ANNUAL REPORT
वार्षिक प्रतिवेदन
2014-15

WORLD HEALTH ORGANIZATION
Collaborating Centre for the Health of Indigenous Populations

राष्ट्रीय जनजाति स्वास्थ्य अनुसंधान संस्थान
(भारतीय आयुर्विज्ञान अनुसंधान परिषद)
जबलपुर (म.प्र.)

NATIONAL INSTITUTE FOR RESEARCH IN TRIBAL HEALTH
(indian Council of Medical Research)
JABALPUR (MP)

Sculpture of "Bison Horn Maria"
Sketched by : Dr. K.B. Saha, Scientist 'E'

Bison Horn Maria

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जनजाति स्वास्थ्य के लिए सहयोगी केन्द्र

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Preface...

I am extremely happy to keep on record the satisfactory progress of National Institute for research in Tribal Health (NIRTH) and present the activity report for the period 2014-15. The remarkable achievement of this period is the fact that the institute is now raised to the status of a national institute. We conceive that with enhanced status, the new responsibilities has increased many folds and the horizon of the work and area has also expanded and creates opportunities as well as challenges to face in the days to come.

The institute is assisting Ministry of Tribal Affairs (MoTA), Govt. of India in sickle cell screening in the country. NIRTH is actively involved in formulation of new programs to address the serious problem of sickle cell diagnosis of tribal population. It has conducted training for officials in 11 states. State governments are taking active interest in tackling various haemoglobinopathies and diagnosis of sickle cell and initiation has been taken in many states in mission mode and the same being monitored by Prime Minister's Office.

The institute has come up with new research projects which are also translational in nature and directly intend to benefit the people particularly the tribal population. The study on tuberculosis among the Sahariya particularly vulnerable tribe of Madhya Pradesh has echoed the gravity of the problem and draws the attention of the State head and programme managers for immediate action. The institute is slowly involving into larger responsibility in tuberculosis control among the tribal population of the state.

During the period institute has investigated outbreaks of several diseases and suggested mitigation measures to state health authorities. New projects are initiated in the field of malaria, social and behavioural sciences, genetics, tuberculosis etc. The project on establishing communication strategy and other bio-medical interventions including active surveillance for control of malaria in the tribal district of Dindori has yielded encouraging results and has been noted by the Ministry of Tribal Welfare (MoTA), Govt. of India. The study shows good example of public private partnership and the same may be replicated with necessary modification particularly in tribal areas with serious problem of malaria.

The virology laboratory of the institute is involved in diagnosis of 15 different viruses of public health importance. The laboratory demonstrated its utility during the upsurge of influenza and acted as a nodal laboratory for the state of Madhya Pradesh and assisted the state government in procurement of reagents for entire state. The HIV laboratory of the

institute is now accredited by National Accreditation Board for Testing & Calibration of Laboratories (NABL).

The institute has strengthened its networking with the state government and establishing Model Rural Health Research Units in Datia in M.P. and Bilaspur in Chattisgarh. Institute has also successfully taken up challenges of establishing a field unit at Keylong in Himachal Pradesh to study the local health problems of population residing in difficult situation.

Beside research, the institute also maintains and promotes its activities for academic enrichment. The students from various universities such as Rani Durgawati Vishwavidyalaya, Jabalpur, Symbiosis, Pune and Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal are undertaking Ph.D and M.Sc dissertation under the able guidance of the scientists and using well equipped laboratories of the institute. Various workshops were organized during the period under report. Mention may be made of a workshop on Tuberculosis: Tribal Perspective which deliberated the issues and problem in tribal population and the possible solutions. It amasses academicians, researchers, experts and programme managers from various parts of the country and abroad. Institute's workshops and trainings on various aspects of malaria and sickle cell disease merit citation. It is worth to mention here that IJMR a leading bio-medical research journal in the country is publishing a special issue on tribal health with the support of the institute. Hindi fortnight (Pakhwada) was celebrated with enthusiasm by the staff. Institute also celebrated various national days of importance and its foundation day with great enthusiasm.

Finally, I would like to take this opportunity to acknowledge the unstinting support of Lt. General D. Raghunath our SAC chairman and other SAC members. I also place on record and thank Dr. V. M. Katoch, Former Secretary, DHR and Dr. Soumya Swaminathan, Secretary to the Government of India, Department of Health Research, Ministry of Health and Family Welfare and Director General, ICMR for their constant encouragement, support and guidance which has helped us to escalate this epitome of success.

Dr. Neeru Singh
Director

1. COMMUNICABLE DISEASES

TUBERCULOSIS

1.1 IEC INTERVENTION TO IMPROVE KAP RELATED TO TUBERCULOSIS AND ITS IMPACT ON RISK FACTORS AND TB DISEASE BURDEN AMONGST SAHARIA - A PRIMITIVE TRIBE OF MADHYA PRADESH

Principal Investigator:		**Dr. V.G. Rao**
Status	:	**Ongoing**
Funding	:	**ICMR**

Tuberculosis has been found to be a major public health problem amongst the Saharia – a primitive tribal community in Madhya Pradesh with a very high prevalence TB disease (1,518 per 100,000) . The result of endline KAP survey under RNTCP also showed the poor knowledge about TB disease, cause of transmission, treatment and accessibility, particularly among the tribal communities.The present study is planned to execute a need based IEC intervention in the area and to assess its impact on KAP and risk factors for pulmonary tuberculosis with the objective to generate baseline data on Saharia's knowledge, attitude, behaviour and practices (KAP) pertaining to TB and to identify the risk factors and to assess the impact of IEC activities on these factors.

This cross sectional study is being carried out in Saharia dominated study and control villages in Pohri Block of Shivpuri district of the state. It is being undertaken in three phases viz. baseline, intervention and endline survey. Baseline survey included TB disease survey, risk factor assessment and KAP. Based on the findings of baseline survey, a need based IEC program was executed in the study area. The endline survey comprises of assessing the impact of intervention in terms of KAP, risk factors and TB disease burden among them.

The findings of the baseline survey showed alarmingly high TB disease prevalence of 3003 per 100,000 among them. Tobacco smoking and alcohol consumption was found to be highly prevalent particularly among men (76.4% and 49.7% respectively). The findings also indicated poor knowledge about various aspects related to tuberculosis.

Based on the findings, IEC intervention was executed in the study villages during the intervention phase from Oct 2013 to Sept 2014 as depicted in figure 1.1.1. Major IEC activities were Group / Community meetings; Street plays / Nukkad natak in their local language; Rallies; School children involvement in awareness programmes; Wall paintings with slogans and messages in local language and Patient visits. The target groups for IEC activities are patients, & their families, village community including opinion leaders, school teachers & students and health providers including ASHA & Anganwadi workers.

In the endline survey initiated from Oct. 2014, a total of 941 individuals were examined for sputum. Of these, 148 (16.3%) individuals were positive by smear and 146 (16.0%) were culture positive. A total of 195 (21.5%) individuals were bacteriologically positive by smear and / or culture in the endline as compared to 293 (20.5%) individuals in the baseline (Table 1.1.1).

The study is in progress.

Table 1.1.1: Endline Sputum Results

Smear	Culture		Total
	Negative	Positive	
Negative	746	47	793
Positive	49	99	148
	795	146	941

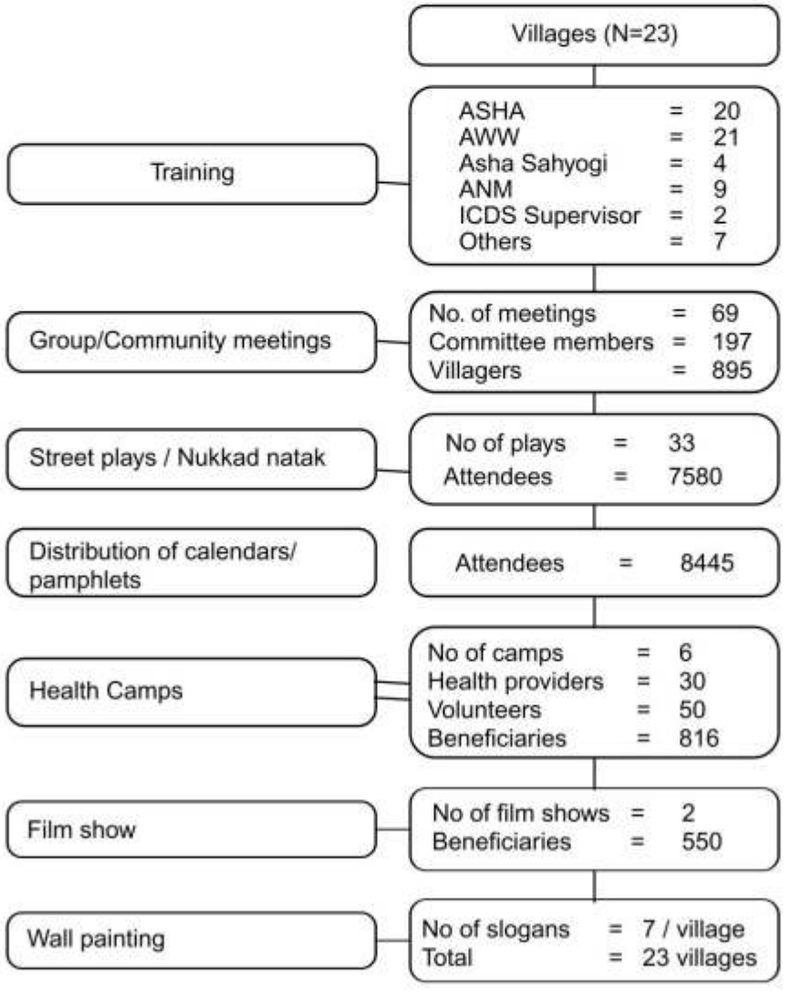


Figure 1.1.1: IEC activities conducted in the study villages

Group/Community meetings

Street Plays/ Nukkad natak

School children involvement

Rallies

IEC activities conducted in the study villages

1.2 MULTI-CENTRIC COHORT STUDY OF RECURRENCE OF TUBERCULOSIS AMONG NEWLY DIAGNOSED SPUTUM POSITIVE PULMONARY TUBERCULOSIS PATIENTS TREATED UNDER RNTCP

Principal Investigator	: Dr. V.G.Rao
Status	: Ongoing
Funding	: Central TB Division, Govt. of India

Although the cure rate reported under RNTCP is high, there is little information on the predictors of poor treatment outcomes and on the proportion of patients who develop recurrent TB after stopping treatment among those patients who have had a successful outcome at the end of treatment. A recurrence rate of 10-12% has been reported from

localized studies. With this in view, this multi-centric, prospective cohort study is being undertaken to estimate the recurrence of TB among newly diagnosed pulmonary TB patients who have successfully completed treatment and to distinguish if this recurrence is due to endogenous reactivation or re-infection and to assess risk factors for unfavourable outcomes to treatment.

This is a prospective, multi-centric cohort study and is being conducted by six institutes with NIRT, Chennai as the co-ordinating site. The estimated sample size is 1200 new smear positive pulmonary TB patients from six sites (200 each) treated under RNTCP. Two districts have been selected from each institute based on convenience (one rural and one urban district), and one Tuberculosis Unit (TU) from each district, that had enrolled at least 150 new smear positive pulmonary TB patients in the previous two quarters. New smear positive pulmonary TB patients who will be initiated on treatment during two consecutive quarters in the selected TUs form the study population. The inclusion criteria followed was smear positive pulmonary TB patients who have not received or have received less than one month of previous anti-TB treatmen, adult patients aged > 18 yrs, residing within the selected TU area, willing for study procedures, willing to give written informed consent.

