genetic variants and circulating biomarkers such as cell adhesion molecules may influence disease severity and pain episodes. The objective of this study is

1. To investigate genetic variants and clinical biomarkers associated with vaso-occlusive crises and pain severity in SCD patients.,
2. To generate molecular and clinical evidence that can help in risk prediction, improved disease monitoring, and identification of potential therapeutic targets.

Methodology/ work progress/results:

Conclusion: Genomic DNA extraction and sample preparation have been completed for the enrolled SCD patients. The upcoming Next-Generation Sequencing (NGS) analysis is expected to identify specific genes and molecular pathways associated with vaso-occlusive crises and pain severity, which may serve as potential targets for developing personalized and more effective therapeutic strategies.

Future directions: The identified genes and pathways can be further used to develop genetic risk prediction models to identify SCD patients who are at high risk of severe pain and complications. The findings may support the development of personalised treatment strategies and targeted therapeutics, as well as biomarker-based diagnostic tests for early prediction of VOC. Future work can also include functional studies of key variants, large multi-centre validation studies to evaluate personalised therapies based on the identified genetic targets.



2.7 Project:

Title: Optimizing strategies for enhancing Sickle Cell Disease management in tribal population: Multi-centric implementation research.

Status: Ongoing

Principal Investigator: Dr. Tanveer Rehman: Nodal Officer, MRHRU Namkum, Jharkhand **Co-Principal Investigator(s)**

1. Dr. Ravindra Kumar: Scientist D, ICMR NIRTH, Nodal officer of MRHRU Durg, C.G.
2. Dr. Nishant Saxena, Scientist C, ICMR-National Institute of One Health, Nagpur
3. Dr. Piyush Kumar Singh: Scientist C, ICMR NIMR, New Delhi
4. Dr. Praveen Kumar Tripathi: Scientist B, Site Coordinator MRHRU Angara, Ranchi.
5. Dr. Lakhan Majhee: Nodal Officer, MRU Ranchi, Additional Professor.

Year of Initiation: 2025

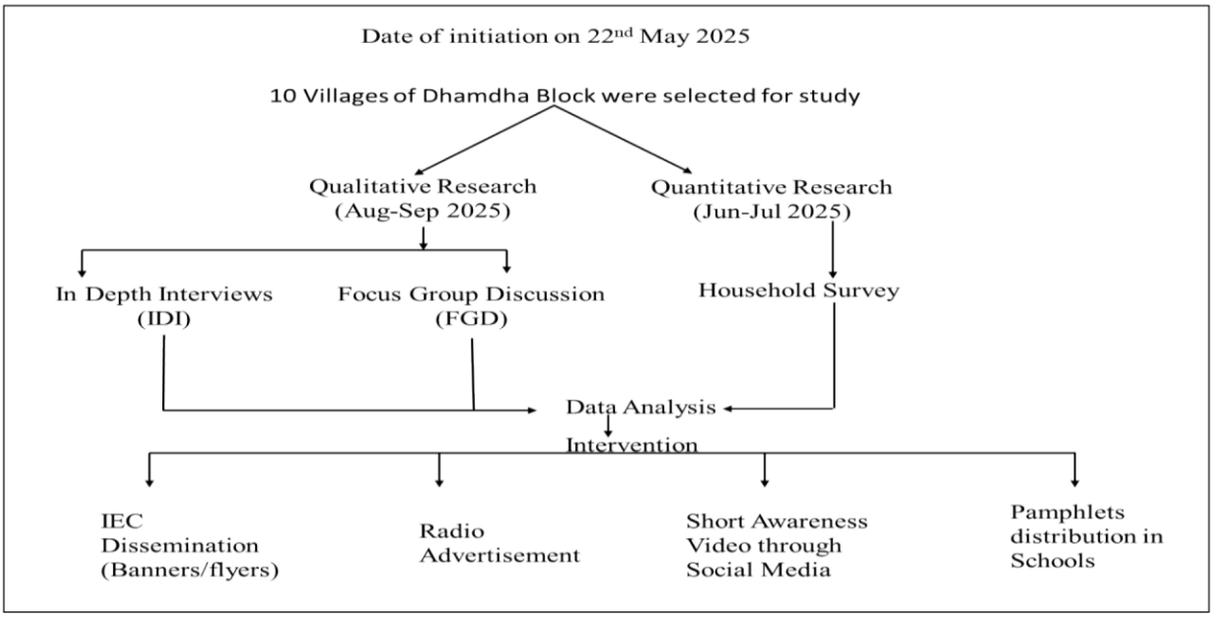
Funding Source: Department of Health Research

Background: Sickle Cell Disease (SCD) is a hereditary blood disorder highly prevalent among tribal populations in India, posing significant public health challenges. In Chhattisgarh, particularly in tribal region, gaps in awareness, knowledge of transmission, and screening uptake persist, among individuals. Despite initiatives like the National Sickle Cell Anaemia Elimination Mission, implementation gaps remain at the community level. This project adopts a mixed-method approach to identify barriers and facilitators and develop culturally appropriate, community-based interventions to improve early diagnosis, screening, access to care, and overall SCD management.

Objectives:

- To explore the barriers and facilitators affecting diagnostic and health- seeking pathways among individuals from tribal communities with Sickle Cell Disease (SCD).
- To co-develop and co-implement multi-sectoral interventions aimed at enhancing diagnostic and health-seeking pathways.
- To assess the effectiveness of the intervention strategies through the application of the RE-AIM (Reach, Effectiveness, Adoption, Implementation, and Maintenance) framework.

Methodology/ Work Progress/ Result:



Conclusion: Relatively high awareness of Sickle Cell Disease (82.3%) coexists with limited understanding of its transmission (46.6%) and suboptimal screening coverage (65%). Gaps in prior knowledge (35%) persist, while the disease burden is reflected by 2.87% affected individuals and 6.18% carriers. Systemic challenges, including hydroxyurea stock delays (42%) and high transportation and blood transfusion costs (78%), significantly hinder access to care. These results emphasize the need for targeted, culturally appropriate awareness initiatives, strengthened supply chain mechanisms, and improved accessibility to diagnostic and treatment services for effective disease management.

Future Directions:

- To initiate new born screening in CHC.
- Continuous refresher trainings of health workers, mitanin and teachers.

2.8 Project:

Title: Large-scale (Phase III) evaluation of efficacy, fabric integrity and community acceptability of HILNET long-lasting insecticidal net in different eco- epidemiological settings in India.

Status: Ongoing

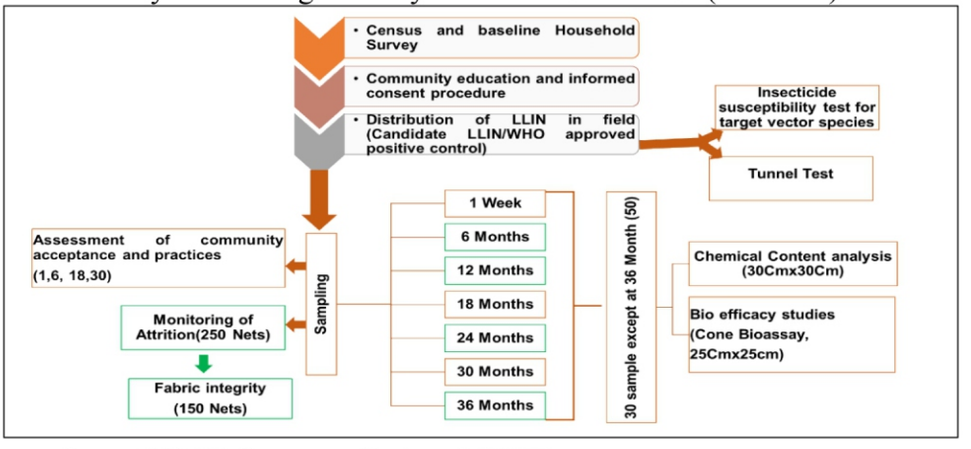
Site PI: Dr. Anil Kumar Verma, **Co-PI**: Dr. Satyendra Pandey

Year of initiation: March 2025

Funding source: HIL(India)Ltd. New Delhi

Background with objective: Long-lasting insecticidal nets (LLINs) is one of the key strategies for prevention and control of malaria. WHO has developed guidelines to assess the bio-efficacy of LLINs, net durability/fabric integrity, survivorship and acceptability under operational conditions. In order to receive a full WHO recommendation, new LLINs are required to undergo prospective insecticidal efficacy and net durability monitoring over 3 years of household use (Phase III).

Objective: The overall objective of the study is to undertake Phase III evaluation of the candidate LNs in comparison to WHO Pre-Qualification Vector Control (the Royal Sentry 2.0 LN) approved LN following standard guidelines and procedures (ICMR Common Protocol, 2023).



Methodology: The details are mentioned in the image.

Work progress /results: The Phase-III evaluation of Hilnet is being conducted in 14 villages of four Sub-center (Lood, Bithli Ammanala and Pathri) of CHC Baihar, Balaghat district. The villages have been selected on the basis of population size, malaria incidence, accessibility, community use of LLINs/nets and multiple ethnicities in consultation with the State/District Health Authorities. After due communication with state authorities and DMO, Balaghat, Household survey and enumeration of 14 villages covering a population of 7096 has been completed. So far Insecticide susceptibility assays on *An. Culicifacies*, Malaria prevalence assessment through RDT/Microscopy, Preparation of Master List for net distribution, Coding and distribution of candidate and comparator LLINs to study households, Monitoring and documentation of adverse events at one-week post-distribution and retrieval of LLINs at week 1 of distribution for bio-efficacy testing and chemical residue analysis has been completed.



1. Staff conducting Household survey



2. Staff conducting community engagement activities (importance and use of LLIN for malaria prevention)



3. Distribution of LLIN to Community members



4. Recording of adverse effects, if any

2.9 Project:

Title: Large-scale (Phase III) evaluation of efficacy, fabric integrity and community acceptability of MAGNET long-lasting insecticidal net in different eco- epidemiological settings in India.

Status: Ongoing

Site PI: Dr. Anil Kumar Verma, **Co-PI**: Dr. Satyendra Pandey

Year of initiation: September 2025

Funding source: VKA Polymers Pvt. Ltd. Karur, Tamilnadu

Background with objective: A Long-lasting insecticidal nets (LLINs) is one of the key strategies for prevention and control of malaria. WHO has developed guidelines to assess the bio-efficacy of LLINs, net durability/fabric integrity, survivorship and acceptability under operational conditions. In order to receive a full WHO recommendation, new LLINs are required to undergo prospective insecticidal efficacy and net durability monitoring over 3 years of household use (Phase III).

Objective: The overall objective of the study is to undertake Phase III evaluation of the candidate LNs (MAGNet) in comparison to WHO Pre-Qualification Vector Control (the Royal Sentry 2.0 LN) approved LN following standard guidelines and procedures (ICMR Common Protocol, 2023).

Methodology: Methodology is same as in Hilnet Project.

Work progress/results: The Phase-III evaluation of MAGnet is being conducted in 10 selected villages of two Sub-center (Hirapur and Sarekha) of Baihar Block, Balaghat district. The villages have been selected on the basis of population size, malaria incidence, accessibility, community use of LLINs/nets and multiple ethnicities in consultation with the State/District Health Authorities. After due communication with state authorities and DMO, Balaghat, Household survey of all 10 villages covering population of 6724 has been completed.

Photographs of field activities:




Photo: Staff conducting Household survey

2.10 Project:

Title: Large-scale (Phase III) evaluation of efficacy, fabric integrity and community acceptability of Veeralin long-lasting insecticidal net in different eco- epidemiological settings in India.

Status: Ongoing

Site PI: Dr. Anil Kumar Verma, **Co-PI**: Dr. Satyendra Pandey

Year of initiation: 2025

Funding source: VKA Polymers Pvt. Ltd. Karur, Tamilnadu

Background with objective: Long-lasting insecticidal nets (LLINs) is one of the key strategies for prevention and control of malaria. WHO has developed guidelines to assess the bio-efficacy of LLINs, net durability/fabric integrity, survivorship and acceptability under operational conditions. In order to receive a full WHO recommendation, new LLINs are required to undergo prospective insecticidal efficacy and net durability monitoring over 3 years of household use (Phase III).

Objective: The overall objective of the study is to undertake Phase III evaluation of the candidate LNs (Veeralin) in comparison to WHO Pre-Qualification Vector Control (SafeNet plus LN) approved LN following standard guidelines and procedures (ICMR Common Protocol, 2023).

Methodology: Methodology is same as in Hilnet Project.

Work progress/results: The Phase-III evaluation of Veeralin is being conducted in 10 selected villages of two Sub-center (Bijegaon and Sighanpuri) of Narayanganj Block of Mandla district. The villages have been selected on the basis of population size, malaria incidence, accessibility, community use of LLINs/nets and multiple ethnicities in consultation with the State/District Health Authorities. After due communication with state authorities and DMO, Balaghat, Household survey of all 10 villages has been initiated



Staff conducting Household survey

2.11 Project:

Title: Vector incrimination studies for Japanese Encephalitis virus in central India

Status: Ongoing

PI: Dr. Satyendra Pandey, **Co-PI:** Dr. Pushpendra Singh,

Year of initiation: 2024

Funding source: Extramural NHM, VBDCP, M.P.