Of the above enrolled cohort of patients, those declared "treatment success" (cured + treatment completed) form the study population to estimate recurrence of TB and are been followed up for a period of 12 months after completing treatment. The study procedures include structured interview, sputum examination for TB smear, culture, drug susceptibility tests (DST), genotyping and blood tests for diabetes mellitus and HIV infection.

After recruitment and training of staff in June 2014, project activities have been initiated from July 2014. The study is being conducted in two districts viz. Jabalpur (urban) and Mandla (rural). So far, 178 (88 in Jabalpur and 90 in Mandla) new smear positive pulmonary TB patients treated under RNTCP fulfilling the inclusion criteria have been enrolled as study participants and subjected to the structured interview, sputum examination for smear, culture & DST and blood tests for diabetes mellitus and HIV infection. The study is in progress.

VIRAL DISEASES

1.3 ESTABLISHMENT OF GRADE II VIROLOGY LABORATORY UNDER ICMR VIROLOGY NETWORK LABORATORY AT NIRTH, JABALPUR, MADHYA PRADESH

Principal Investigator	:	Dr. Pradip V Barde
Status	:	Ongoing
Funding	:	ICMR

The Viral Research Diagnostic Laboratory Network project of ICMR aims to monitor and provide reliable and timely diagnosis of viral infections especially emerging and re-emerging viral diseases of public health importance. The Grade II laboratory is providing molecular and serological diagnosis for 15 different viruses using 35 different tests. The objectives of the project are to establish serological (ELISA) and molecular (PCR, RT-PCR) diagnostic services for important arboviral diseases (Dengue, Chikungunya, Japanese encephalitis), Influenza viruses, Respiratory Syncytial virus, Hepatitis viruses, Measles, Rubella, Herpes Simplex virus, Herpes Zoster virus and Mumps. The laboratory also aims to attend the outbreaks of suspected viral origin in the region.

The biosafety level II compliance laboratory is functional since March 2012. The laboratory follows good lab practices and has all necessary equipments required for serological and molecular diagnosis. The samples are referred to the laboratory from different government health providing agencies such as tertiary care units *ie* Medical Colleges and District Hospitals, IDSP units and SVBDCP of Madhya Pradesh and Chattisgarh (CG). This year more than 8000 samples from the patients suspected of suffering from viral diseases have been tested. These samples were tested by the standard operating procedures and reagents and kits recommended by WHO, CDC, NIV and NVBDCP *etc.* The lab has excelled in both diagnostic services and research areas. Detail of work performed in the respective areas is stated below.

DENGUE

The IgM capture ELISA kit procured from NIV, recommended by NVBDCP is being used for diagnosis of dengue from suspected samples collected after 5th day of illness. ELISA for NS1 antigen detection and DENV-1-4 Real-Time RT-PCR assay are also being used for dengue diagnosis in suspected samples collected during acute phase of illness. The DENV-1-4 Real-Time RT-PCR Assay is intended for use in the identification of viral RNA of dengue virus serotypes 1, 2, 3 or 4 from serum or plasma collected from human patients with signs and symptoms consistent with dengue.

In this year, a total of 2657 samples were tested for dengue out of which 789 (29.69%) were positive. Maximum numbers of cases were diagnosed during the month of Oct, 2014. The month wise detail of tested and positive samples is represented in figure 1.3.1.

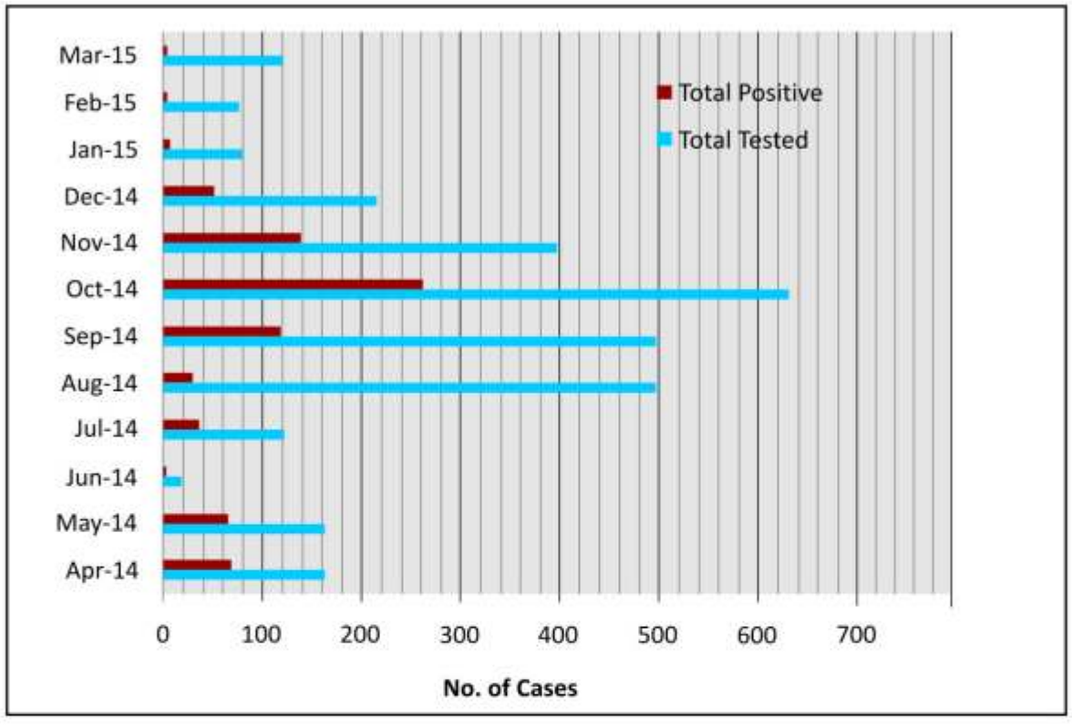


Figure 1.3.1: Monthwise distribution of no. of cases tested and found positive for degue

Dengue outbreak investigations

In the past, dengue mostly occurred in urban and semi-urban areas, but recently the outbreaks are also reported from rural areas from different parts of the MP and CG.

Dengue outbreak was investigated in Kanhargaon village of Narsighpur district during April-May, 2014. A total of 78 dengue suspected samples based on clinical symptoms were tested out of which 56 (71%) were found to be positive for dengue. Upon molecular studies, dengue virus serotype-3 was detected from samples collected in acute phase of illness.

During May, 2014 an outbreak in the villages of Mandla district was recorded where 80 dengue suspected samples were collected based on clinical symptoms. All samples were subjected to ELISA for Dengue IgM and/or real time RT-PCR out of which 59 (72%) were found to be positive.

High dengue positivity areas of state capital Bhopal were surveyed during October

and November, 2014. Entomological surveys were conducted and suggestions were given regarding vector control measures. Molecular studies conducted on the referred samples revealed that three serotypes [DEN 1,2 & 3] were circulating in the capital city of MP.

On request from state health authorities a rapid response team (RRT) investigated upsurge of febrile cases in villages of Shivpuri district during September & October, 2014. Health camp was organized and one hundred and eighteen samples were collected from dengue suspected cases. Houses were also surveyed for Mosquitoes (larvae and adults). All the suspected cases were examined by the clinician of the team. Most patients had complaints of high grade fever, frontal headache, body ache with rare symptoms of vomiting. All samples were subjected to ELISA for Dengue IgM and/or real time PCR and 50 (42%) were found to be positive. Age and gender wise distribution is represented in figure 1.3.2. Dengue virus 1 was detected in 5 samples by real time PCR. Deaths due to dengue were brought to the notice of investigating team.

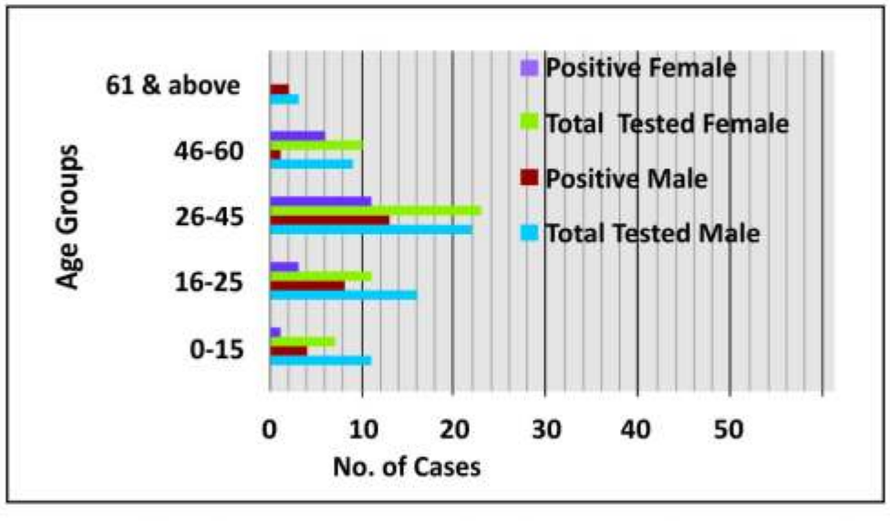


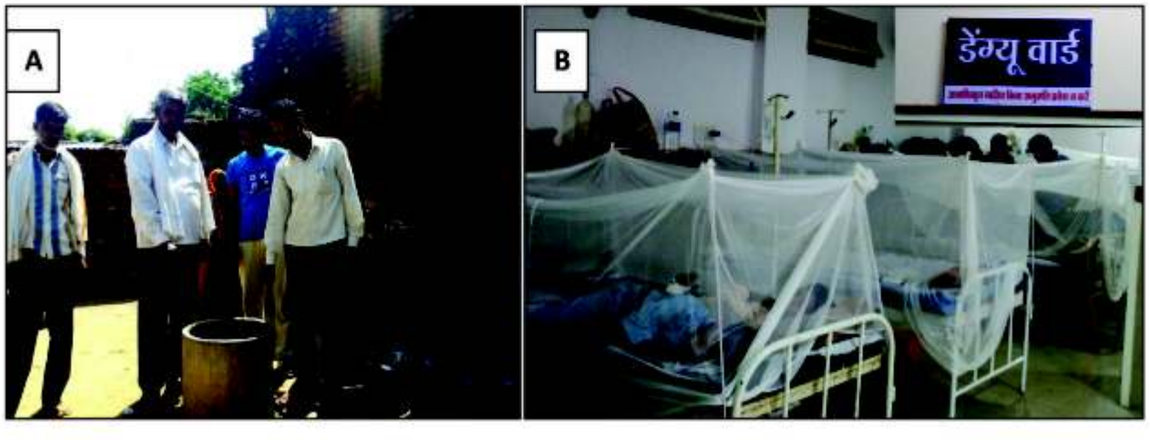
Figure 1.3.2: Age group wise distribution of no. of cases tested and found positive for dengue in villages of Shivpuri district in Nov. 2014

Of these 118 samples, 112 were subjected to IgG ELISA to establish if the dengue infection was new to the area (emerging/re-emerging). The IgG studies conducted on samples clearly indicated that dengue virus was new to the area and was an emerging infection. Apart from dengue samples were subjected to CHIK IgM ELISA to detect the chikungunya infection since chikungunya and dengue both are transmitted by the same vector, positivity for chikungunya (7/112) was also noted which indicates that CHIKV too was circulating in the area at low level during the period. However, chikungunya RT-PCR result, to establish the active circulation, was negative. In all our study on samples collected from the villages of Shivpuri district clearly demonstrate that the dengue virus infection is an emerging viral infection in the area; and secondly CHIKV is also circulating at low levels in the area.

The samples were also collected from the same areas of the same villages during the same period from fever cases suspected of malaria and were tested for the presence of malaria parasite. Out of 339 samples tested, 85 (25%) cases were found positive for malaria parasite and of these 85 cases 72 were positive for *P. vivax* and 13 for *P. falciparum* indicating that this was a mixed outbreak of dengue virus 1 and *P. Vivax* malaria. It will be worth to monitor the situation for these vector borne diseases in future.