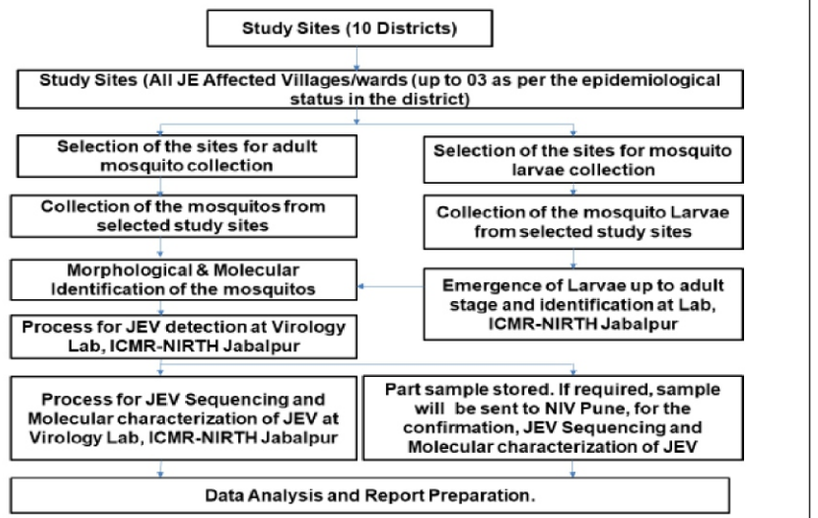
Background with objective: Japanese Encephalitis, caused by the Japanese encephalitis virus, continues in Madhya Pradesh; limited vector incrimination data in central India require systematic studies to identify local vectors and circulating strains for effective control planning.

Objective:

1. To identify vectors of Japanese Encephalitis (JE) in the study area.
2. To detect JEV from vector mosquito species in the study area.
3. To perform molecular characterization of JE virus.

Methodology/ work progress/results: Following due communication with state authorities and coordination meetings, the study has been initiated in the identified districts and is presently ongoing.

Flow chart:



2.12 Project:

Title: Malaria vector surveillance and monitoring of insecticide resistance in endemic districts (Neemuch and Balaghat) of Madhya Pradesh

Status: Ongoing

PI: Dr. Satyendra Pandey, **Co-PI:** Dr. Anil Kumar Verma,

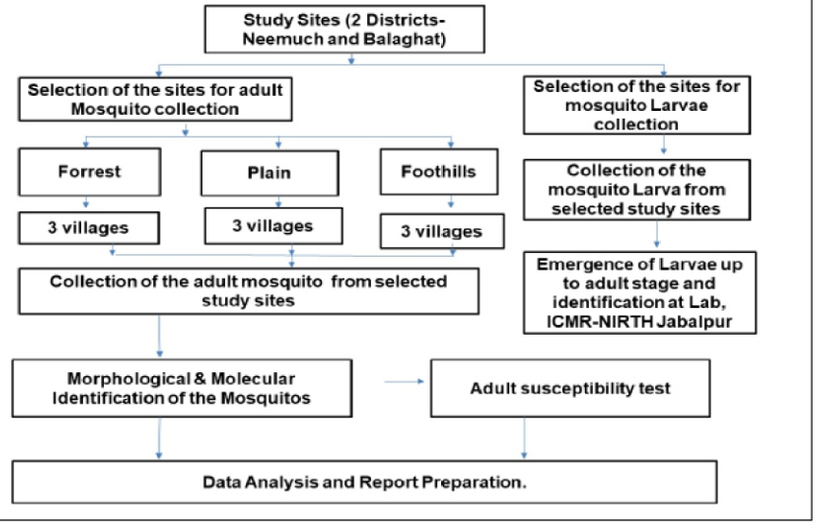
Year of initiation: 2024

Funding source: Extramural NHM, VBDCP, M.P.

Background with objective:

Malaria remains a major public health threat in Madhya Pradesh; assessing local vector species and insecticide resistance is critical to optimize targeted control strategies and support elimination efforts.

Flow chart:



Objective: 1. To determine the prevalence of malaria vectors in the study area.

2.To determine the status of the insecticide resistance in malaria vector of the study area.

Methodology/ work progress/results: Following due communication with state authorities and coordination meetings, the study has been initiated in the identified both districts and is presently ongoing.

Image field work:



Image field work

2.13 Project:

Title: "To elucidate the serotype specific roles of dengue virus (DENV-I to IV) on innate immune cells mediated neuroinflammation & neurodegeneration".
Status: Ongoing
Mentor: Dr. Rituraj Niranjan (Dr. Rashi Shukla – women scientist)
Year of initiation/completion: 2025 to 2027
Funding source: DHR-Grant Number: R-12013/18/2024-HR-, **DHR Proposal ID:** WS-2024-1294
Background with objective:

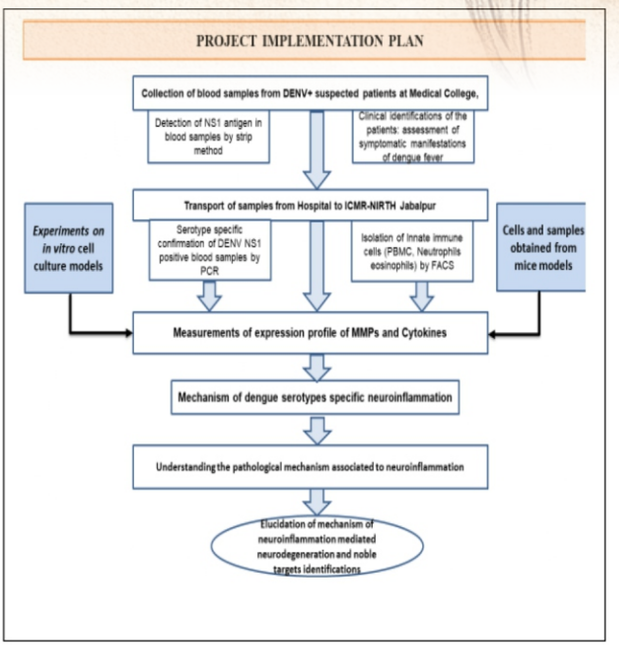
Dengue virus primarily transmitted by mosquitoes which infect immune cells such as monocytes and macrophages and deregulate the immune response. This deregulation can result in the release of pro-inflammatory, cytokines and chemokines, which affect the central nervous system, and lead the Neuroinflammation which can cause dengue Haemorrhagic fever/DSS. The interaction between dengue virus and immune cells in the context of neuroinflammation has been a subject of research to understand the mechanisms how the neurological complications associated with dengue infection? What is the role of MMPs, inflammatory and pro-inflammatory cytokines in neurological complications in dengue patients is still not clear. how apoptosis, necrosis, leads the neurodegeneration is still not clear. Which serotype (DENV.1,2,3,4) expression profile is more regarding neuroinflammation is not clear.

Objective

1. To investigate dengue serotype specific role of MMPs (matrix metalloprotease) in neuroinflammation

2. To find out serotype specific role of cytokines in participation of neuroinflammation pathogenesis.

Methodology/work progress/result



Results:

- During the first year of the project, our study began with the procurement of all related requirements to accomplish this project and to validate our protocols.
- We also procured C6/36(Asian tiger mosquito larval cell line), THP-1(monocytes), and SH-SY5Y (neuroblastoma) cell lines and successfully established in our lab. Next we successfully cultivated three generations of dengue virus on C6/36 cells, which is a natural host cell line, and they support dengue virus growth.
- After successfully virus harvesting in C6/36, we confirm all different dengue serotypes using PCR.
- We also establish the virus stock in THP-1 cells (monocytes) to check the expression of MMPs and cytokines. The idea of using this cell line is to make a primary model for our study and check the immune response. This helps us trace the complete story of dengue virus infection from virus replication to its impact on human immune cells.
- We also checked MMPs and cytokines expression in SH-SY5Y cells. Dengue virus can cross the blood-brain barrier; following this hypothesis, we used dengue-infected THP-1 cell line (monocytes) supernatant to inoculate the SH-SY5Y cell line.
- As mentioned above, this is a cell line in vitro model study; therefore, we maintain and subculture SH-SY5Y (neuroblastoma) cells, which represent nerve cells and help us study how dengue affects the brain and causes neuro-inflammation.
- Manuscript under preparation: “Role of interleukin-1β and its association in dengue pathogenesis: current scenario and future perspective”
- Poster presentation: Effect of all different dengue serotypes virus (DENV1-4) in monocyte cell line culture (GIS-2026, Bhubneswar)

Conclusion: Serotype 2 has shown a more cytopathic effect compared to serotypes 1, 2, and 3. MMP-2 and MMP-14 were significantly expressed compared to the control in neuronal and monocyte cell lines.

Future Direction: In the second year of this study, we will check other various MMPS and apoptotic genes like MMP-3, MMP-7, MMP-8, MMP-9, MMP-12, MMP-10, caspase 8-9, Bax, etc., which have not been checked yet. This is very important to achieve our research objectives. Our research manuscript preparation is also underway.

Section 3- Events and Capacity Building

We have conducted several trainings and events in year 2025-26 to strengthen the ongoing central and state health activities. Month wise details are as following

3.1 April 2025

Event on World Malaria Day (ICMR-NIRTH, Jabalpur) – 25 Apr 2025 (1 day): focused on malaria elimination strategies with participation of scientists and experts from ICMR and allied institutes.





World Health Day Celebration – 07 Apr 2025 (1 day): Program included blood donation camp and expert lecture on early detection of pregnancy complications.





13th Foundation Day of AcSIR Celebration – 03 Apr 2025 (1 day): Meeting with faculty, scientists, and students including virtual address by Director AcSIR.





3.2 May 2025

7th LRAC Meeting (MRHRU Jheet, Durg) – 26 May 2025 (1 day): Meeting held to review research activities under MRHRU with expert guidance from senior academicians and institutional leadership.





3.3 June 2025

ICMR Nodal Communications Officers (NCOS) Meet 2025 (Goa) – Jun 2025 (multi-day): Dr. Nishant Saxena represented the institute and contributed to discussions on health communication advancements and future planning.





International Day of Yoga (11th IDY) Celebration (ICMR-NIRTH, Jabalpur) – 21 Jun 2025 (1 day): conducted with Common Yoga Protocol on theme "Yoga for One Earth, One Health" promoting holistic well-being.





World Sickle Cell Day Awareness Talk – 19 Jun 2025 (1 day): Dr. Ravindra Kumar delivered an awareness lecture at CRC Jabalpur on SCD awareness and prevention.





3.4 July 2025

National Stakeholder Consultation on Sickle Cell & Blood Disorders (NHM, New Delhi) – 30 Jul 2025 (1 day): Dr. Ravindra Kumar participated as expert and contributed to discussions for strengthening the National Sickle Cell Anaemia Elimination Mission and blood disorder programmes.





3.5 August 2025

Independence Day Celebration (79th) – 15 Aug 2025 (1 day): Celebrated with flag hoisting and patriotic participation by staff and students.





ICMR-SHINE 2025 Outreach Programme – 08 Aug 2025 (1 day): विज्ञान outreach programme engaging school students with research exposure and lab visits & showcasing research activities and encouraging scientific curiosity.




3.6 September 2025

Hindi Pakhwada Activities – 14–30 Sep 2025 (15 days): Competitions and activities promoting Hindi usage in official work.




Mid-Career Management Development Programme (IIM Vizag) – 08–20 Sep 2025 (12 days): Professional training completed for management and leadership development.




Swasth Nari Abhiyaan (Outreach Sessions) – Sep 2025 (multi-day): Awareness sessions on women's health, cancer, nutrition, and mental well-being.





Swachhta Oath Ceremony – 17 Sep 2025 (1 day): Oath-taking under Swachh Bharat initiative promoting cleanliness.





Teachers' Day Celebration (AcSIR Science Club) – 05 Sep 2025 (1 day): कार्यक्रम recognizing educators and their contribution to science learning.





3.7 October 2025

Swachhta Campaign & Rally (Special Campaign 5.0) – Oct 2025 (multi-day): Cleanliness drive promoting hygiene and Swachh Bharat mission.





Rashtriya Ekta Diwas Pledge – 31 Oct 2025 (1 day): Pledge ceremony promoting unity and national integration.





Vigilance Awareness Week Activities – 27 Oct–02 Nov 2025 (7 days): Activities promoting integrity, transparency, and vigilance.





Swasth Nari Shaskt Pariwar Abhiyaan – 17 Sep–02 Oct 2025 (~15 days): Awareness campaign on women's health, hygiene, and nutrition**. &** Swasth Nari Campaign (Valedictory) – **01 Oct 2025 (1 day):** Concluding sessions covering PCOD, diabetes, and hypertension awareness.





Project Initiation Meeting (Measles Project) – 16 Oct 2025 (1 day): Planning meeting for research collaboration on measles.



Swasth Nari Abhiyaan Appreciation Ceremony – 16 Oct 2025 (1 day): Recognition of contributors to women's health campaign.



3.8 November 2025

Samvidhan Diwas Observation – 26 Nov 2025 (1 day): संविधान दिवस observed with Preamble reading and awareness.





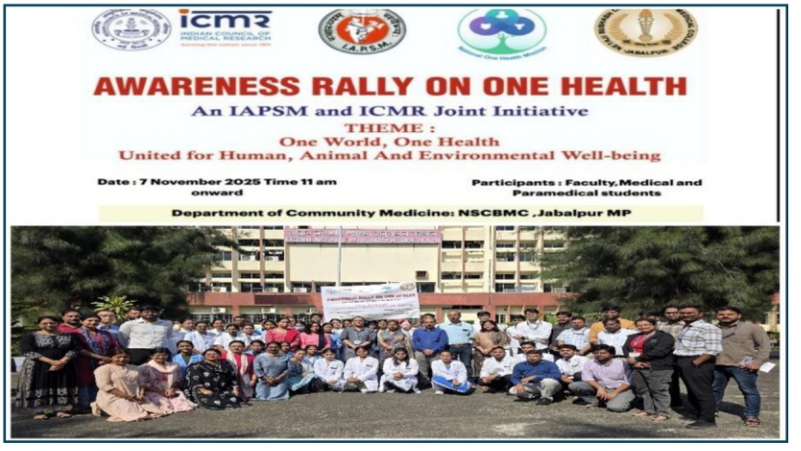
INBIX 2025 Conference – Nov 2025 (~3 days): Conference on genomics, diagnostics, and public health innovations.



Malaria Microscopy Training – 03–12 Nov 2025 (10 days): Training for lab technicians on malaria diagnosis.



One Health Awareness Rally – 07 Nov 2025 (1 day): Awareness on integrated human-animal-environment health.



Regional One Health Hackathon (IDEA ONE) – 03 Nov 2025 (1 day): Innovation-focused hackathon for health challenges.



3.9 December 2025

Educational Visit by School Students – 17 Dec 2025 (1 day): Students explored labs and learned about diseases and research.



Malaria Microscopy Training (Inauguration) – 08–17 Dec 2025 (10 days): Training on malaria detection and microscopy.

Malaria Microscopy Training (Valedictory) – 17 Dec 2025 (~10 days): Training concluded with evaluation and certification.



Sickle Cell Awareness & Screening Camp (Durg) – 03 Dec 2025 (1 day): Camp focused on early detection and awareness of SCD.



3.10 January 2026

World Leprosy Day Awareness – 30 Jan 2026 (1 day): Awareness drive promoting early detection, stigma reduction, and treatment of leprosy.



HPV & STIs Workshop (Hands-on + CME) – 29–30 Jan 2026 (2 days): Training on HPV screening, diagnostics, and clinical management including PCR techniques.



Population Health Dialogue Participation – 22 Jan 2026 (1 day): Participation in national dialogue to discuss MRHRU challenges and strengthen population health research.



Republic Day Celebrations (ICMR-NIRTH & MRHRUs) – 26 Jan 2026 (1 day): Celebrated with flag hoisting and emphasis on constitutional values and national unity.



Union Health Minister Visit (J.P. Nadda) – 24 Jan 2026 (1 day): Official visit highlighting tribal health research, innovations, and policy guidance.



National Startup Day Celebration – 16 Jan 2026 (1 day): कार्यक्रम promoting innovation and entrepreneurship among researchers and students.



Gram Sabha on Sickle Cell Awareness (Tamia) – 08 Jan 2026 (1 day): Community awareness session on SCD symptoms, prevention, and government support initiatives.



3.11 February 2026

National Science Day Celebration – 28 Feb 2026 (1 day): Event themed "Women in Science" highlighting research contributions and public health challenges like diabetes and fatty liver disease.



Scientists Meeting with Prof. A.P. Dash – Feb 2026 (1 day): बैठक focused on future research directions and addressing emerging tribal health challenges.



Sickle Cell Disease Training Workshop (Durg) – 20 Feb 2026 (1 day): Training for CHOs on SCD management, complications, genetic counselling, and treatment protocols.



SANVAD 2026 PhD Conclave Participation – 19–21 Feb 2026 (3 days): PhD scholars presented research and engaged in scientific discussions and collaborations.



CRISPR Technology Lecture – 16 Feb 2026 (1 day): Expert lecture on gene editing, therapy, and diagnostic applications of CRISPR technology.



Project Review Meeting (SCA Elimination Mission) – 12 Feb 2026 (1 day): to assess project progress and plan future strategies for sickle cell anaemia care services.



ICMR-DPCI Intervention Co-design Activity – 10–11 Feb 2026 (2 days): Conducted interviews to design culturally relevant digital interventions for diabetes prevention.



One Health Appreciation Programme – 13 Feb 2026 (1 day): Recognition event highlighting interdisciplinary collaboration for One Health initiatives.



Director Joining Ceremony (Dr. Praveen K. Bharti) – 10 Feb 2026 (1 day): Formal assumption of charge with emphasis on institutional vision and research priorities.



3.12 March 2026

8th LRAC Meeting (MRHRU Jheet, Raipur) – 25 Mar 2026 (1 day): Conducted to review ongoing research activities and discuss key public health issues like tobacco exposure, respiratory health, and paediatric diseases.



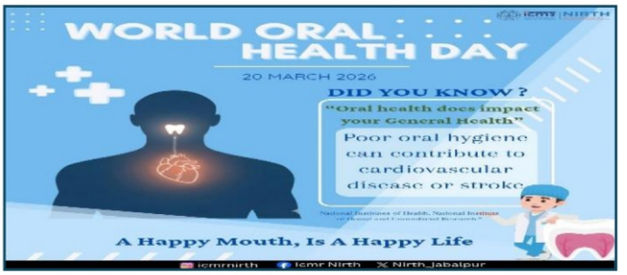
Malaria Microscopy Training Workshop – 16–25 Mar 2026 (10 days): Hands-on training for lab technicians on malaria diagnosis, slide preparation, and parasite identification.



World Tuberculosis Day Awareness Post – 24 Mar 2026 (1 day): Awareness initiative promoting early TB detection and treatment under #EndTB campaign.



World Oral Health Day Awareness Post – 20 Mar 2026 (1 day): Awareness message emphasizing oral hygiene for overall health and disease prevention.



8th LRAC Meeting (MRHRU Datia) – 18 Mar 2026 (1 day): Meeting focused on reviewing research proposals and strengthening rural health research initiatives.



Entomological Surveillance Training, 09–13 Mar 2026 (5 days): Training on vector surveillance and insecticide resistance.



National Vaccination Day Awareness Post – 16 Mar 2026 (1 day): Awareness campaign highlighting importance of vaccination and cervical cancer prevention.



International Women's Day Celebration – 09 Mar 2026 (1 day): focused on women's health, empowerment, and recognition of contributions in science and society.



43rd Foundation Day Celebration (ICMR-NIRTH) – 02 Mar 2026 (1 day): Celebrated institutional achievements, research contributions, and staff recognition with awards and cultural events.



Section 4- Activities at VRDL and MRHRUs

4.1 State level- Virus Research and Diagnostic Research:

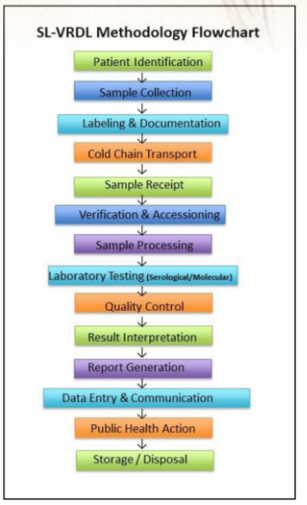
Title: SL-VRDL

Status: Ongoing

PI: Dr. Pushpendra Singh, **Co-PI:** Satyendra Pandey

Year of initiation/ completion: 2019 – ongoing

Funding source: DHR



Background: The **DHR-ICMR VRDL network** was established to decentralize India's viral diagnostic capabilities. By creating a tiered infrastructure, the project ensures rapid response to emerging pathogens, reducing reliance on central institutes and strengthening regional public health preparedness.

Objectives:

a) Rapidly identify viral infections using **Real-Time PCR, NGS, and ELISA** to reduce morbidity.

b) Act as sentinel sites for **viral mapping** and early detection of unusual clusters.

c) Study **viral pathogenesis and genotypes** while validating diagnostic kits for local strains.

d) Provide evidence-based data for **national monitoring** and state-level health policy.

Work progress: The SL-VRDL project has successfully established a robust diagnostic infrastructure, currently coordinating extensive viral surveillance and genotype identification across 65 districts in Central India. Furthermore, the laboratory is actively advancing regional healthcare through specialized research on viral infections in vulnerable populations and the implementation of technical workshops for laboratory personnel.

Results: Tested samples are shown in table.

Disease Name	Positive Count
Measles virus	399
Hepatitis A virus	325
Scrub typhus (*Orientia tsutsugamushi*)	274
Leptospira	167
Hepatitis E virus	154
Dengue virus	133
Hepatitis B virus	132
Rubella virus	78
Chikungunya virus	76
Hepatitis C virus	69
Varicella zoster virus (VZV)	39
Japanese encephalitis	11
Adenovirus	2
Cytomegalovirus (CMV)	2
Herpes simplex virus (HSV)	2
Human papillomavirus (HPV)	1
Total Positive Samples	**1,864**

Conclusion:

The SL-VRDL has successfully strengthened regional health security by providing rapid, high-quality diagnostic monitoring and timely identification of viral outbreaks. Through consistent participation in the national network, the laboratory ensures sustainable capacity building and evidence-based data for effective public health interventions.

Future directions: In future any outbreak investigation will be performed along with testing of above mention viruses.

4.2 TB C DST lab, SRL-HIV and ICTC lab

Title: TB Lab

Status: Ongoing

PI: Dr. Vidhan Jain

Year of initiation/ completion: ongoing

Funding source: NHM, Govt. of MP and CTD, New Delhi

Summary of the work: A total of 16,487 samples (13,720 for first line LPA, 444 for second line LPA 1,184 for culture follow-up and 1,139 for CBNAAT testing) were received in TB C and DST lab ICMR-NIRTH, Jabalpur in the year 2025. Out of 1,184 follow-up samples, 83 samples (7.0%) were MTB positive. In CBNAAT, 253 samples (22.2%) were found MTB detected. Out of all received and processed samples 9,589 were tested for FL-LPA, 845 for SL-LPA as per the algorithm as many smear negative and scanty bacilli samples were also turned out to be culture negative. In LPA testing, Rif resistance was recorded in 278 cases (2.9%) whereas 58 samples (0.6%) were found inferred Rif resistant. Further, high INH resistance was recorded in 5.8% cases and 0.3% showed inferred resistance in katG mutation profile. Low INH resistance was detected in 2% cases and inferred resistance for INHA was detected in 0.03% cases. Out of 845 SLLPA tests, 23.3% showed resistance to levofloxacin, 15.3% showed resistance to moxifloxacin and 2.5% to SLIDs.

Title: SRL-HIV **and ICTC lab**

Status: Ongoing

PI: Dr. Vidhan Jain

Year of initiation/ completion: ongoing

Funding source: MPSACS Bhopal and NACO

Summary of the work: In EQAS, 2995 samples were tested out of which 171 were positive for HIV. A total of 378 patients were screened for HIV in ICTC Jabalpur out of which 83 were positive. In ANC HSS survey 8,440 ANCs were screened out of which nine (0.1%) were HIV positive, 51 (0.6%) were syphilis positive, 103 (1.2%) were hepatitis B positive and 7 (0.08%) were hepatitis C positive. Among 400 jail inmates, 6 (1.5%) were HIV positive, 11 (2.8%) were syphilis positive, 6 (1.5%) were hepatitis B positive and 11 (2.8%) were hepatitis C positive.

4.3 MRHRU- Datia

Title: Model Rural Health Research Unit (MRHRU), Datia

Status: Ongoing

Nodal officer: Dr. Pushpendra Singh, Dr. Suyesh Shrivastava, Dr. Harshwardhan V Shende

Year of initiation/ completion: Report duration 1st April, 2025 to 31st March, 2026

Funding source: DHR, Ministry of Health and Family Welfare

Background with objective: MRHRU Datia aims to refine a localized strategic research agenda. The objective is to identify and prioritize research questions addressing key rural challenges like hypertension determinants, TB control, mental health in the elderly, healthcare resilience, and diabetes management, ensuring alignment with national priorities while focusing on Datia's rural and tribal health disparities. This will guide policy, funding, and impactful studies for improved rural health outcomes.

Work progress:

i. During the year 2025-26 first phase of population-based health survey completed with MRHRU, Datia.

ii. Various projects have been carried out in collaboration with the Government Medical College, Datia.

Conclusion: MRHRU Datia has emerged as a key hub for strengthening rural health research, with its close collaboration with Government Medical College, Datia enabling the implementation of diverse health research projects. Through community-based health surveys—giving prime focus to NCDs, tuberculosis control, mental health, and local rural health disparities—the unit has generated evidence aligned with national priorities and local needs. This body of work has provided a strong foundation for policy-relevant research, informed funding decisions, and paved the way for targeted interventions that can improve health outcomes in Datia's rural and tribal populations.

Future directions:

i. Various projects in collaboration with the Government Medical College Datia have been approved in the 8th LRAC.

ii. Second phase of Population Based Health Survey will be conducted in the year 2026-27.

4.4 MRHRU- Jheet

Population-based health survey at Model Rural Health Research Units, India (Round 1) *was* initiated on 18 October 2024 under the guidance of DHR, ICMR–NIRTH, Jabalpur.