Phylogenetic analysis of Dengue virus 3

A phylogenetic analysis of dengue virus serotype 3 (DENV-3) detected during 2013-14 from different districts of Madhya Pradesh was conducted. Primers of envelope-non-structural gene junction region were used in nRT-PCR for phylogenetic analysis. RT-PCR was carried out using Super Script III one step RT PCR kit with high fidelity platinum Taq (Invitrogen, CA, USA) and Gene Amp PCR system 9700 (Applied Biosystems). The amplicons (1057bp) were extracted from agarose gel using HiYield Gel PCR DNA Fragments Extraction Kit (Real Biotech Corp., Taipei County, Taiwan), as per the manufacturers protocol. Gel-purified products were used with ABI Big Dye Terminator Ready Reaction Kit Version 3.1 (PE Applied Biosystems Foster City, CA) for the sequencing PCR. Templates from sequencing PCR (n=10) were purified and sequenced on an ABI 3130 XL genetic analyzer. Obtained sequences (n=07) were assembled with sequences downloaded from NCBI database using BioEdit v7.2.5 (Tom Hall Ibis Biosciences, USA). The sequences were also analyzed for their homologies using Basic Local Alignment Search Tool (BLAST). Multiple alignment and phylogenetic analysis were performed using CLUSTAL W & MEGA 5 softwares. A neighbor-joining, p-distance tree was constructed with p-distance model. Reliability of nodes was assessed by bootstrap resembling with 1000 replicates. Findings of the study revealed that all isolates from different districts of Madhya Pradesh belongs to lineage III of genotype III (Fig. 1.3.3).



A : Sources of mosquito breading detected in outbreak area
B : Patient load during outbreak in ward at Shivpuri

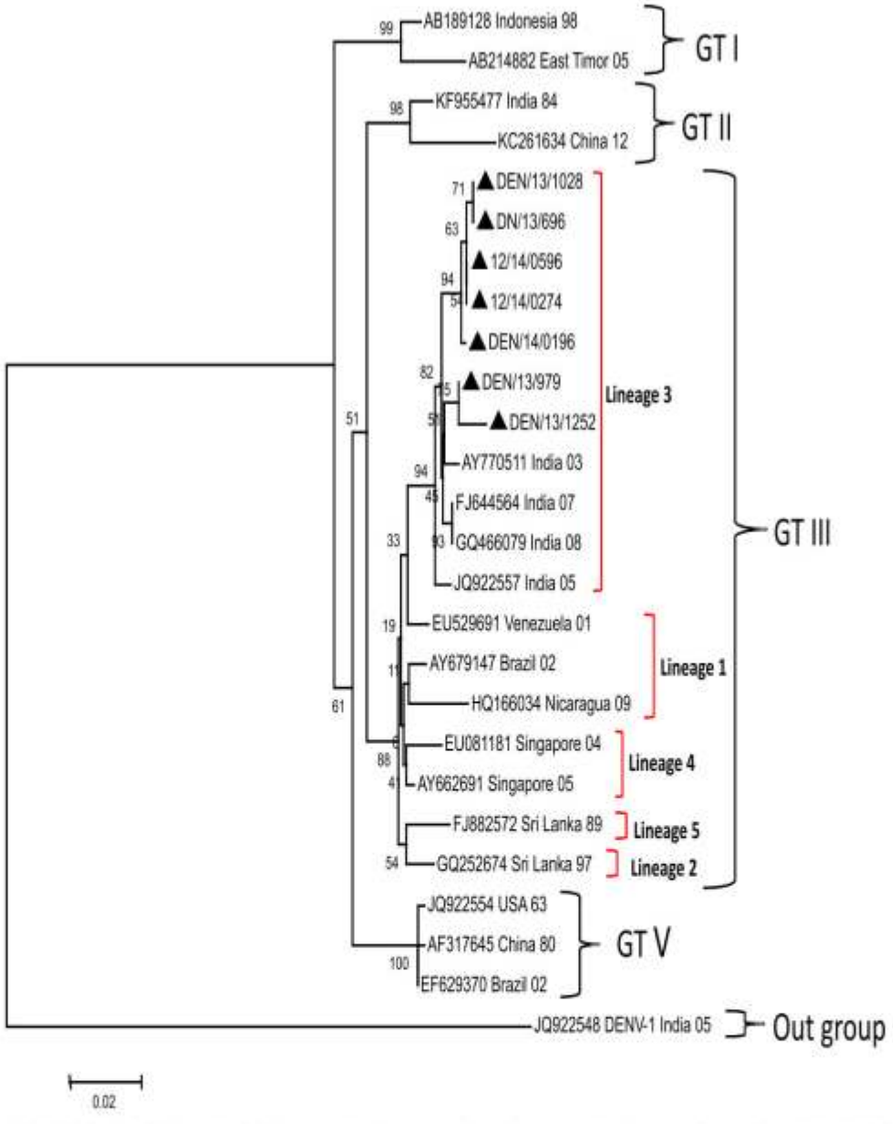


Figure.1.3.3: Neighbor-joining p-distance phylogenetic tree showing DENV-3 virus isolates from Madhya Pradesh. The bootstrap consensus tree was constructed on the basis of 504bp segment of C-prM and envelop gene. Seven isolates (▲) from different /same district of MP and nineteen other GB downloaded sequences were analyzed using MEGA 5 software. Tree was validated by 1000 bootstrap replication test.

CHIKUNGUNYA

The most effective way in diagnosing Chikungunya is to perform ELISA which uses antibodies and enzymes to detect the presence of chikungunya IgM. Reverse transcription polymerase chain reaction (RT-PCR) is also used to confirm the presence of virus by amplifying a range of Chikungunya RNA present in the blood sample collected during acute phase of illness.

This year 213 samples were tested for chikungunya out of which only 13(6.25%) were positive by ELISA. However, in these cases none was detected positive by RT-PCR.

INFLUENZA AND RESPIRATORY SYNCYTIAL VIRUS

Diagnosis of Influenza A H1N1pdm09 (H1N1pdm09) and other influenza viruses was upkept for state health services. India saw an upsurge of Influenza A H1N1pdm09 (swine flu) in 2015 which remained active past Mar, 2015. Such outbreak would usually subside around end of February as temperatures warm, but upsurge of new cases and deaths showed an increasing trend. In this challenging situation, diagnostic facility of VRDL proved to be instrumental in providing prompt and accurate diagnosis of H1N1pdm09. The Real time RT-PCR assay was used for detection of H1N1pdm09.

A total of 3575 cases were referred for the diagnosis of H1N1pdm09 out of which 1568 (43.86%) were positive. Maximum positivity was found in the month of February followed by March (Fig. 1.3.4). Week wise distribution of number of tested and positive samples for the year 2015 (Jan to 1st week of Apr) indicates protuberant increase in the number of referred samples for diagnosis of H1N1pdm09 by the 5th week which also marks the start of February month, unexpectedly this spike lasted till the 12th week and then decreased gradually (Fig. 1.3.4). Positivity remained high and consistent approximately 50% from 5th to 9th week and then decreased to 22% by the 12th week.

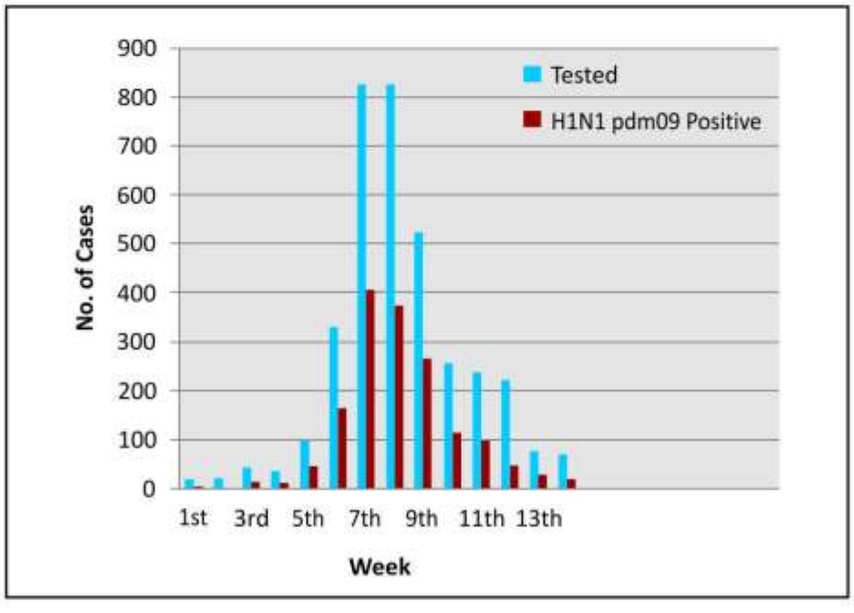


Figure 1.3.4: Weekwise distribution of tested and positive samples from Jan, 2015 to the start of Apr, 2015.

During the analysis of our data, positivity was found in most of the districts of MP. Indore, Bhopal, Jabalpur, Dewas and Ujjain were among the worst affected districts of the states as highlighted in figure 1.3.5. All the age groups were affected and primarily younger and older people were afftected more. Age of patients varied from one month to 90 years and more females were affected than males. Cough and sore throat were the most common symptoms alongwith fever and difficulty in breathing as denoted from the clinical data of referred cases.

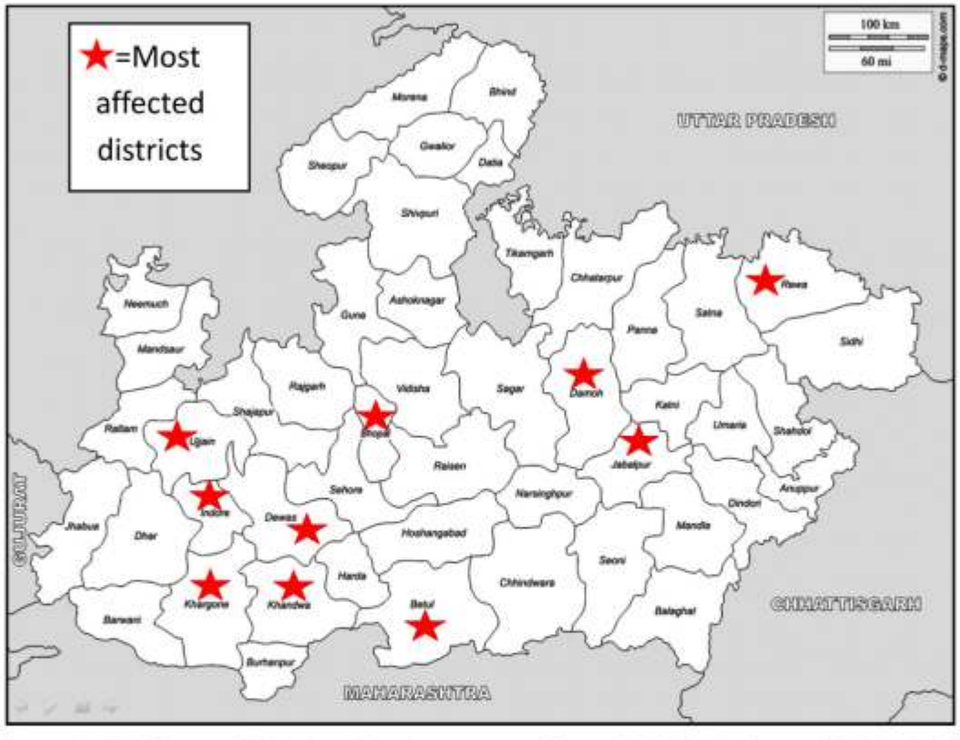


Figure 1.3.5: Map of MP showing the most affected districts from H1N1pdm09.