The project was designed to generate comprehensive, community-level health data from rural and tribal populations, covering overall health status, chronic diseases, reproductive health, and children's health, and to inform planning of health interventions and policy decisions. The survey employs multiple modules, implemented through both community-based and facility-based approaches to ensure wide coverage and reliable data collection. The community-based modules include the Household module, which collects demographic and socio-economic information; the Individual module, which captures age-, sex-, and behaviour-related health information; the Children module, assessing paediatric health, growth, nutrition, and development; and the Biomarker module, which involves collection of blood samples for complete blood count (CBC), liver function tests (LFT), kidney function tests (KFT), along with blood pressure measurements to assess cardiovascular health. The facility-based modules are conducted at CHC Patan, CHC Jheet, and CHC Bhilai, and include the HTDM module, focused on hypertension and diabetes with blood pressure and blood glucose measurements, and the Reproductive Health module, which collects maternal, obstetric, and related health information and provides follow-up and counselling where needed.

The PBS was conducted using a rigorous mixed-method approach, which combines door-to-door household visits by trained Mitanins and ASHA workers with structured assessments at health facilities, ensuring that every segment of the community is reached and included. This dual approach not only ensures comprehensive and high-quality data collection but also promotes active participation and trust within the community, thereby bridging the gap between households and the formal healthcare system. Each participant received a personalized health report detailing their laboratory and clinical findings, including blood tests (CBC, LFT, KFT, and sickle cell) and blood pressure readings, enabling individuals to clearly understand their health status. This process enhances health awareness, encourages timely follow-up, and empowers participants to take informed decisions about their health, making the survey not just a research exercise, but a directly beneficial health intervention for the community.

Round 1 of the PBS projects covered a total of 5,565 individuals who were interviewed under Module 1 (Household Information), and 2,330 households completed full household-level interview sets. Within the population-based respondent modules, 509 children under 5 years, 2,419 males, 3,146 females, and 964 elderly persons (aged 60 years or older) were interviewed. Under the sub-survey facility-based screening, 640 eligible individuals underwent screening for diabetes and hypertension (HT&DM), while 578 participants were surveyed in the 15-49 year & infant age group during community and facility-based assessments. Additionally, 2,619 biomarker samples were collected and processed for the eligible population as per the requirement. Reflecting the extensive reach of the survey and its successful implementation in the selected villages. This integrated approach provides a holistic understanding of population health, strengthens evidence

for planning interventions, and ensures that individuals benefit directly through diagnostic feedback and health education.



Door to Door Physical Health Screening, Blood Collection and Questionaries.
(Community Based Public Health Survey)



Health Screening and Sample Collection at Health Centres
(Facility Based Public Health Survey)

A research project titled "***Mental Health Illnesses (Depression, Anxiety, Psychological Trauma, Addiction Behaviours) among Rural Adolescents (13–18 years) and Young Adults (19–30 years) of Patan Block, Chhattisgarh***" was initiated. The study aims to assess the mental-health burden, psychosocial stressors, addiction-linked behaviours, and access to care among youth residing in rural areas. The proposed sample size is 742, which includes 381 for adolescents and 361 for young adults.





Mental Health Survey by MRHRU-Jheet Staff of age group 12-18 years (adolescents) in schools of Patan Block.



MRHRU-Jheet staff doing Mental Health Survey of age group 18-30 years (young adults) in villages of Patan block.

All survey forms and consent letters were carefully prepared, and informed consent was obtained from every participant, with each signing to confirm their willingness to participate in the study. As of December 20, 2025, mental health surveys have been completed in Achanakpur, Bhilai, Jamgaon, Sankara, Jheet, Kugda, and Pahanda. The study is progressing according to the planned timeline, with field operations conducted with the support of schools, village stakeholders, and MRHRU-Jheet research staff. Data entry, screening-score analysis, and preliminary descriptive findings will be undertaken in subsequent quarters.

Project entitled ***Optimizing strategies for enhancing Sickle Cell Disease management in tribal population: A Multi-centric implementation research*** was initiated with aims to identify barriers and facilitators in diagnostic and health-seeking pathways among tribal communities, co-develop multi-sectoral interventions, and evaluate them using the RE-AIM framework. The study follows a mixed-method parallel design in collaboration with MRHRUs – Jharkhand (Namkum, Angara), Chhattisgarh (Durg) and MRU Ranchi. Quantitative KAP surveys and qualitative FGDs, IDIs and KIIs are being conducted across selected villages.

During the reporting period, field activities commenced in Dhamdha block (Dargaon) and extended to 10 villages. A total of 453 household interviews were completed. Awareness of SCD was 82.34%, with higher awareness among females (59.16%). Knowledge of disease transmission was 46.58%, while 65.12% reported screening, of which 2.87% were diagnosed, 6.18% were

carriers, and 55.41% were normal. FGDs and IDIs among patients, caregivers, Mitanins and health officials highlighted delays in diagnosis, financial burden, and socio-cultural challenges.

Awareness activities included poster and flyer distribution, an All India Radio broadcast, capacity-building for Mitanin trainers, and school-based awareness with principals and teachers. The project will contribute to the National Sickle Cell Anaemia Elimination Mission, supporting development of culturally appropriate strategies to enhance screening, diagnosis, and adherence. Findings are designed to be scalable, strengthening community engagement and accelerating progress toward SCD elimination by 2047.



Glimpses of Sickle Cell Disease (SCD) programme activities.

Section 5- Academic Activities and Awards

5.1 ICMR-NIRTH Academy of Scientific Innovation and Research (AcSIR) Activities:

The AcSIR–ICMR PhD Program was initiated at ICMR–NIRTH in the August 2024 academic session. Since its inception, a total of 13 research scholars has been enrolled across four batches. The inaugural batch (August 2024) comprised four scholars, including two internal permanent employees and two internal project staff. The second batch (January 2025) included two external scholars supported by UGC and CSIR fellowships. The third batch (August 2025) enrolled three scholars, funded through UGC and DST-INSPIRE fellowships. The most recent batch (January 2026) consists of four scholars, all of whom are internal employees of ICMR–NIRTH.

The AcSIR Cell at NIRTH is coordinated by Mr. Vijay Kumar Dwivedi (Technical Assistant, Social Sciences) and Ms. Meghna Mondal (Technical Assistant, Social Sciences), under the guidance of Dr. K.B. Saha, Scientist G, Professor (AcSIR), and Program Coordinator. The institute currently has eight faculty members registered under the Faculty of Medical Research (FMR) of AcSIR. Among them, Dr. Praveen Kumar Bharti (Director & Scientist G) serves as the Associate Professor, Dr. K.B. Saha serves as Professor and Program Coordinator; Dr. Pushpendra Singh (Scientist F), and Dr. Vijay Nema (Scientist F) serve as Associate Professors; while Dr. Rituraj Niranjan (Scientist E), Dr. Ravindra Kumar (Scientist D), and Dr. Vijay Pratap Singh (DBT-Ramalingaswami Fellow) serve as Assistant Professors.

In accordance with AcSIR guidelines, a Students' Science Club has been established, comprising all enrolled research scholars. The club is led by a selected student body, with Mr. Ansari Md. Afzal Md. Idris serving as President, Ms. Vishakha Thanwar as Vice-President, Mr. Soumyadeep Moyra as Treasurer, and Ms. Komal Shrivastava as Secretary. Under the aegis of this club, several academic and extracurricular activities have been organized within the institute. Some of the programs that have been organized under the AcSIR-ICMR PhD Program are as follows:

1. 13th AcSIR Foundation Day Celebration, a webinar was organized where Prof.Manoj Dhar, Director, AcSIR, addressed the students on 03rd April 2025, in which all the AcSIR scholars, faculty members and other concerned attended.
2. Teachers' Day was celebrated on 08th September 2026 by the Students' Science Club.
3. A lecture was organized on 'Gender Sensitization and POSH Act' on 24th December 2025, where Prof. Sashi Prabha Tomar, NSCB Medical College, Jabalpur, graced the event as the guest speaker.
4. The AcSIR Students' Science Club also celebrated National Startup Day where Prof. Mahesh S. Tirumkudulu, Dept. of Chemical Engineering, IIT Bombay delivered a talk, on 16th January 2026.
5. National Science Day was also observed by the AcSIR Students' science Club on 28th February 2026 under the theme 'Women in Science: Catalyzing Viksit Bharat.' The Chief Guest Lecture was delivered by Dr. V. Mohan, Chairman, Madras Diabetes Research Foundation. A popular lecture was presented by Dr. Uday Somasekhar, Professor, NSCB Medical College, Jabalpur.
6. International Women's Day was also celebrated on 09th March 2026 by ICMR-NIRTH, where Chief Guest Dr. Vineeta Ghanghoria, NSCB Medical College, Jabalpur, was invited to deliver a lecture.

The Doctoral Advisory Committee (DAC) meetings have also been conducted for the enrolled scholars, Dr. Suyesh Shrivastava, Mr. Anoop Kr. Vishwakarma, Mr. Ansari Md. Afzal Md. Idris, Mr. Rajan Poriya, Ms. Aarti Patel, Ms. Vishakha Thanwar and Ms. Komal Shrivastav, as part of the program curriculum. The proceedings and reports of these meetings have been duly compiled and submitted to the Dean, AcSIR, and the Faculty of Medical Research (FMR).



13TH AcSIR FOUNDATION DAY 2025



NATIONAL START-UP DAY 2026

TEACHERS' DAY CELEBRATION 2025









LECTURE ON GENDER SENSITIZATION AND POSH ACT 2025

5.2 Meeting/Conferences/Training organized/attended/Awards

5.2.1 Meeting organized:



i. Multi-Stakeholder Meeting at ICMR-NIRTH under ICMR-DPCI project organized on 09.02.2026.



ii. Field meeting between the staff of ICMR-NIE, Arogya World and ICMR-NIRTH on implementation strategy of m-health intervention under ICMR-DPCI Project organized on 10.02.2026 at Bargi, Jabalpur.



i. 8th LRAC meeting organized on 18.03.2026 at the Government Medical College, Datia.

5.2.2 Training organized:



Training: Orientation of school students of CM Rise School, Badoni, Datia about scientific procedure and training on lab equipment at MRHRU, Datia under S.H.I.N.E. program on 13.08.2025.



Training: Awareness talk on Breast and Cervical Cancer and a session on self-detection techniques of Breast cancer at ICMR-NIRTH on 18.09.2026.

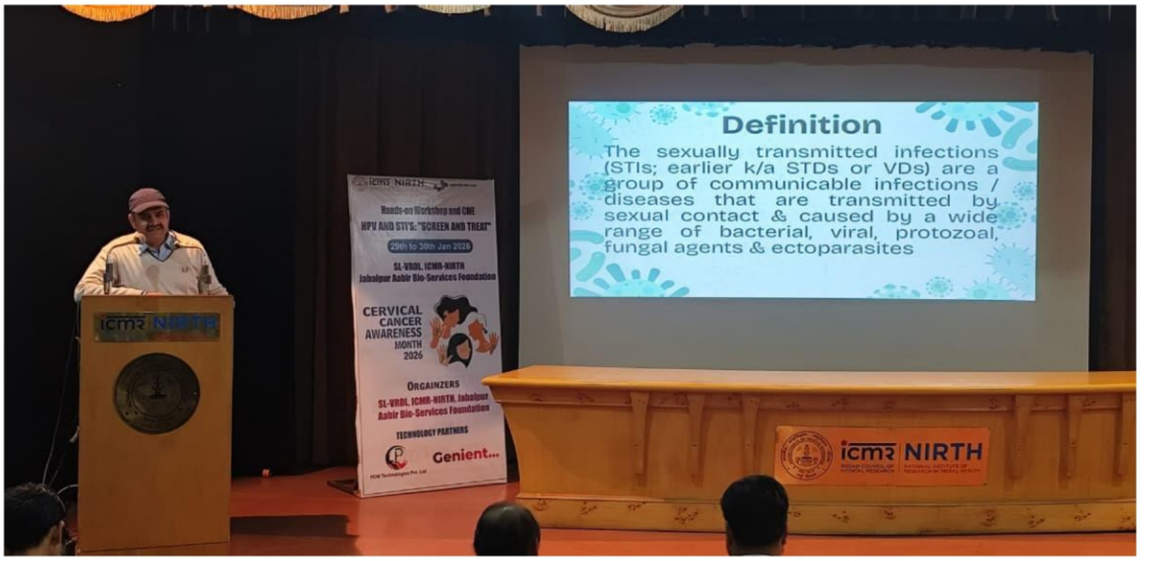


Training: Training rural women on the Usage WhatsApp-based conversational AI tool Suman Sakhi Chatbot under the Swasth Nri Shashakt Pariwaar Campaign organized on 24.09.2025



Training: Awareness program for Adolescent Girls about Menstrual Hygiene under the Swasth Nri Shashakt Pariwaar Campaign organized at CM RISE School, Badoni, Datia on 26.09.2025

Training: Awareness program on STI at ICMR-NIRTH on 30.01.2026.





Training: Training of patients on the usage of WhatsApp based messages and Chatbot for diabetes health intervention organized at Bargi, Jabalpur on 10.03.2026.



Training: Training on POC HbA1c and lipid profile devices was delivered in Chennai jointly organized under the ICMR-DPCI project on 18.03.2026.

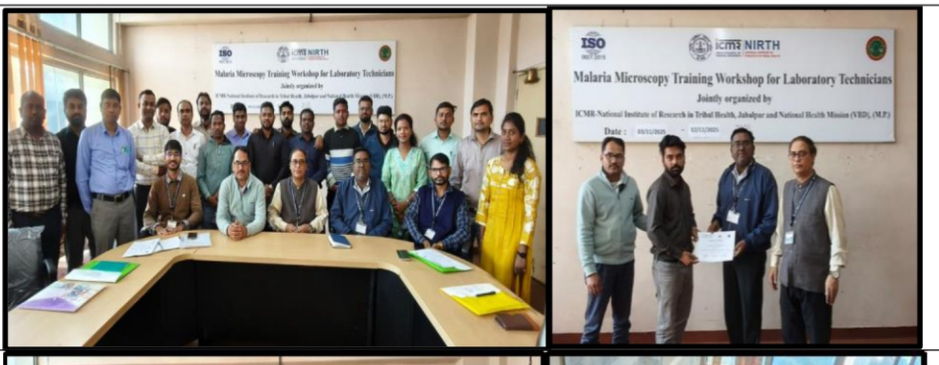


Training: Organised a training for CHO on the management of Sickle Cell

Malaria Microscopy Training: The Malaria Microscopy Training Workshop 2025-26 was organized by ICMR-NIRTH Jabalpur with financial support from National Health Mission (VBD,), Bhopal. The primary aim was to enhance the skills of Lab Technicians in malaria microscopy, ensuring accurate identification and documentation of malaria cases, working in PHC/CHC of different districts of Madhya Pradesh. Dr. Anil Kumar Verma, Scientist-D, Dr. Satyendra Pandey Scientist-C and their team conducted this 10-day hands-on training in three batches. A total of 55 participants (19+18+18) attended the training. The training covered both theoretical and practical aspects of malaria epidemiology, malaria diagnosis, structured into interactive lectures and hands-on practice in slide preparation, staining, microscopy, and documentation.

Key Activities included

- Theoretical and practical knowledge on Malaria epidemiology and diagnostics.
- Slide Preparation: Thick and thin smear techniques, fixation, and drying.
- Staining Methods: Giemsa staining (standard), Field's stain (rapid method)
- Microscopic Examination: Identifying malaria parasites at different stages, differentiating Plasmodium species (Pf, Pv, Pm, Po), and parasite density calculation.
- National drug policy on Malaria.
- Record Keeping and Reporting
- Evaluation: Pre- and post-training tests and certification.

Training Imparted	Image
Malaria Microscopy training to Lab Technician (Batch-1) Duration: 03-12.11.2025 Venue: ICMR-NIRTH, Jabalpur Number of Participants: 19	
Malaria Microscopy training to Lab Technician (Batch-2) Duration: 08-12.12.2025 Venue: ICMR-NIRTH, Jabalpur Number of Participants: 18	

Training Imparted	Image
Malaria Microscopy training to Lab Technician (Batch-3) Duration: 17-25.03.2026 Venue: ICMR-NIRTH, Jabalpur Number of Participants: 18	

Entomological Surveillance Training: ICMR-NIRTH, Jabalpur, organized a five-day training programme on "Entomological Surveillance and Insecticide Resistance Monitoring" from 09–13 March 2026, in collaboration with the National Centre for Vector Borne Disease Control (NCVBDC) through the State VBDCP and National Health Mission, Madhya Pradesh, for District Malaria Officers (DMOs). The programme was conducted by the Division of Vector-Borne Diseases with active involvement of Dr. Satyendra Pandey (Scientist-C), Dr. Anil Kumar Verma (Scientist-D), and their team. The training was successfully completed with the active participation of 14 DMOs. Dr. Praveen K. Bharti, Director, ICMR-NIRTH, appreciated the initiative and reiterated support for future capacity-building efforts towards vector-borne disease elimination.

- **Entomological Surveillance and Insecticide Resistance Monitoring for District Malaria Officer of Govt. of M.P.**
- Duration: 09-14.03.2026
- Venue: ICMR-NIRTH, Jabalpur
- Number of Participants: 14









Training: Organised Brainstorming Meeting for the setting of the clinical severity score for sickle cell disease on 16 and 17 March 2026

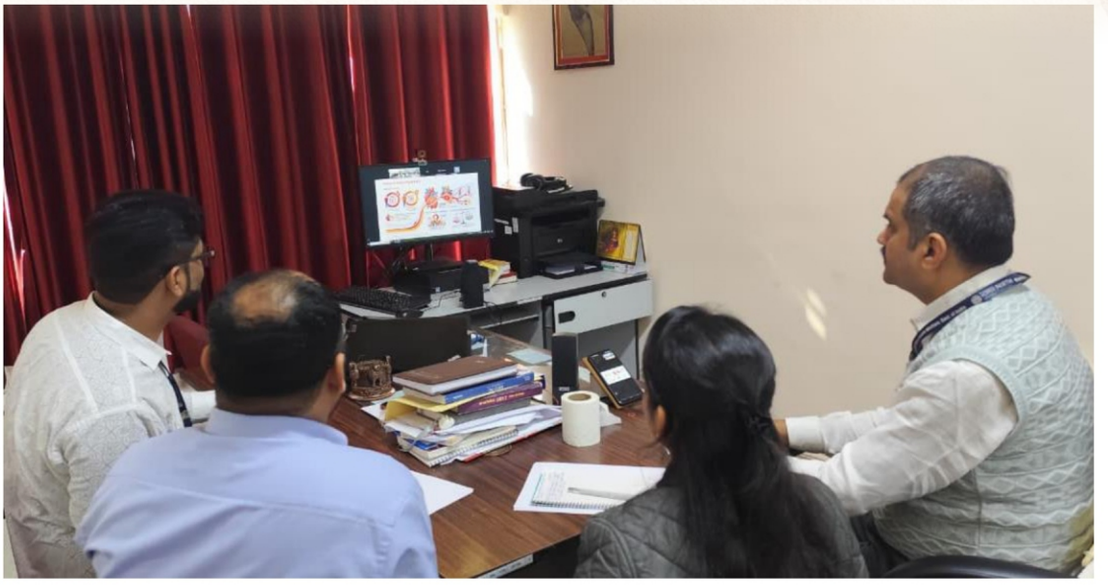
5.2.3 Other Activities:



Population Based Health Survey field work initiation at Kurthara village of Badoni, Datia



DHR Team visit at MRHRU andCHC,Badoni,Datia



Multi-Stakeholder Workshop for ICMR-DPCI at Chennai (Joined Online) on 10.12.2025



Population Health Dialogue 2026 at New Delhi on 22.01.2026



Workshop on Ethical Consideration in Biomedical and Health Research & Outreach Program at BMHRC Bhopal organized on 19.03.2026.

5.2.4 Meetings attended by the scientists and staff:

By Dr. Ravindra Kumar:



Brainstorming Meeting on PKR activator at Mumbai 13 March 2026. Organised by NovoNordisk.



Attended ISHG 2026 conference, 5 Feb to 7 Feb 2026 organised by PGIMER, Chandigarh.



Invited speaker Hemoglobinopathy Conclave: State level Consultation Meeting 2026 organised by Kash Foundation on 19 Feb 2026



Brainstorming meeting on Genetic Variability of Sickle Cell Disease in India, organized by ICMR-RMRC Sri Vijay Puram 28 to 29 Jan 2026.



Invited speaker in Awareness Talk on SCD at Global Nursing College on 16th Jan 2026



Invited Speaker in CME on Sickle Cell Disease, Dindori Hospital, Dindori on 13 Dec 2025

Awareness talk on Sickle Cell Disease in the Refresher Course on Information and Communication Technology organized by Home Science College, RDVV, Jabalpur on 21 July 2025.

Awareness Talk at Composite Regional Center for Skill Development and empowerment of persons with Disability, Jabalpur on 19 June 2025.



Invited speaker at 10th annual conference on BGCI from 4 to 6 July 2025 at Ranchi.



Observing International Thalassemia Day on 8 May at Sardar Patel University, Balaghat on 8 May 2025.



Attended 8th -ICMR Expert Group Meeting on Evaluation of Vector Control Products (ICMR-EVCP) scheduled on 23 May 2025, 11:00 AM onwards, at ICMR Headquarters.

Attended 8th -ICMR Expert Group Meeting on Evaluation of Vector Control Products (ICMR-EVCP) scheduled on 23 May 2025, 11:00 AM onwards, at ICMR Headquarters.

Attended virtual meeting on Samyoga-Ayush on 6 June 2025 organized by ICMR HQrs

Attended the Mid-Career Development Program (Batch-2) organized by IIM Visakhapatnam (IIM-V) for ICMR Scientists scheduled from 9th June to 21st June 2025

Attended webinar on Research Masterclass under DHR-ICMR Research Grand Round organized on 27/06/25 by DHR

Attended Viksit Bharat: Strategic Plan for 2025-2029 organized by ICMR HQ on 17/07/2025.

Attended a three-day Indian Conference on Bioinformatics 2025 (#InBix2025) with broad theme of Action Towards Genomics and Community health: ATGC was jointly organized by ICMR-National Institute of Research in Tribal Health, Jabalpur and Bioclues Organization on 13th to 15th Nov 2025 at NSCB Medical College Jabalpur, Madhya Pradesh.

By Dr. Anil Kumar Verma:

Attended inter-state cross-border workshop on malaria, organized on 18 March 2026 in Balaghat District of Madhya Pradesh.

Meeting Attended	Image
Inter-state cross-border workshop on malaria Duration: 18.03.26 Venue: Hotel Kamal, Balghat	

Dr. Anil Verma, Scientist-D receiving memento from Dr. Manisha Juneja, DMO, Balaghat

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Attended (virtual) inter-state cross-border workshop on malaria, organized on 18 March 2026 in Balaghat District of Madhya Pradesh.

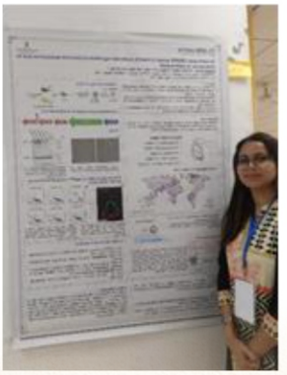
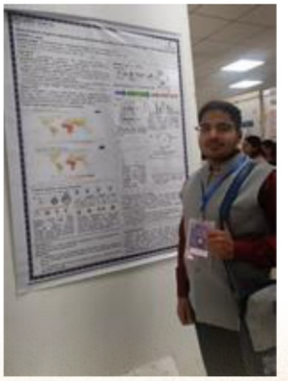
Attended a meeting on "Project Review and Future Roadmap" of the project titled "Implementation Research for Optimizing the Comprehensive Sickle Cell Anaemia Care Services under the National SCA Elimination Mission," held on 12 February 2026 at ICMR–National Institute for Implementation Research on Non-Communicable Diseases, Jodhpur. The meeting provided a valuable platform for reviewing project progress, aligning priorities, and discussing future strategies in collaboration with partner institutes.

By Dr. Harshwardhan V. Shende:

A Gram Sabha was organised at the Gram Panchayat Bhavan, Tamia, Chhindwara District, Madhya Pradesh, on 8 January 2026 to create awareness about Sickle Cell Disease and to understand the challenges faced by affected patients and their families. Dr Harshwardhan V. Shende, Scientist B, ICMR-NIRTH, attended the meeting and highlighted the complications of sickle cell disease, its symptoms, causes, and preventive measures.

By Dr. Vijay Pratap Singh:

A Global Summit on Innovations in Reproductive Biology (GSIRB) & 36th Annual Meeting of the Indian Society for the Study of Reproduction and Fertility- 2026 (ISSRF-2026) was organized in BHU, Varanasi from 20.02.2026 to 22.02.2026. Dr. Vijay Pratap Singh was invited to present about "DNA break mapping in placental cells uncovers vulnerability of CGG repetitive sequences in pregnancy complication" and also project researchers Somesh Bajpai ("Identification of genes regulating placental polyploidy using human trophoblast stem cells and genome wide CRISPRi screen") and Priyanka Dubey ("Genome wide CRISPRi screen to identify molecular regulators of placental senescence and its implications in preterm birth") had the opportunity to present their work in Poster presentation.

Priyanka Dubey was selected for the **Best Poster presentation** award.