For Influenza like illness (ILI) cases Respiratory Syncytial Virus (RSV) was screened using RT-PCR. A total of 17 cases were found positive out of 203 tested. Most of the patients were children and both RSV A & RSV B were detected.

Molecular characterization of HA gene of H1N1pdm09 strain collected during the year 2015

VRDL continued its exercise to identify the genetic lineage and characterize molecular changes in strains of H1N1pdm09 from central India. Seven positive samples having high viral load, collected during Jan-Mar, 2015, were targeted for the amplification of hemagglutinin (HA) gene using WHO suggested primer sets by conventional RT-PCR. Big-dye Terminator kit was used for the sequencing of amplified products. Sequence alignment and phylogenetic analysis of obtained sequences was done with the help of Influenza division of NIV Pune using MEGA software (V.5.05).

In globally circulating H1N1pdm09 viruses seven discrete clades have been revealed by Bayesian Markov Chain Monte Carlo (MCMC) with characteristic amino acid change in different genes. Phylogenetic tree was constructed using neighbor-joining and Kimura distance correction based on a concatenation of 1701 nucleotides in total length. In phylogenetic tree the obtained sequences were clustered with 6B isolates. Changes in HA gene at position P91S (P100S), T200A (T214A), I323V (I338V), and H295Q (H310Q) indicates that they do not belong to clade-1.

As noticed in previous year (2013-14) characteristic amino acid change S206T (S220T) in sequences clustered them into 6B (Fig. 1.3.6). Further in-depth analysis of HA gene is in progress.

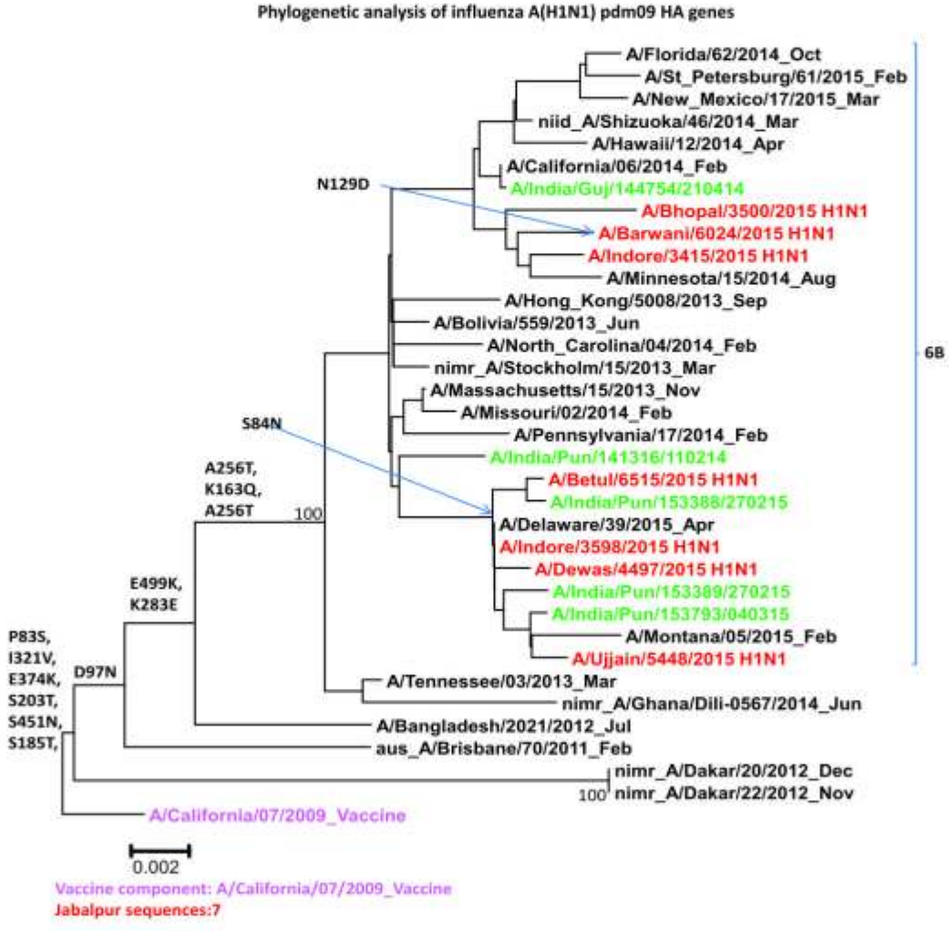


Figure 1.3.6: Phylogenetic tree of concatenated 1701 nucleotides of HA gene. All the samples of Madhya Pradesh (Marked in red) collected during 2015 belongs to 6B.

HEPATITIS

Diagnosis of different types of viral hepatitis is based on symptoms and physical findings as well as blood tests for liver enzymes, viral antibodies, and viral genetic materials. Serological tests (Ab ELISA, Ag ELISA) provide the foundation for diagnosis of hepatitis infections whereas molecular assays (PCR, RT-PCR) are invaluable tools for the management of chronic viral hepatitis. Both serological and molecular based approaches are being used at VRDL for the diagnosis of Hepatitis A, B, C and E.

A total of 1786 samples were screened for different viral hepatitis this year. Maximum number of samples 756 (42%) were tested for HEP B Virus surface Ag (HBsAg) followed by HEV (HEP E Virus). Overall positivity for different hepatitis infections was found to be 18.42% (329 cases). Maximum positivity 38% was for HEV followed by HBsAg (Fig. 1.3.8).

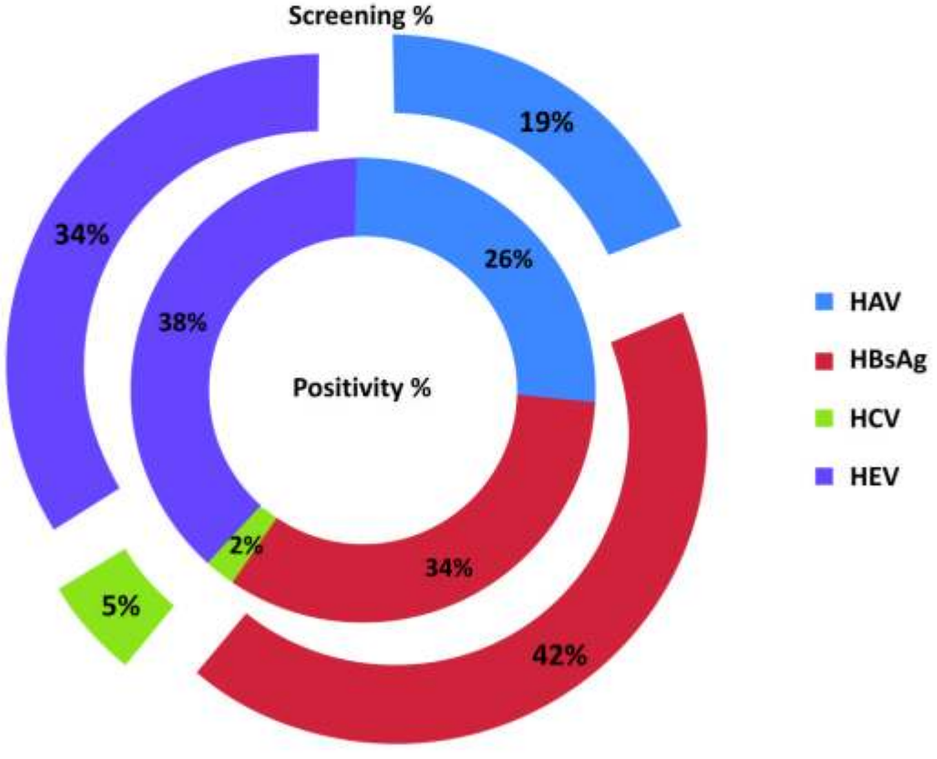


Figure 1.3.8: Percentage of cases screened and percentage of cases found positive for different hepatitis viral infections

Seven cases were positive for HCV (HEP C Virus) out of tested 92 cases. For HAV (HEP A Virus) out of 334 tested, 86 samples were found to be positive. Affirmative cases were 126 out of 604 tested for HEV. HBsAg screening of 756 cases revealed 110 positive samples (Fig. 1.3.9).

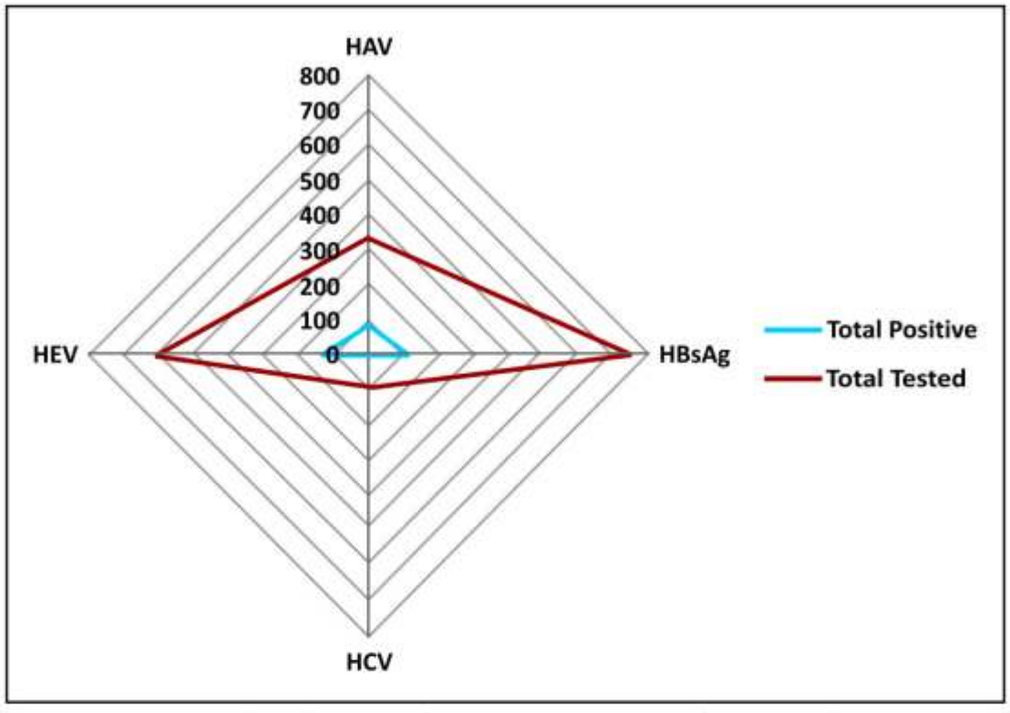


Figure 1.3.9: Number of cases screened and found positive for different hepatitis viral infections

Identification of circulating genotype of HAV

The viral RNA was isolated from the ELISA positive serum samples and subjected to nRT-PCR for identification of circulating genotypes, using specific primers of conserved VP1/2A junction region. It is best suited region for genotyping and phylogenetic studies; it defines known different seven genotypes of HAV. The nested PCR products were extracted from the gel and sequenced directly using Big Dye Terminator Cycle Sequencing kit (Applied Biosystems, CA). Resulting sequences were analyzed for their homologies using BLAST. The results of nRT-PCR were confirmed by sequencing and 17 sequences (225 bp) were submitted to GenBank (GenBank accession numbers KP317793 – KP317809).