Section 6- Publications

1	Mahajan P, Gor HR, Jadhav S, Joshi M, Nema V. Host-directed therapeutic for the treatment of Mycobacterium tuberculosis. Microbiol Res. 2025;299:128253. doi: 10.1016/j.micres.2025.128253.
2	Sharma G, Khan Z, Das D, Singh S, Singh S, Kumar M, Tiwari RR, Sarma DK. Thermal influence on development and morphological traits of Aedes aegypti in central India and its relevance to climate change. Parasit Vectors. 2025 Jul 11;18(1):279. doi: 10.1186/s13071-025-06924-7. PMID: 40646649; PMCID: PMC12255045.
3	Shrivastav K, Nasser H, Ikeda T, Nema V. Possible crosstalk and alterations in gut bacteriome and virome in HIV-1 infection and the associated comorbidities related to metabolic disorder. Viruses. 2025 Jul 16;17(7):990. doi: 10.3390/v17070990.
4	Gupta P, Shrivastava S, Kumar R. Musculoskeletal complications in sickle cell disease: Pathophysiology, diagnosis and management. Best Pract Res Clin Rheumatol. 2025 May;39(2):102033. doi: 10.1016/j.berh.2025.102033. Epub 2025 Jan 16. PMID: 39824706.
5	Sharma R, Tamrakar VK, Carpenter RE, Sharma A, Suri K, Karki S, Kyser K, Sronce R, Almas S. Evaluation of direct-to-PCR (D2P) method for molecular diagnosis of infectious diseases. Exp Mol Pathol. 2025 Sep;143:104972. doi: 10.1016/j.yexmp.2025.104972. Epub 2025 May 26. PMID: 40424696.
6	Ansari A, Kumar R, Ray SK, Patel A, Dwivedi P, Ghosh A, Machado E, Suffys PN, Singh P. Genetic variability, genotyping, and genomics of Mycobacterium leprae. FEMS Microbiol Rev. 2025 Jan 14;49:fuaf012. doi: 10.1093/femsre/fuaf012. PMID: 40280733
7	Surve S, Thakor M, Madkaikar M, Kaur H, Desai S, Shanmugam R, Mohanty SS, Pandey A, Salomi Kerketta A, Dave K, Gawit KG. Protocol for a multicentric cohort study on neonatal screening and early interventions for sickle cell disease among high-prevalence states of India. Diagnostics. 2025 Mar 14;15(6):730.
8	Kaur P, Pattabi K, Gunasekaran A, Venkatasamy V, Sivalingam A, Ramasamy S, Bitragunta S, Chakma T, Bangar SD, Sharma M, Kunwar A. Population-based surveillance for hypertension awareness, treatment, and control in nine districts-India Hypertension Control Initiative, 2018–19. Journal of Human Hypertension. 2025 May;39(5):376-86.
9	Ghosh, S., Laxmaiah, A., Chandak, G. R., Meshram, I. I., Raman, R., Sengupta, S., Yajnik, C. S., Kurpad, A. V., Sachdev, H. S., & Vitamin B12 India Study (2025). Anaemia and iron deficiency in India: a venous blood-based survey of adolescents, adults, and the elderly in eight states. European journal of clinical nutrition, 79(5), 443–451. https://doi.org/10.1038/s41430-024-01559-w
10	Suneesh NS, Dhotre K, Mahajan P, Dass D, Banerjee A, Siddiqi NJ, Malik A, Joshi M, Khan AA, Nema V, Mukherjee A. Reverse vaccinology-based design of multivalent multiepitope mRNA vaccines targeting key viral proteins of Herpes Simplex Virus type-2. Frontiers in Immunology. 2025 May 20;16:1586271.
11	Sarkar B, Guchhait R, Ma JH, Sarkar M, Dar QF, Ahn YH. Evaluating the multi-period operating efficiency of logistics firms in East Asia. Asia Pac Bus Rev. 2025:1-28. doi: 10.1080/13602381.2025.2454951.

12	Swain, S., Sharma, G., Chittora, S. et al. Molecular confirmation of a new mosquito record Aedes lineatopennis from Odisha along with a comprehensive update of mosquito (Diptera: Culicidae) fauna in India. Biologia 80, 2801–2811 (2025). https://doi.org/10.1007/s11756-025-02010-6
13	Sondhiya G, Tiwari P, Manjunathachar HV, Chouksey V, Tiwari P, Barde PV, Raut CG, Chakma T, Kaur H, Singh P. Emergence of scrub typhus-associated neurological signs in central India: an unusual manifestation in febrile illness cases in Madhya Pradesh, India. Clinical Epidemiology and Global Health. 2025 May 1;33:102000.
14	Verma A, Shrivastava S, Saxena N. Malaria and malnutrition in tribal areas of India: implications for paediatric health. Front Gastroenterol. 2025;4. doi: 10.3389/fgstr.2025.1526806.
15	Choudhary, H., Malik, G., Chauhan, D.S., Bhalla, M., Dusthackeer, A., Desikan, P., Giri, S., Kumar, S., Jayaprakasam, M., Singh, A.V. and Sethi, P., 2025. Multicentric validation of the PathoDetect™ MTB RIF & INH assay for simultaneous detection of Mycobacterium tuberculosis, & drug resistance to rifampicin & isoniazid in presumptive pulmonary tuberculosis & drug-resistant TB patients. The Indian Journal of Medical Research, 161(5), p.482.
16	Kumar D, Singh T, Children under 5-year mortality and the risk of maternal mental illness among India's Scheduled tribe. Indian J Psychiatry. 2025;67(3):350-353. doi: 10.4103 / indian jpsychiatry. indianjpsychiatry_1136_2.
17	Ghate JR, Gulati A, Mishra A, Nanda R, Pandit V, Chandraker SK, Shrivastava S, Kumar R. Association of socio-demographic and dietary factors for metabolic syndrome: A comparative study among tribal and non-tribal population. Clinical Epidemiology and Global Health. 2025 Jul 1;34:102087.
18	Niranjan R, Ganesh K. Role of cellular mechanisms in dengue pathogenesis: focus on immune cells interactions. Comb Chem High Throughput Screen. 2025;28.
19	Kumar D, Singh T. The growing risk of hypertension in India's Scheduled tribes. Hypertens Res. 2025;48(3). doi: 10.1038/s41440-025-02178-z.
20	Shukla S, Gaikwad S, Sureshgopi D, Chouksey VK, Pathe C, Mathews J, Singh J, Purwar S, Biswas D, Singh P, Maurya AK. Molecular detection of gene mutation related to drug resistance in Mycobacterium leprae. The International Journal of Mycobacteriology. 2025 Apr 1;14(2):117-25.
21	Shrivastav K, Pandey M, Gor H, Nema V. Gut virome plays an extended role with bacteriome in neurological health and disease. J Neurol Sci. 2026;481:125754.
22	Rajamani N, Pandey A, Surve S, Desai S, Kulkarni R, Gajbhiye R, Shanmugam R, Dave K, Kerketta AS, Mohanty SS, Thakor M. Barriers, facilitators and recommendations for the implementation of newborn sickle cell screening program in tribal communities: findings from a qualitative multicentric study in India. The Lancet Regional Health-Southeast Asia. 2025 Oct 1;41.
23	Dutta S, Krishna S, Vishwakarma AK, Mishra S, Khandai S, Goswami D, Kumari S, Ali N, Verma AK, Singh K, Das A, Anvikar AR, Bharti PK. Therapeutic efficacy of artemether-lumefantrine in North-Eastern states of India and prevalence of drug resistance-associated molecular markers. Malar J. 2025 Apr 1;24(1):106. doi: 10.1186/s12936-025-05338-1. PMID: 40170104; PMCID: PMC11959953.

24	Kumar D, Singh T. Can added strategy influence adequate healthcare accessibility among India's Scheduled Tribes. IJQHC Commun. 2025;5(2):lyaf009. doi: 10.1093/ijcoms/lyaf009.
25	Kaur P, Sailesh K, Krishna NS, Kriina M, Venkatesan S, Krishnan L, Kalva J, Rajagopalan M, Chandrasekharan PK, Venkatasamy V, Sait S, Somasundaram J, A S, Bitragunta S, Sharma M, Shivashankar R, Pragya P, Bangar SD, Chakma T, Kunwar A, Wankhede A, Bharadwaj R, Bharadwaj V, Reddy T SK, Kishore N, Das B, Puthussery Y, Chandran D, A BI, Gill SS, Gupta A, Gopal B, Kodirekkala R, Reddy M J, Hazare S, Neelkanth N, Grover GS, Pathni AK, Ganeshkumar P. Changing patterns in health-seeking behaviour and prescription practices for treatment of hypertension in nine districts - insights from India Hypertension Control Initiative, 2018-19 and 2023-24. BMC Public Health. 2025 Oct 27;25(1):3621. doi: 10.1186/s12889-025-24898-0. PMID: 41146104; PMCID: PMC12560275.
26	Gupta P, Kumar R. MicroRNAs in sickle cell disease: a comprehensive review. Gene. 2025;957:149470. doi: 10.1016/j.gene.2025.149470.
27	Tiwari A, Rao E, Suresh I, Tiwari M, Kumar R. Hepatobiliary manifestations in thalassemia patients: a narrative review. Hemoglobin. 2025:1-8. doi: 10.1080/03630269.2025.2493946.
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31	Palmeirim MS, Geluk A, C de Jong B, M Braet S, R Macaluso K, M Tufariello J, Lavania M, Singh I, Sharma R, Singh P, Steinmann P. Advancing Mycobacterium leprae transmission research: Insights from the R2STOP fund. PLoS Negl Trop Dis. 2025 Aug 11;19(8):e0013370. doi: 10.1371/journal.pntd.0013370. PMID: 40788929; PMCID: PMC12338790.
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33	Gupta P, Patel B, Tiwari A, Asati P, Kumar R. Association of cell adhesion molecules with vaso-occlusive crisis in sickle cell disease. Biomarkers. 2025 Nov 9:1-11. doi: 10.1080/1354750X.2025.2586746.

34	Khan N, Das A, Kumar R, Jonnalagadda M. Comparative evolutionary and structural bioinformatic analysis of the human N-acetyltransferase-2 (NAT2) gene with different mammalian and avian taxa. BMC Genomics. 2026;27:143.
35	Jain D, Seth T, Udupi S, Jain S, Bhatwadekar S, Menon N, Jena R, Kumar R, Parmar B, Goel A, Vasava A. Socioeconomic health and impact of sickle cell disease and vaso-occlusive crises in India: results from B-VOCAL study. BMJ Global Health. 2025 May 22;10(5).
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38	Niranjan R. Dengue is Still a Complicated Disease. Comb Chem High Throughput Screen. 2025 May 21. doi: 10.2174/0113862073394882250520072757. Epub ahead of print. PMID: 40415298.
39	Gupta P, Kumar R, Niranjan R. miRNA in diagnosis and therapeutics of tuberculosis: importance in latent and brain associated pathologies. Curr Pharm Des. 2025 Jul 11. doi: 10.2174/0113816128362931250619113617.
40	Gupta Y, Avanzi C, Vera-Cabrera L, Paniz-Mondolfi AE, Schuenemann VJ, Singh P. Editorial: Advances in the molecular epidemiology and diagnostics of leprosy and other mycobacterial diseases. Front Trop Dis. 2025;6. doi: 10.3389/fitd.2025.1622530.
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42	Gahwai D, Dayama S, Mishra A, Chandraker SK, Sahu B, Sharma M, Kumar R. Food scarcity and decrease in income are associated with depression after COVID-19 pandemic in rural settings. Frontiers in Public Health. 2025 Apr 2;13:1526300.
43	Kujur F, Saha UC, Saha KB. Role of pesa act in village development of PVTGss of Gaurella block of Chhattisgarh. IJFMR. 2025; 7(3).
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44	Gupta P, Asati P, Tiwari A, Kumar R. Association of cell adhesion molecules levels & single nucleotide polymorphisms with vaso-occlusive crisis in sickle cell disease: a cross sectional study. Indian J Med Res. 2025 Sep;162(3):389-398. doi: 10.25259/IJMR_406_2025.
45	Shende HV, Digarse T, Singh D, Saha KB. Anxiety and depression in schedule tribes of India: A review. International journal of Psychology Sciences. 2026;8(3): 11-14.