These sequences showed ≥ 97% homology with Indian HAV isolates having a GenBank accession number FJ360734 at nucleotide level. The analysis showed that the virus belonged to genotype IIIA. Out of 17 sequences 8 sequences (KP31793, KP31796, KP31797, KP31798, KP31803, KP31807, KP31808, KP31809) showed difference at amino acid level. Three sequences (KP31797, KP31807, KP31808) out of these 8 were different at position no. 820 (Serine is replaced by Leucine) and remaining 5 sequences (KP31793, KP31796, KP31798, KP31803, KP31809) were different at position no. 802 (Aspartate is replaced by Glutamate). KP31796 showed difference at position no. 805 (Leucine replaced by Methionine) as well.

Identification of circulating genotype of HEV

Randomly picked HEV ELISA positive samples were tested by nRT-PCR for phylogenetic analysis using RNAP region primers. Nested PCR products were subjected to sequencing and resulting sequences (n=360bp) were submitted to GenBank after curation. Sequencing of 5 PCR products (GenBank Acc No. KT071749 - KT071753) confirmed the presence of HEV. These 5 sequences belonged to genotype 1, sub genotype 1a which is predominant type circulating in India. Four sequences (KT071749, KT071750, KT071751, KT071752) out of these 5 showed 99% similarity at nucleotide level and 100% at AA level to the virus HEV detected in Nepal in the year 2014 (GenBank Acc No. KM921812). Remaining one sequence (KT071753) displayed 99% similarity at both nucleotide and AA level. The change in the sequence KT071753 was noted in ORF 1 region at position number 1455 (Methionine is replaced by Valine).

HERPES SIMPLES VIRUS (HSV) & HERPES ZOSTER VIRUS (HZV)

ELISA and PCR based diagnosis are being provided for HSV (Type I & II) and HZV. Herpes zoster is sometimes confused with herpes simplex and can be more difficult to diagnose in people with compromised immune systems. Although these infections are very common, the majority of them remain underdiagnosed because they are asymptomatic or unrecognized. A total of 239 and 13 samples were tested for HSV and HZV respectively. Only 5 (2.09%) samples were positive for HSV and 7 (53.84%) were detected positive for HZV.

MEASLES, MUMPS AND RUBELLA (MMR)

Measles is highly infectious and the most serious of the three diseases whereas mumps is less contagious. Rubella is also a mild disease however it can result in serious consequences for children and pregnant women. Laboratory diagnostic methods include antibody (IgM and IgG) ELISA and reverse transcription polymerase chain reaction (RT-PCR). These methods have been adapted by VRDL for diagnosis of these infectious diseases. A total of 23 and 30 cases were referred for measles and rubella respectively. Four cases were positive for measles and 2 were positive for rubella. For mumps, only 2 samples were tested which were found to be negative.

Since rubella infection can be devastating for newborns, if it occurs to mother in the first trimester of pregnancy it may lead to congenital rubella syndrome (CRS), a study was undertaken by VRDL to find out the susceptibility of rubella among pregnant women attending antenatal clinic in a tertiary care hospital, Jabalpur during 2013-14. In this study, 369 antenatal cases were tested for the presence of IgG antibody for rubella and its titer. A total of 141 (38.2%) women were found susceptible to rubella. Univariate and multivariate logistic regression technique with 95% confidence interval using SPSS to study the association of different possible explanatory variables with unprotected against rubella revealed no significant difference in rubella susceptibility among different socioeconomic

classes, age, and gravidity. Rubella susceptible cases were followed to observe birth outcome. Five out of 60 (8.3%) rubella susceptible cases reported adverse obstetric outcome, three had intra uterine deaths (IUD), and two had preterm deliveries. In conclusion, a large proportion of pregnant women were found rubella susceptible, posing immense threat of CRS to their newborns. Robust programme for rubella immunization targeting teenage girls is therefore needed to avoid CRS.

JAPANESE ENCEPHALITIS (JE)

Japanese encephalitis (JE) being a patchy disease is the most important cause of viral encephalitis in Asia. At VRDL, diagnosis of JE is accomplished by testing of serum or cerebrospinal fluid (CSF) to detect virus-specific IgM antibodies using ELISA kit supplied by NIV, Pune. This reporting year a total of 10 cases were tested however none was affirmative of JE infection.

1.4 NATIONAL HOSPITAL BASED ROTAVIRUS SURVEILLANCE NETWORK

Principal Investigator	:	Dr. Jyothi Bhat
Status	:	Ongoing
Funding	:	ICMR Multicentric Study

Current nationally representative data on rotavirus burden and strains in India are needed to understand the potential health benefits of rotavirus vaccination. Hence a multicentric study was initiated with the major objective of this to develop a national hospital-based multi-site surveillance system for rotavirus disease in India. Study aims to find out the prevalence of Rotavirus in hospitalized children under five years and also to know the circulating genotypes in the area. Standardized protocols are used to determine epidemiologic and virological features of rotavirus and rotavirus disease burden.

For this current study the samples collections sites are Netaji Subhash Chandra Bose Medical College, Jabalpur and Kamla Nehru Medical College, Bhopal. Stool samples were processed for ELISA for detection of group A rotavirus as per the kit protocol (Premier®Rotaclone®). RNA was isolated using standard TRIZOL method and QiagenQIAamp Viral RNA kit. cDNAs were prepared from the isolated RNA using standard procedures and group specific VP6 gene based RT- PCR was done for molecular diagnostic. For further G and P typing, the respective VP7 and VP4 based multiplex PCR were done with reported primers. For additional molecular characterization, the group

specific VP6 gene was amplified. Sequencing was done using the Big dye terminator v3.1 Cycle Sequencing Kit (Applied BiosystemsInc, CA, USA) on an automated sequencer (Applied Biosystems, 3130 Genetic Analyzer, USA). The retrieved sequence of VP6 RVA gene was typed using web based automated RotaC classification software. The bootstrap re-sampling analysis was estimated with 2500 replications for statistical significance of the relationship with sequenced RVA VP6 with submitted genes in NCBI gene database by using MEGA 5.0.5 offline software.

The sample enrolment was started in August 2014. Till March 2015, total 109 & 119 children were enrolled in the study at Jabalpur & Bhopal respectively. Of these 32 samples were positive for group A rotavirus at Jabalpur and 24 samples at Bhopal site, confirmed in ELISA.

The confirmed ELISA positive samples were used for VP6, VP4 and VP7 amplification by reported primers for P and G typing (Fig. 1.4.1 & 2)

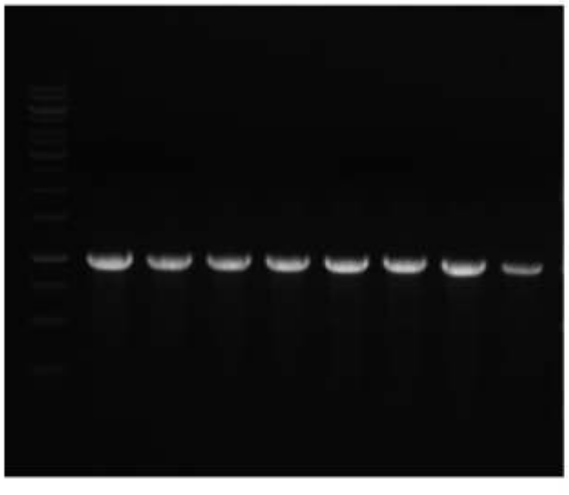


Figure 1.4.1: PCR amplification of VP7 gene of human RVA with 981 bp amplicons.

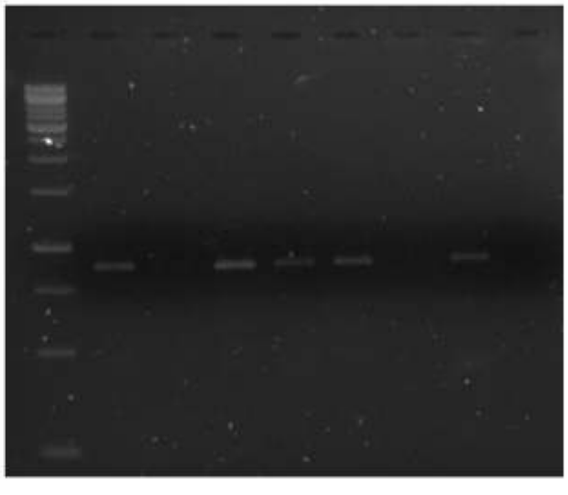


Figure.1.4.2: PCR amplification of VP4 gene of human RVA with 863 bp amplicons

Of the 56 positive samples, 30 samples were processed for G and P typing for VP7 and VP4 (Fig 1.4.3 & 4) The results showed that, G1 (26.67%) was the most predominant species followed by G12(20%) and G9 (16.67%).Combined G types were also seen. Few strains (6.67%) were not typed through multiplex G-typing PCR (Table No. 1.4.1). In P types P6(46.67%) was the most prevalent type, followed by P4 (16.67%). P4P6 was the most prevalent type followed by P6P10 (6.67%) and P4P6P10 (6.67%). (Table No. 1.4.2).

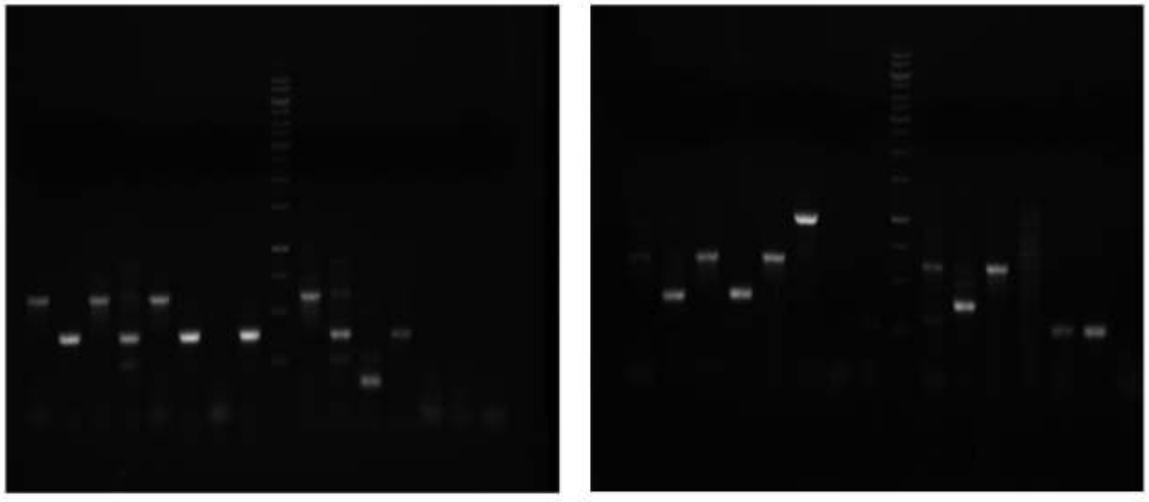


Figure 1.4.3: PCR based G genotyping shown different G genotypes of VP7

Table 1.4.1: Showing the G-typing percentage in characterized samples

G -Typing	No.	Percentage
G1	8	26.67
G3	1	3.33
G9	5	16.67
G12	6	20
G1G3	1	3.33
G1G9	2	6.67
G4G12	1	3.33
G9G12	4	13.33
NT	2	6.67
Total	30	100

Table 1.4.2: Showing the P-typing percentage in characterized samples

P-Typing	No.	Percentage
P3	1	3.33
P4	5	16.67
P6	14	46.67
P8	1	3.33
P4P6	5	16.67
P6P10	2	6.67
P4P6P10	2	6.67
Total	30	100

The sequenced VP6 gene was found as I1 typed VP6 by using web based automated RotaC classification software. The retrieved sequence of VP6 gene was shown the 99% similarity with human isolates from Italy AV21 and AV28 and Russia Nov12-N4489 and Nov11-N2797. With the Indian isolates, it shows 93.7 to 79.5 % similarity at nucleic acid level (Fig. 1.4.4).