46	Sharma M, Dwivedi P, Tripathi S, Patel P, Singh P. Molecular Detection of Mycobacterium Leprae Using RLEP Loop-Mediated Isothermal Amplification and a Restriction Enzyme to Ensure Amplification Specificity. Jpn J Infect Dis. 2025 Sep 19;78(5):164-167. doi: 10.7883/yoken.JJID.2024.251. Epub 2024 Dec 27. PMID: 39756961.
47	Mahajan P, Gor H, Joshi M, Nema V. DapB is a conserved target for tackling antimicrobial resistance in Mycobacterium tuberculosis. J Biomol Struct Dyn. 2025 Nov 6:1-12. doi: 10.1080/07391102.2025.2581074.
48	Kumar D, Singh T, Shende HV. Utilization of antenatal care (ANC) services among tribal mothers in central India: a cross-sectional study. J Commun Health Manag. 2025;12(3):100-105. doi: 10.18231/j.jchm.13632.1760769655.
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50	Singh S, Alawa B, Mehra SS, Chakma S, Diwan V. Microplastics: an emerging environmental contaminant in surface water bodies of Indore, Central India. J Environ Sci Health A Tox Hazard Subst Environ Eng. 2025;60(8):385-395. doi: 10.1080/10934529.2025.2594366. Epub 2025 Dec 12. PMID: 41384717.
51	Chandel N, Patel P, Somvanshi PR, Verma AK, Thakur V. Inverse Association between Serum Vitamin B12 Level and Abundance of Potential B12-Producing Gut Microbes in Indian Children. J Nutr. 2025 Dec;155(12):4284-4295. doi: 10.1016/j.tjnut.2025.10.021. Epub 2025 Oct 13. PMID: 41093108.
52	Nagisetty S, Shrivastava S, Kumar R. Undernutrition status among tribal children of India-a systematic review & meta-analysis. J Public Health (Oxf). 2026;48(1):291-307.
53	Harshavarthini M, Kombiah S, Pandey S, Rawal V, Anjal K, Singh P, Barde PV. Preliminary evaluation of inactivated antigens as diagnostic controls in molecular detection of vector-borne diseases in low-resource settings. Journal of Vector Borne Diseases. 2025 Aug 4:10-4103.
54	Jadhav S, Boro P, Chauware V, Nema V. Associations between HIV, sexually transmitted diseases, and antimicrobial resistance in the era of combination antiretroviral therapy and antibiotics. Microbes Immun. 2025 Sep 30;025250057. doi: 10.36922/MI025250057.
55	Verma R, Das G, Manjunathachar, M. V., Muwel N, Choudhary R, Kumar S, Nath S, Gattani A, Gupta V, Sharma RK, Ajith Y. CRISPR-Cas systems: Pioneering next-generation diagnostic tools for parasitic diseases. Mol Biochem Parasitol. 2025 Dec;264:111708. doi: 10.1016/j.molbiopara.2025.111708. Epub 2025 Oct 27. PMID: 41161575.
56	Mohanty AK, Eapen A, Singh H, Singh K, Baharia RK, Jain V, Mazumdar D, Sharma S, Shriram AN, Vidhya PT, Sharma A. A multicentric study on understanding the bionomics of Indian malaria vectors across diverse eco-epidemiological settings. Parasites & Vectors. 2026 Jan 8.
57	Khan N, Jonnalagadda M, Kumar R, Das A. NAT2 acetylation phenotypes in India: a narrative review of personalized TB therapy. Pharmgenomics Pers Med. 2026;19:568037.

58	Ahmad A, Nema S, Arora K, Sikka R, Singh A, Krishna S, Singh MP, Verma AK, Nitika N, Anvikar AR, Gupta H. Evaluation of GDH and HDP as novel serological biomarkers for Plasmodium falciparum malaria diagnosis across varying parasitemia and transmission settings in India. Plos one. 2025 Oct 15;20(10):e0334313.
59	Vats TK, Prajapati R, Rawal V, Ankur, Nida, Thakur LK, Mullick S. Antifeedant effect of emulsifiable concentrate formulation of Ageratum conyzoides (L.) (Asteraceae) extracts against Plutella xylostella (L.) (Lepidoptera: Plutellidae). Res J Chem Environ. 2025;29(1):19-25.
60	Kumari N, Kumar R, Patro IK, Das A. Association of HLA class I allele and tuberculosis susceptibility: a systematic review and meta-analysis. Scientific Reports. 2025 Dec 9.
61	Rajasubramaniam S, Mishra N, Balakrishna SL, Kumawat A, Gaur R, Sharma A, Das A. A pilot study on the prevalence and patterns of haemoglobinopathies in Datia District, Madhya Pradesh, India. Scientific Reports. 2025 Dec 1;15(1):42835.
62	Anjal K, Rawal V, Pandey S, Harshavarthini M, Verma AK, Mohan B, Gurha S, Sondhiya G, Ansari A, Kombiah S, Shrivastava S. Vector incrimination studies of lymphatic filariasis in rural areas of endemic Datia district of Madhya Pradesh, India. Transactions of The Royal Society of Tropical Medicine and Hygiene. 2025 Sep;119(9):1059-65.
63	Mishra P, Bhat J, Sharma RK, Yadav R, Muniyandi M, Lingala MA, Nigam S, Rao VG. Drug-resistant tuberculosis treatment outcomes among Saharia: a marginalized community of Madhya Pradesh, India. Trans R Soc Trop Med Hyg. 2025 Oct 1;119(10):1135-1140. doi: 10.1093/trstmh/traf046. PMID: 40337857.
64	Sikenis M, Prajapati B, Singh AK, Patil T, Yadav V, Singh S, Gangwar M, Diwan V, Mandal UK, Biswas D, Nema S, Tiwari RR, Mishra PK, Singh P, Corovic IF, Nema RK. Prevalence of sapovirus infection among hospitalized pediatric patients in Asia: A systematic review and meta-analysis. World J Virol. 2026 Mar 25;15(1):118273. doi: 10.5501/wjv.v15.i1.118273. PMID: 41884448; PMCID: PMC13010949.

Section 7- Human Resources

List of staff:

S.No.	Name With Designation
1	Dr. Praveen Kumar Bharti, Director
2	Dr. Kalyan B. Saha, Scientist `G'
3	Dr. Vijay Nema, Scientist `F'
4	Dr. Pushpendra Singh, Scientist `F'
5	Dr. Dinesh Kumar, Scientist `F'
6	Dr. Rituraj Niranjan, Scientist `E'
7	Dr. Vidhan Jain, Scientist `D'
8	Dr. Ravindra Kumar, Scientist `D'
9	Dr. Anil Kumar Verma, Scientist `D'
10	Dr. Suyesh Shrivastava, Scientist `D'
11	Dr. Satyendra Pandey, Scientist `C'
12	Dr. Harshwardhan V Shende, Scientist `B'
13	Sh. Jiwan Singh Bisht, Administrative Officer
14	Sh. Ankit Kumar Mishra, Section Officer (Estt.)
15	Mrs.Priyanka Gupta, Section Officer (Store)
16	Sh. Subash Ch. Muduli, Private Secretary
17	Mrs.Canina Luke, Technical Officer-B
18	Sh. Lalit K. Sahare, Technical Officer-B
19	Sh. Mahendra Jaidev Ukey, Technical Officer-B
20	Mrs.Nazia Anwar Ali, Technical Officer-B
21	Sh. Nitish Singh Parihar, Technical Officer-A
22	Sh. Vivek Kumar Chouksey, Technical Officer-A
23	Sh. Subhash S. Kumbhare, Senior Technician (3)
24	Sh. Pradeep Kumar Namdeo, Senior Technician (3)
25	Sh. Genda Lal Gond, Senior Technician (3)
26	Dr. Shiv Kumar Singh, Senior Technician (2)
27	Sh. Aman Siyote, Assistant
28	Sh. Narendra K. Jhariya, Assistant
29	Ms. Amisha Patel, Assistant
30	Sh. Arpit Mourya, Technical Assistant
31	Sh. Deepanshu Bhatia, Technical Assistant
32	Sh. Saurabh Singh, Technical Assistant

33	Sh. Vijay Kumar Dwivedi, Technical Assistant
34	Sh. Pankaj Dheer, Technical Assistant
35	Sh. Tarendra Digarse, Technical Assistant
36	Sh. Chandan Kumar, Technical Assistant
37	Sh. Anand Kumar, Technical Assistant
38	Sh. Gaurav Sharma, Technical Assistant
39	Sh. Taranand Singh, Technical Assistant
40	Ms. Modali Sravani, Technical Assistant
41	Sh. Ratnesh Mishra, Technical Assistant
42	Sh. Chirantan Maity, Technical Assistant
43	Ms. Diksha Singh, Technical Assistant
44	Ms. Ankita Mourya, Technical Assistant
45	Sh. Surendra Singh Mehra, Technical Assistant
46	Ms. Meghna Mondal, Technical Assistant
47	Sh. Sujeet Gupta, Technical Assistant
48	Sh. Santosh Kumar Patkar, Senior Technician (1)
49	Sh. Surendra K. Jhariya, Senior Technician (1)
50	Sh. Sahas Ram Shukla, Lab. Technician
51	Sh. Sanjeev Kumar Shukla, Field Lab.Attendant
52	Sh. Kaushal Kumar Shukla, Field Lab.Attendant
53	Sh. Hari Barman, Technician-2
54	Sh. Shashi Bhushan Dubey, Technician-2
55	Sh. Ramswaroop Uikey, Technician-2
56	Mrs.Mala Prajapati, Technician-2
57	Sh. Anup K. Vishwakarma, Technician-2
59	Sh. Sarthak Soni, Stenographer
60	Sh. Sharad Kumar Kosta, Upper Division Clerk
61	Sh. Rahul Koshta, Upper Division Clerk
62	Sh. Vikas Kumar Gupta, Upper Division Clerk
63	Ms. Anjali Rajput, Upper Division Clerk
64	Sh. Anupam Raj, Lower Division Clerk
65	Sh. Dharmendra Dharwey, Technician-1
66	Sh. Shivam Nigam, Technician-1

67	Sh. Mohit Saini, Technician-1
68	Ms. Palak Jain, Technician-1
69	Ms. Ayushi Nagriya, Technician-1
70	Sh. Shubham Chaudhari, Technician-1
71	Sh. Waseem Khan, Technician-1
72	Sh. Monu Dalal, Technician-1
73	Sh. Lavlesh Kumar Maurya, Technician-1
74	Sh. Nitin Upadhyay, Technician-1
75	Sh. Vaibhav Bisht, Technician-1
76	Sh. Jitendra Kumar, Technician-1
77	Sh. Vijendra Kumar Singh, Technician-1
78	Ms. Sonika Wats, Technician-1
79	Sh. Ajay Kumar Soni, Laboratory Assistant-1
80	Sh. Madan Singh Maravi, Laboratory Assistant-1
81	Sh. Prem Singh Gond, Laboratory Assistant-1
82	Sh. Sone Lal Dumar, Laboratory Assistant-1
83	Sh. Ganga Bahadur, Laboratory Assistant-1
84	Sh. Pritam Lal Gond, Laboratory Assistant-1
85	Sh. Pappu Lal Dumar, Laboratory Assistant-1
86	Sh. Arakh Chand Malik, Laboratory Assistant-1
87	Sh. Rajendra Prasad Gond, Laboratory Assistant-1
88	Mrs.Shashi Prabha Mishra, Laboratory Assistant-1
89	Sh. Shamshad Ali Ansari, Laboratory Assistant-1
90	Sh. Santosh Kumar Haldkar, Laboratory Assistant-1
91	Sh. Dharmender K. Lodhi, Senior Technician (1)
92	Sh. Vinay Kumar Balmik, Laboratory Assistant-1
93	Sh. Lalju Singh, Peon
94	Sh. Santosh Kumar Maravi, Laboratory Attendant-2
95	Sh. Mukesh S. Kachhwaha, Laboratory Attendant-2
96	Sh. Raja Sonkar, Multi Tasking Staff (Gen)
97	Sh. Harsh Sonkar, Laboratory Attendant-1
98	Ms. Bharti Shiv, Laboratory Attendant-1

Staff Newly Recruited

S.No.	Name With Designation And Date
1	Sh. Bharat Singh Chundavat, Ldc Dt. 29.08.2025
2	Sh. Anupam Raj, Ldc Dt. 29.08.2025
3	Ms. Amisha Patel, Assistant Dt. 01.09.2025

Staff Transferred IN/OUT

S.No.	Name With Designation In/Out/Date
1	Dr. Vijay Nema, Scientist `F' (In/Dt. 01.04.2025)
2	Dr. Shri Krishna, To-A (Out/06.06.2025)
3	Sh. Jiwan Singh Bisht, Administrative Officer (In/Dt. 28.08.2025)
4	Sh. C. Somasekhar, Sr. Accounts Officer (Out/Dt. 01.09.2025)
5	Dr. Nishant Saxena, Scientist-C (Out/Dt. 14.11.2025)
6	Dr. Praveen Kumar Bharti, Director (In/Dt. 10.02.2026)
7	Sh. Avinash Kumar Dubey, Technician-2 (In/Dt. 10.03.2026)
8	Dr. Vagisha Rawal, Scientist `C' (Out/26.03.2026)

Staff Retired/Resign

S.No.	Name With Designation And
1	Dr. Tapas Chakma, Scientist-G (Dt. 30.06.2025)
2	Sh. Hakim Singh Thakur, Jr. Translation Officer (Dt. 30.06.2025)
3	Sh. Ashok Kumar Saini, Sr. Technician-3 (Dt. 30.06.2025)
4	Sh. Jagdish Prasad Thakur, Laboratory Asstt.-1 (Dt. 30.06.2025)
5	Sh. Mahendra Kumar Jain, Laboratory Asstt.-1 (Dt. 30.06.2025)
6	Sh. Om Prakash Dubey, Driver/Sr. Technician-1 (Dt. 31.07.2025)
7	Sh. Ramesh Kumar Ahirwar, Laboratory Asstt.-1 (Dt. 31.08.2025)
8	Sh. Ram Kumar Verma, Sr. Technician-3 (Dt. 30.09.2025)
9	Sh. Bharat Singh Chundavat, Ldc (Resign_Dt. 27.11.2025)
10	Dr. S. Rajasubramaniam, Scientist-F (Dt. 31.12.2025)
11	Sh. Sachchidanand Singh, Pto (Dt. 31.12.2025)
12	Sh. Santosh Kumar Kol, Laboratory Asstt.-1 (Dt. 31.12.2025)
13	Sh. Anil Vinodia, Laboratory Assistant-1 (Dt. 31.03.2026