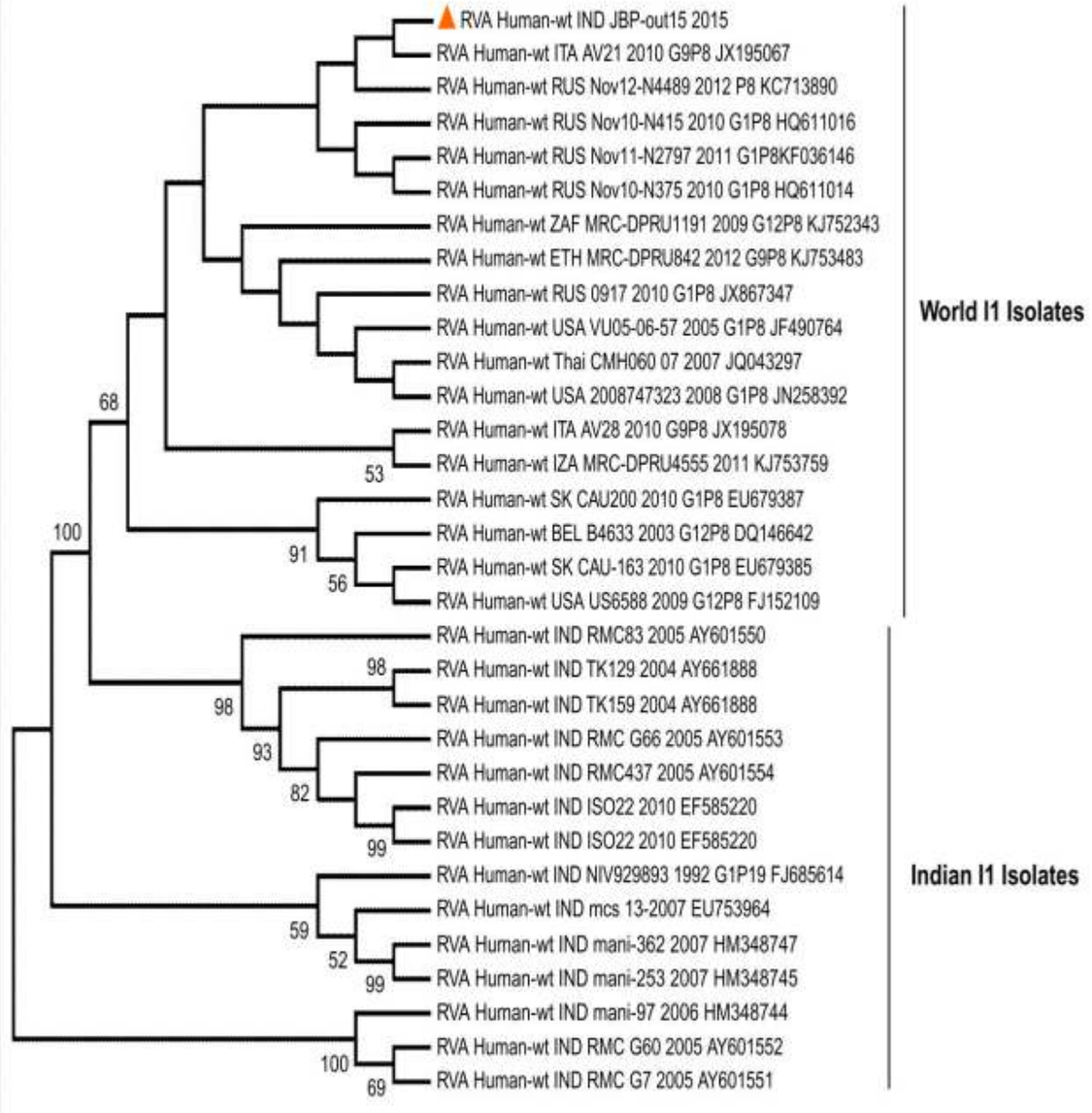


Figure 1.4.4: Phylogenetic tree depicting relationship of JBP-out15 with other Indian and rest of the world RVA isolated at group specific VP6 gene.

2. VECTOR BORNE DISEASES

MALARIA

2.1 CLINICAL AND MOLECULAR SURVEILLANCE FOR MONITORING THE EMERGING RESISTANCE TO ANTIMALARIAL DRUGS IN *PLASMODIUM FALCIPARUM* IN CENTRAL INDIA

Principal Investigator	: Dr. Neeru Singh
Status	: Completed
Funding	: ICMR (Tribal Sub Plan)

The study was undertaken for monitoring the clinical and molecular resistance to antimalarial drugs (artemisinin-based combination therapy:ACT) in uncomplicated *Plasmodium falciparum* malaria in Balaghat district of Madhya Pradesh (Fig. 2.1.1). Therapeutic efficacy test was carried out with ACT orally over a three-day period. Genomic DNA of parasite was used to amplify the drug resistance genes (*pfdhfr* and *pfdhps*) using the respective gene specific primers.

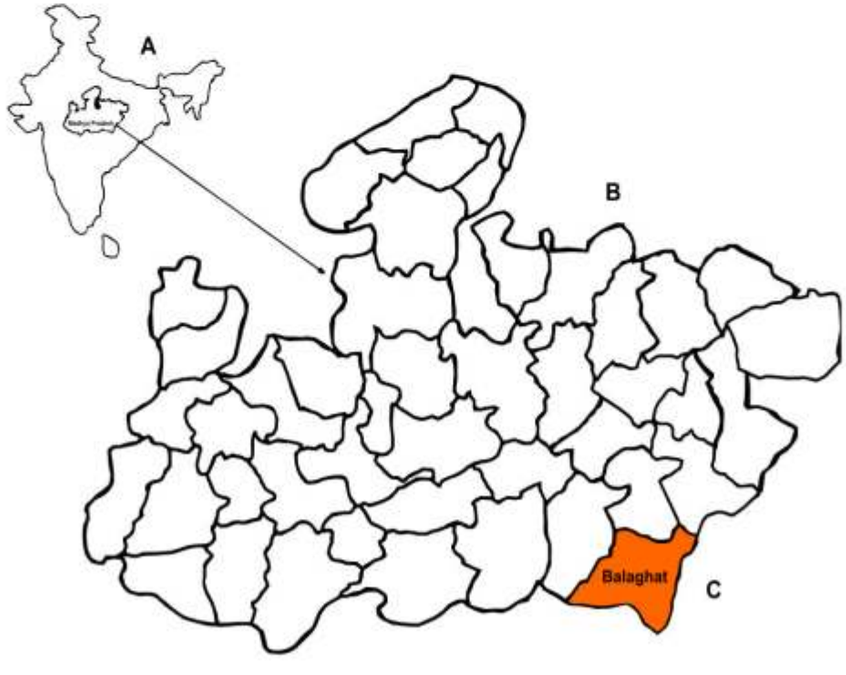


Figure 2.1.1: A: Map of India showing Madhya Pradesh; B: Map of Madhya Pradesh showing Balaghat District; C: Study area

Three hundred fifty five patients were screened in Balaghat district, out of which 137 were positive for malaria, 113 *P. falciparum* (of which only 86 enrolled), 8 *P. vivax* and 16 showed mixed infections of *P. falciparum* and *P. vivax* (Figure 2.1.2).

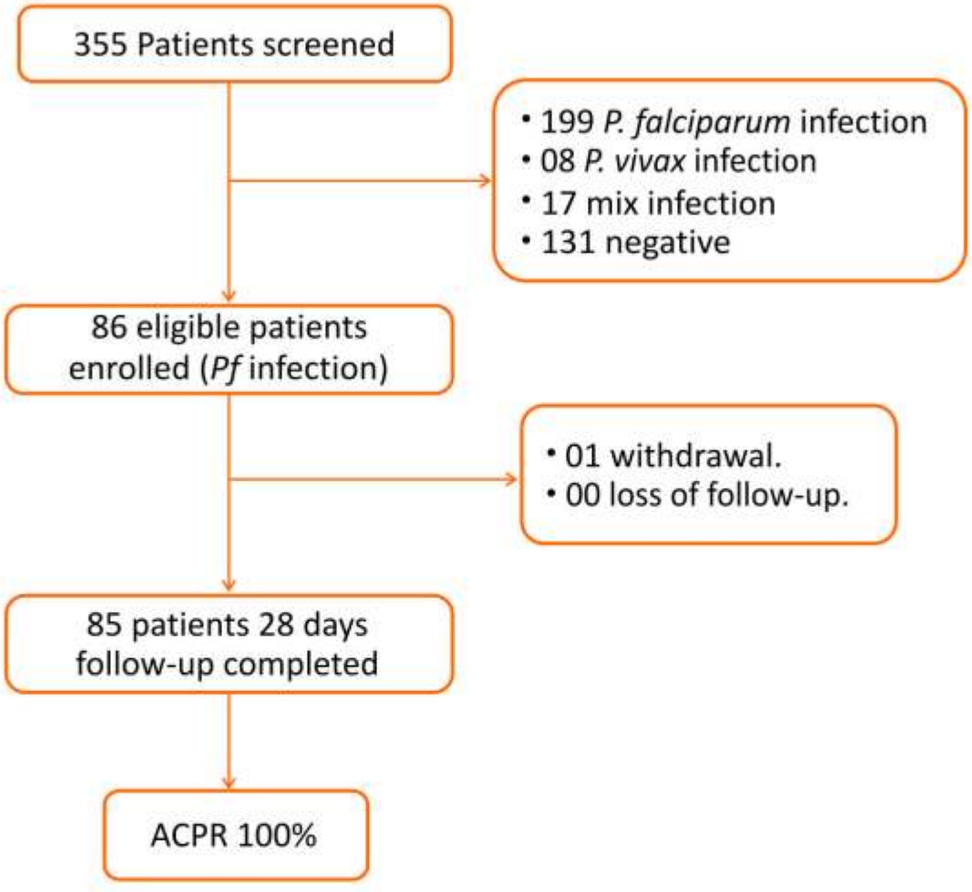


Figure 2.1.2: Showing patient screening, enrollment and follow-up

The therapeutic efficacy outcome was determined for 85 patients as one patient did not complete the study. Over all therapeutic efficacy showed 100% adequate clinical and parasitological response. Out of 86 cases, 80 were analyzed for *dhfr* mutations at five codons (16, 51, 59, 108, and 164). Seventy one percent parasite population were harboring the mutations while only 27.5% were wild type. Majority of the parasite population were having double mutations (44%) in *pfdhfr* $A_{16}N_{51}\mathbf{R_{59}N_{108}}I_{164}$ followed by single mutant *pfdhfr* allele $A_{16}N_{51}C_{59}\mathbf{N_{108}}I_{164}$ (26%) and 2.5 % was triple mutant *pfdhfr* allele $A_{16}N_{51}\mathbf{C_{59}S_{108}P_{118}}$.(Fig. 2.1.3 & 4) In *Pfdhps* gene, wild type was prevalent (70%) followed by single mutant (21%) and remaining were double mutant (Fig. 2.1.5 & 6).