Section 8- Budget

Parameter	Details
Institute Name	**ICMR-National Institute of Research in Tribal Health, Jabalpur (M.P.)**
Reporting Year	April 2025 – March 2026
Total Budget (Sanctioned (ICMR and Others) vs Utilized) 2025-26	₹ 24,52,89,637.63 / ₹ 14,28,04,815.77
ICMR	₹ _6,58,32,734.55_ / ₹ _2,94,66,484.00_
Others	₹ _17,94,56,903.08_ / ₹ _11,33,38,331.77_
Total ICMR Budget utilized	₹ _14,28,04,815.77_
Key Collaborations (National/Intl)	CCRAS, DBT, CCMB Hyderabad, DHR, IISER-Berhampur, Government of Madhya Pradesh, etc

Section 9- Rajbhasha Progress Report

राजभाषा नीति के कार्यान्वयन एवं अनुपालन से संबंधित प्रगति रिपोर्ट

आईसीएमआर-राष्ट्रीय जनजाति स्वास्थ्य अनुसंधान संस्थान, जबलपुर में भारत सरकार, गृह मंत्रालय, राजभाषा विभाग की राजभाषा नीति के समुचित कार्यान्वयन एवं अनुपालन के लिए सतत प्रयास किए जा रहे हैं। प्रतिवेदन अवधि के दौरान इस संस्थान में हिंदी के प्रगामी प्रयोग एवं सरकारी कामकाज में हिंदी के प्रयोग को बढ़ावा देने हेतु किए गए प्रयासों का संक्षिप्त विवरण इस प्रकार है:-

1. राजभाषा कार्यान्वयन समिति

राजभाषा विभाग के आदेशानुसार इस अनुसंधान संस्थान में 'राजभाषा कार्यान्वयन समिति' गठित है:-

1.	डॉ. प्रवीण कुमार भारती, निदेषक	- अध्यक्ष
2.	डॉ. के.बी. साहा, वैज्ञानिक-जी	- उपाध्यक्ष
3.	श्री जीवन सिंह बिष्ट, प्रषासनिक अधिकारी	- सदस्य
4.	श्री अंकित कुमार मिश्रा, अनुभाग अधिकारी (स्था.)	- सदस्य
5.	श्रीमती प्रियंका गुप्ता, अनुभाग अधिकारी (स्था.)	- सदस्य
6.	श्री नरेन्द्र कुमार झारिया, सहायक	- सदस्य सचिव
7.	सुश्री मेघना मंडल, तकनीकी सहायक	- सदस्य
8.	सुश्री मोडाली श्रावणी, तकनीकी सहायक	- सदस्य
9.	श्री सार्थक सोनी, आषुलिपिक	- सदस्य

सामान्यतः प्रत्येक तीन माह में इस समिति की बैठक होती है, जिसमें इस अनुसंधान संस्थान में राजभाषा कार्यान्वयन एवं अनुपालन की स्थिति की समीक्षा की जाती है तथा सरकार द्वारा निर्धारित लक्ष्यों को प्राप्त करने हेतु आवश्यक उपायों की संस्तुति की जाती है। प्रतिवेदन अवधि तक इस समिति की कुल 103 तिमाही बैठकें आयोजित की जा चुकी हैं।

2. हिंदी पत्राचार एवं टिप्पणी-लेखन

प्रतिवेदन अवधि के दौरान इस केन्द्र द्वारा 'क' क्षेत्र को मूलतः हिंदी में लगभग 50 प्रतिशत और उससे अधिक पत्राचार किया गया। साथ ही सरकार द्वारा निर्धारित लक्ष्य के अनुरूप हिंदी पत्राचार को 'क' क्षेत्र के अलावा 'ख' एवं 'ग' क्षेत्रों के साथ भी मूल हिंदी पत्राचार को बढ़ाने के लिए प्रयास किए जा रहे हैं। अधिकांश फाइलों पर भी हिंदी में टिप्पणियां लिखी जाती हैं। पिछली बैठकों में संस्थान द्वारा मूल हिंदी पत्राचार एवं मूल रूप से हिंदी टिप्पणी-लेखन का प्रतिशत और बढ़ाए जाने तथा संस्थान में प्रतिवर्ष हिंदी की नई पुस्तकों की खरीद पर कार्यान्वयन के कदम उठाए गए हैं।

3.धारा 3(3) एवं राजभाषा नियम - 5 का अनुपालन

राजभाषा अधिनियम, 1963 (यथासंशोधित 1967) की धारा 3(3) के अनुपालन में सामान्य-आदेश/परिपत्र, सूचना के अंतर्गत रिक्त पदों के विज्ञापन, निविदा सूचना एवं निविदा प्रपत्र आदि निर्दिष्ट दस्तावेजों के अतिरिक्त रिक्त पदों के विज्ञापन आदि भी हिंदी/द्विभाषी रूप में जारी किए जाते हैं।

4. प्रशिक्षण

इस संस्थान के अधिकांश अधिकारियों एवं कर्मचारियों को हिंदी का कार्यसाधक ज्ञान/प्रवीणता प्राप्त है और प्रशासनिक अनुभागों - स्थापना, लेखा एवं भंडार अनुभागों में तैनात कर्मचारियों द्वारा अधिक से अधिक मूलतः हिंदी में सरकारी कामकाज निष्पादित करने का प्रयास किया जाता है।

राजभाषा विभाग के निर्देशों के अनुसार, जिन कर्मचारियों को हिंदी टंकण एवं हिंदी आशुलिपि के सेवाकालीन प्रशिक्षण की आवश्यकता थी, उन सभी को हिंदी शिक्षण योजना, राजभाषा विभाग, जबलपुर कार्यालय से हिंदी टंकण/हिंदी आशुलिपि का प्रशिक्षण दिलाया गया है। वर्तमान में केवल एक आशुलिपिक हिंदी आशुलिपि प्रशिक्षण के लिए शेष हैं, उन्हें शीघ्र ही हिंदी शिक्षण योजना के माध्यम से हिंदी आशुलिपि का प्रशिक्षण दिलाया जाएगा।

5. विभागीय परीक्षाओं में द्विभाषी प्रश्न-पत्र उपलब्ध कराना: सरकार द्वारा जारी निर्देशों के अनुसार इस केंद्र में अधीनस्थ सेवाओं की भर्ती परीक्षा एवं विभागीय परीक्षाओं में द्विभाषी प्रश्न-पत्र उपलबध कराए जा रहे हैं।

6. प्रशिक्षण कार्यक्रमों एवं वैज्ञानिक विषयों पर व्याख्यानों में हिंदी को प्रमुखता: इस संस्थान में अनुसंधान कार्य से संबंधित प्रशिक्षण कार्यक्रमों और वैज्ञानिक व्याख्यानों आदि में हिंदी को प्रमुखता प्रदान की जाती है, जिससे अधिक से अधिक लोगों तक इसका लाभ पहुँच सके।

7. हिंदी कार्यशाला का आयोजन: संस्थान द्वारा प्रतिवेदन अवधि के दौरान दो हिंदी कार्यशाला का आयोजन किया गया जिसमें संस्थान के सरकारी कर्मचारी अधिकारी ने बढ़ चढ़कर भाग लिया प्रथम हिंदी कार्यशाला दिनांक 12 12.2025 को आयोजित की गई जिसमें कार्यालय कार्य को हिंदी में विधिवत एवं नियम अनुसार किस प्रकार किया जाना है उसके बारे में व्याख्यान जानकारी प्रदान की गई द्वितीय कार्यशाला 26.3.2026 को आयोजित की गई जिसमें संस्थान के अधिकारी कर्मचारी सम्मिलित हुए साथ ही इस कार्यालय में किए जा रहे कार्यों को हिंदी में करने हेतु प्रमुखता प्रधान की जाए इस उद्देश्य से राजभाषा नीति के अंतर्गत अधिनियम नियमों आदेशों का अनुपालन करने का आवाहन किया गया

8.हिंदी-दिवस/हिंदी-पखवाड़ा

राजभाषा विभाग के निर्देशों के अनुसार हिंदी के प्रचार-प्रसार एवं मूलतः हिंदी में सरकारी कार्य करने को बढ़ावा देने के उद्देश्य से संस्थान में प्रति वर्ष हिंदी-दिवस एवं हिंदी-पखवाड़ा मनाया जाता है। इस दौरान निदेशक महोदय द्वारा सभी अधिकारियों एवं कर्मचारियों से सरकारी कामकाज अधिकाधिक हिंदी में करने की अपील की जाती है एवं अधिकारियों व कर्मचारियों के लिए हिंदी की विभिन्न प्रतियोगिताएँ आयोजित की
जाती हैं।

इस वर्ष 15.09.2025 से 30.09.2025 तक 'हिंदी-पखवाड़ा' मनाया गया। इसके अंतर्गत संस्थान के वैज्ञानिकों, अधिकारियों एवं कर्मचारियों के लिए हिंदी टंकण (कम्प्यूटर पर), हिंदी निबंध-लेखन, हिंदी वाद-विवाद एवं हिंदी कविता-पाठ प्रतियोगिताएं आयोजित की गईं। 'हिंदी-पखवाड़ा' के समापन अवसर पर दिनांक 30.09.2025 को संस्थान के निदेशक महोदय (अतिरिक्त प्रभार) डॉ. राजनारायण आर. तिवारी की जबलपुर में अनुपस्थिति होने के कारण उनके द्वारा मनोनीत वरिष्ठ वैज्ञानिक डॉ. एस. राजसुब्रमानियम, वैज्ञा – 'एफ' ने कार्यक्रम की अध्यक्षता की, मुख्य-अतिथि के रूप आमंत्रित हिंदी विभागाध्यक्ष प्रधानमंत्री उत्कृष्ट महाविद्यालय, शासकीय महाकौशल महाविद्यालय, जबलपुर एवं अध्यक्ष, अध्ययन मंडल, आरडीवीवी, जबलपुर प्रोफेसर (डॉ.) अरुण शुक्ला द्वारा हिंदी प्रतियोगिताओं के विजेताओं को नकद पुरस्कार एवं प्रमाण-पत्र प्रदान कर उन्हें प्रोत्साहित किया तथा अपने संबोधन में राजभाषा नीति के अंतर्गत अधिनियम, नियमों, आदेशों का अनुपालन करने तथा दैनिक सरकारी कामकाज में अधिक से अधिक हिंदी का प्रयोग करने का आह्वान किया गया।

'हिंदी-पखवाड़ा' के अंतर्गत संपन्न इन हिंदी प्रतियोगिताओं के विजेताओं तथा उन्हें प्रदान किए गए नकद पुरस्कारों की सूची इस प्रकार है:-

1. हिंदी टंकण प्रतियोगिता :

श्री तारेन्द्र डिगरसे, तक.सहा.	प्रथम पुरस्कार	₹ 5000/-
श्री राहुल कोष्टा, उ.श्रे.लि.	द्वितीय पुरस्कार	₹ 3000/-
श्री सुभाष चन्द्र मुदुली, निजी सचिव	तृतीय पुरस्कार	₹ 2000/-
श्री शरद कुमार कोष्टा, उ.श्रे.लि.	सांत्वना पुरस्कार (I)	₹ 1000/-
श्री शिवम निगम, तकनीशियन-1	सांत्वना पुरस्कार (II)	₹ 1000/-

2. हिंदी निबंध-लेखन प्रतियोगिता :

डॉ. सत्येन्द्र पाण्डेय, वैज्ञानिक-सी	प्रथम पुरस्कार	₹ 5000/-
श्री शिवम निगम, तकनीशियन-1	द्वितीय पुरस्कार	₹ 3000/-
श्री तारानन्द सिंह, तक.सहा.	तृतीय पुरस्कार	₹ 2000/-
सुश्री. अंकिता मौर्य, तकनीशियन-1	सांत्वना पुरस्कार (I)	₹ 1000/-
श्री चिरंतन मैती, तक.सहा.	सांत्वना पुरस्कार (II)	₹ 1000/-

3. हिंदी वाद-विवाद प्रतियोगिता :

श्री शिवम निगम, तकनीशियन-1	प्रथम पुरस्कार	₹ 5000/-
डॉ. सत्येन्द्र पाण्डेय, वैज्ञानिक-सी	द्वितीय पुरस्कार	₹ 3000/-
श्री कौशल कुमार शुक्ल, एफ.एल.ए.	तृतीय पुरस्कार	₹ 2000/-
श्री सुरेन्द्र सिंह मेहरा, तक.सहा.	सांत्वना पुरस्कार (I)	₹ 1000/-
श्री विवेक कुमार चौकसे, तक.अधि. – ए.	सांत्वना पुरस्कार (II)	₹ 1000/-

4. हिंदी कविता-पाठ प्रतियोगिता :

श्री शिवम निगम, तकनीशियन-1	प्रथम पुरस्कार	₹ 5000/-
सुश्री.अंकिता मौर्य, तकनीशियन-1	द्वितीय पुरस्कार	₹ 3000/-
श्री विवेक कुमार चौकसे, तक.अधि. – ए.	तृतीय पुरस्कार	₹ 2000/-
श्री चिरंतन मैती, तक.सहा.	सांत्वना पुरस्कार (I)	₹ 1000/-
डॉ. सत्येन्द्र पाण्डेय, वैज्ञानिक-सी श्री नितीश सिंह परिहार, तक.अधि. – ए.	सांत्वना पुरस्कार (संयुक्त II)	₹ 1000/-

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कुल योग ₹- 48,000/-

(अडतालीस हजार रुपए मात्र)