Figure 2.1.3: Gel picture showing amplification of *Pfdhfr* gene. (Lane M= 100 bp DNA ladder, lane NC= Negative Control, lane PC= Positive Control and lane 1 to 9 is the sample showing PCR amplification)

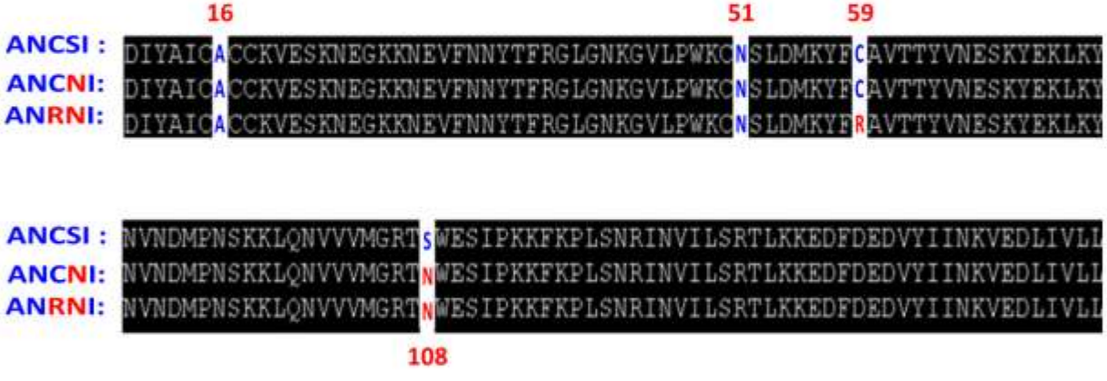


Figure 2.1.4: Aminoacid alignment of *Pfdhfr* genotypes showing the mutation at the codon 16, 51, 59 and 108 ANCSI is wild type, ANCNI and ANRNI mutant allels

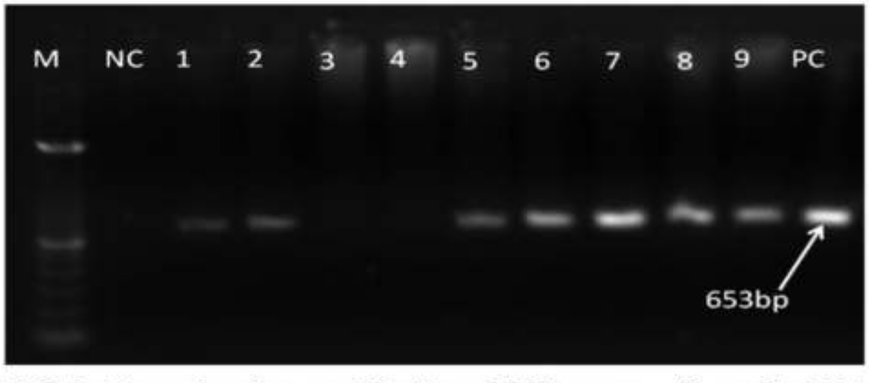


Figure 2.1.5: Gel picture showing amplification of *Pfdhps* gene. (Lane M= 100 bp DNA ladder, lane NC= Negative Control, lane PC= Positive Control and lane 1 to 9 is the sample showing PCR amplification)

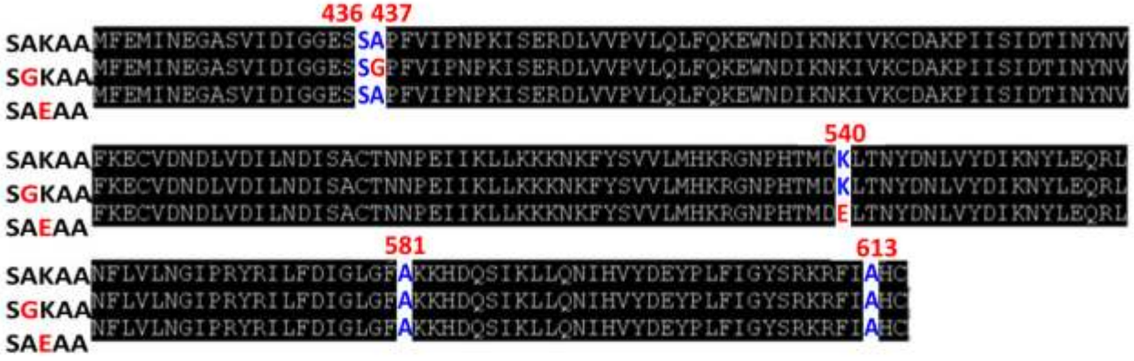


Figure 2.1.6: Aminoacid alignment of *Pfdhps* genotypes showing the mutation at the codon 436, 437, 540, 581 and 613. SAKAA is wild type allele and SGKAA and SAEAA is mutant allele

2.2 EFFICACY AND SAFETY OF ARTEMETHER-LUMEFANTRINE (AL) COMBINATION THERAPY FOR THE TREATMENT OF UNCOMPLICATED *PLASMODIUM FALCIPARUM* MALARIA IN 4 SITES IN INDIA: ANUPPUR DISTRICT, MADHYA PRADESH, JHABUA DISTRICT, MADHYA PRADESH, BASTAR DISTRICT, CHHATTISGARH AND SIMDEGA DISTRICT, JHARKHAND

Principal Investigator	:	Dr. Neeru Singh
		Dr. M.M. Shukla
Status	:	Ongoing
Funding	:	World Health Orginization

Emerging drug resistance is a big challenge for malaria control and treatment policies in tropical and sub tropical countries. First line of treatment of uncomplicated malaria in India has been changed in the year 2010 (NVBDCP) from chloroquine to Artesunate (AS) and Sulfadoxine-Pyrimethamine (SP) combination. It is important to note that due to resistance in SP, artemether-lumefantrine (AL) combination therapy has replaced AS+SP in north eastern state of India. A study is being carried out to assess the efficacy and safety of the combination artemether-lumefantrine for the treatment of uncomplicated *P. falciparum* malaria infections in three states (Fig 2.2.1).

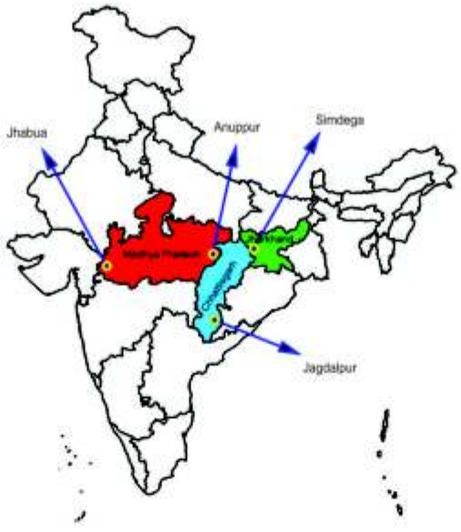
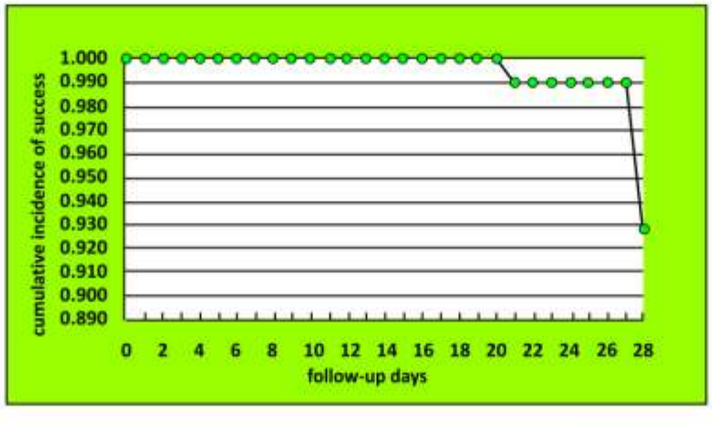


Figure 2.2.1: Map of India showing the studied sites in the three states

A total of 3581 patients were screened for malaria parasite of which 402 mono *P. falciparum* eligible patients were enrolled in the study after taking written informed consent. Out of 402 enrolled subjects, 336 patients completed the study follow-up and 42 (10%) did not complete treatment, 24 (6%) were loss to follow-up due to various reasons. Out of remaining 336 subjects, 3 (1%) were recorded as Late Clinical Failure (LCF) (1 on day 21 and 2 on day 28), 4 (1%) Late Parasitological Failure (LPF) (all on day 28) and remaining 329 (98%) were Adequate Clinical & Parasitological Response (ACPR).

The PCR corrected end point finding confirmed one LCF (Pf recrudescence), 2 LPF (1 Pf recrudescence and 1 mixed with Pf recrudescence) and 329 ACPR (Fig 2.2.2). Rest two LCF and one LPF were confirmed as Pf re-infection by PCR (Fig. 2.2. 3) and one LPF was shown as PCR negative (Fig. 2.2.4 & 5).

(A) Without PCR correction



(B) With PCR Correction

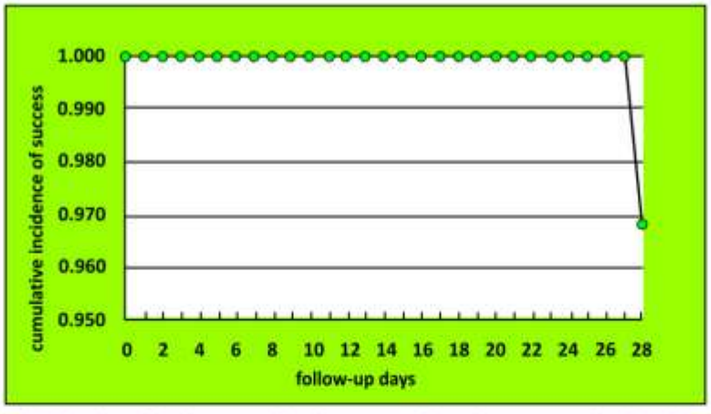


Figure 2.2.2: Kaplan-Meier survival curve showing cumulative incidence of success with and without PCR correction at study site Bastar (CG)

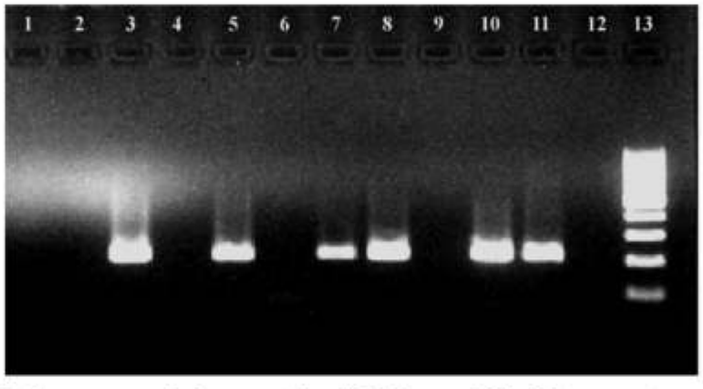


Figure 2.2.3: Polymerase chain reaction (PCR) amplified fragments of *Plasmodium falciparum* (205bp). (Isolates DNA from the lane (4-12) and lane 13 with 100 bp molecular marker; lane 2 is negative control and lane 3 is positive control)

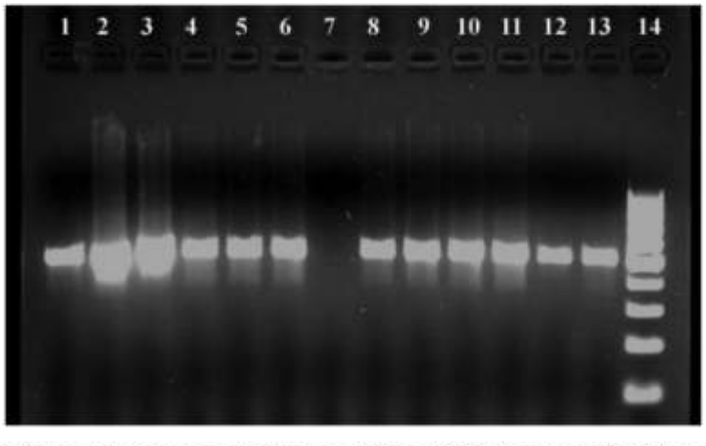


Figure 2.2.4: Polymerase chain reaction (PCR) amplified fragments of *P. falciparum* merozoites surface protein 1

(Isolates DNA from the lane (1- 6 and 9-13) and lane 14 with 100 bp molecular marker; lane 7 is negative control and lane 8 is positive control).

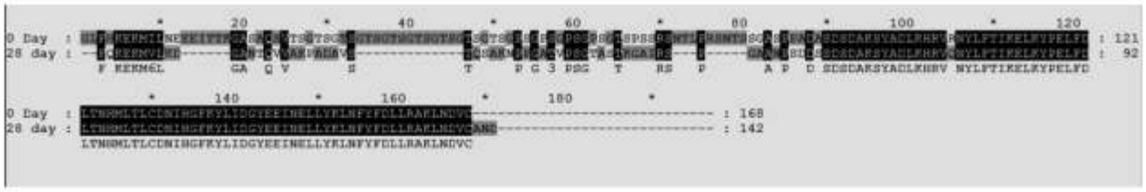


Figure 2.2.5: Amino acid alignment of merozoite surface protein 1 from the samples of a patient (0 day and 28 day) showing different genotype of MSP1 gene

2.3 STUDIES ON HRP2 AND HRP3 EXPRESSION IN *PLASMODIUM FALCIPARUM* PARASITES FROM ENDEMIC STATES OF INDIA: A PROSPECTIVE EVALUATION

Principal Investigator	:	Dr. Neeru Singh
Status	:	Ongoing
Funding	:	ICMR (Translational Research)

Most of the commercially available malaria RDTs employ monoclonal antibodies that recognize histidine-rich protein 2 (PfHRP2), which is a *P. falciparum*-specific protein. Some monoclonal antibodies found in PfHRP2-based RDTs can cross-react with the protein's structural homolog, histidine-rich protein 3 (PfHRP3). Recently, pfhrp2 gene deletions were detected in 30–40% of *P. falciparum* parasite isolates collected from Peru; these deletions resulted in false-negative malaria RDT results when PfHRP2-based diagnostic tests were used.

The study was undertaken to evaluate the pfhrp2 and pfhrp3 gene variations / gene deletions in *P. falciparum* samples from malaria-endemic states of India. Study was carried out in eight states (North East (Tripura), Orissa, Madhya Pradesh, Chhattisgarh, Jharkhand, Maharashtra, Gujarat and Rajasthan) at two PHC (one high transmission and one low transmission) from each state (Fig. 2.3.1). Screening of malaria parasite was done by microscopy and mono infection of *P. falciparum* positive samples were collected. Genomic DNA of the parasite was extracted from blood and *P. falciparum* infection was confirmed by species specific nested PCR amplification of the 18S ribosomal RNA gene. Nested PCR amplifications of *pfhrp2, pfhrp3* and their respective flanking genes were

performed. The laboratory isolate Dd2 was used as a negative control for all pfhrp2/flanking genes experiments because this isolate lacks all three genes. Similarly, parasite isolate HB3 was used as the negative control for all pfhrp3/neighboring genes experiments because the isolate has deleted all three genes.

A total 23125 patients were screened from all the eight states by microscopy. Out of 23125, 2709 (11.7%) were found positive for malaria parasite with 74% were *P. falciparum*. A total 1521 mono *P. falciparum* cases were enrolled for the study. All these samples were tested by RDT and PCR.

Figure 2.3.1: Map of India showing the 16 study sites from 8 malaria endemic states

All 1521 microscopically confirmed mono *P. falciparum* samples were tested by molecular methods, of which 83% were confirmed as mono Pf infections. Mixed infections of Pf + Pv were present in 16%, Pf + Pm in 1%, (n=19) Pf + Po in 0.4%, (n=6) and Pf + Pm + Po in 0.1% (n=1) subjects respectively (Table 2.3.1). Mixed infections with Pf + Pm were found in all 8 states and Pf + Po were found only in 4 states with both Po *curtisi* and Po *wallikeri* (Fig. 2.3.2). A total 3.2% RDT found Negative and these samples were analyzed for *pfhrp2, pfhrp3* gene deletion (Fig. 2.3.3). Overall 2.3% cases were *pfhrp2* negative, 1.8% *pfhrp3* and 1.6% having both *pfhrp2* and *pfhrp3* gene deletion.

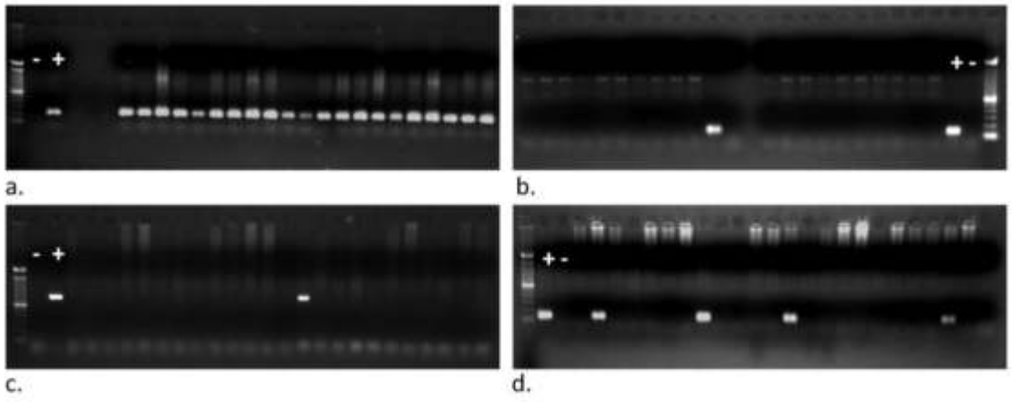


Figure 2.3.2: 2a Showing Nested PCR amplification for *P. falciparum* (205bp), after marker 2nd well showing negative (-) control and 3rd well showing positive control (+); 2b: showing *P. malariae* (144) with positive (24th well) and negative control (25th well); 2c: showing *P. ovale* (800bp) with negative (2nd well) and positive (3rd well) control; 2d: showing *P. vivax* (120bp) with positive (2nd well) and negative (3rd well) controls

Table 2.3.1 : Showing species wise mixed infections of *P. falciparum*, *P. vivax*, *P. malariae* and *P. ovale* as identified by Polymerase Chain Reaction

	Mixed infections			
District (State)	**Pf**	**Pf+Pv**	**Pf+Pm**	**Pf+Po**
Koraput (OD)	188	35	4	2
Rayagada (OD)	31	5	2	0
Simdega (JH)	82	41	0	2
Simdega (JH)*	76	14	0	0
Jagdalpur (CG)	178	23	2	1
Baikunthpur (CG)	10	0	0	0
Jhabua (MP)	92	29	3	1
Anuppur (MP)	82	18	1	0
Gadchiroli (MH)	108	6	0	0
Gondia (MH)	103	15	2	0
Udaipur (RJ)	112	26	2	0
Dahod (GJ)	77	8	2	0
Valsad (GJ)	10	0	0	0
South Tripura (TR)	41	4	0	0
South Tripura (TR)	66	15	1	0
Total (N)	**1256**	**239**	**19**	**6**

***one mixed infection of Pf+Pm+Po detected**

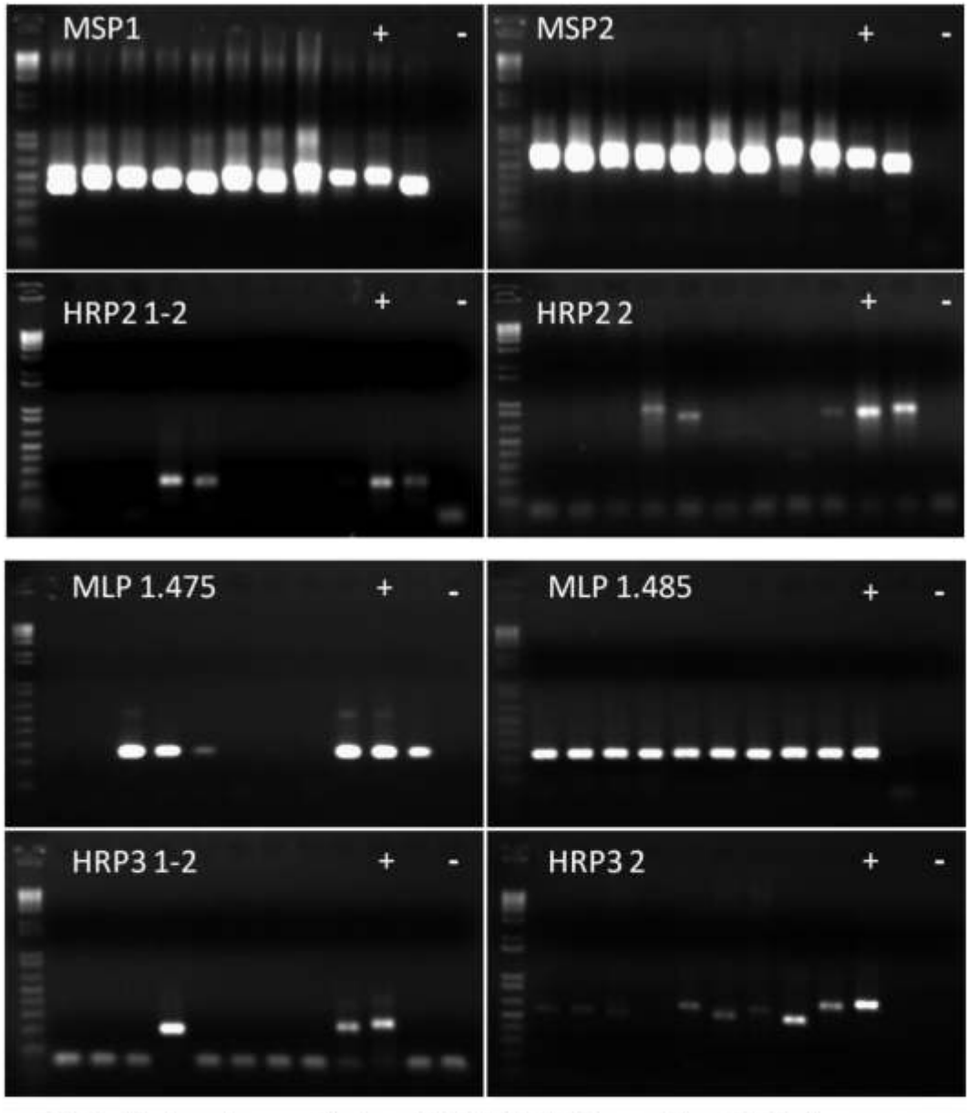


Figure 2.3.3: Molecular analysis of RDT (HRP2) negative *P.falciparum* samples. Gel picture of different gene showing the PCR amplification for confirmation of gene deletion

MLP 1.475;
MLP 1.485;
MSP1: Merozoite Surface Protein 1;
MSP2: Merozoite Surface Protein 2;
HRP2-1-2: Histidine Rich Protein 2 exon 1 & 2;
HRP2-2: Histidine Rich Protein 2 exon 2;
HRP3-1-2: Histidine Rich Protein 3 exon 1 & 2;
HRP3-2: Histidine Rich Protein 3 exon 2;

2.4 BIONOMICS OF MALARIA VECTORS AND THEIR SIBLING SPECIES, AND TO ESTABLISH THEIR ROLE IN MALARIA TRANSMISSION IN CHHATTISGARH, INDIA

Principal Investigator	:	Dr. Praveen K Bharti
Status	:	Ongoing
Funding	:	ICMR (Vector Borne Diseases Science Forum)

The study was carried out in 2 malarious districts i. e. Bastar and Korea of Chhattisgarh. Two CHCs in the district and 4 villages in each CHC were selected for this study (Fig. 2.4.1). The overall objective is to study the bionomics of prevalent malaria vectors and their role in malaria transmission for development of evidence based sustainable malaria control strategy with special reference to vector control.

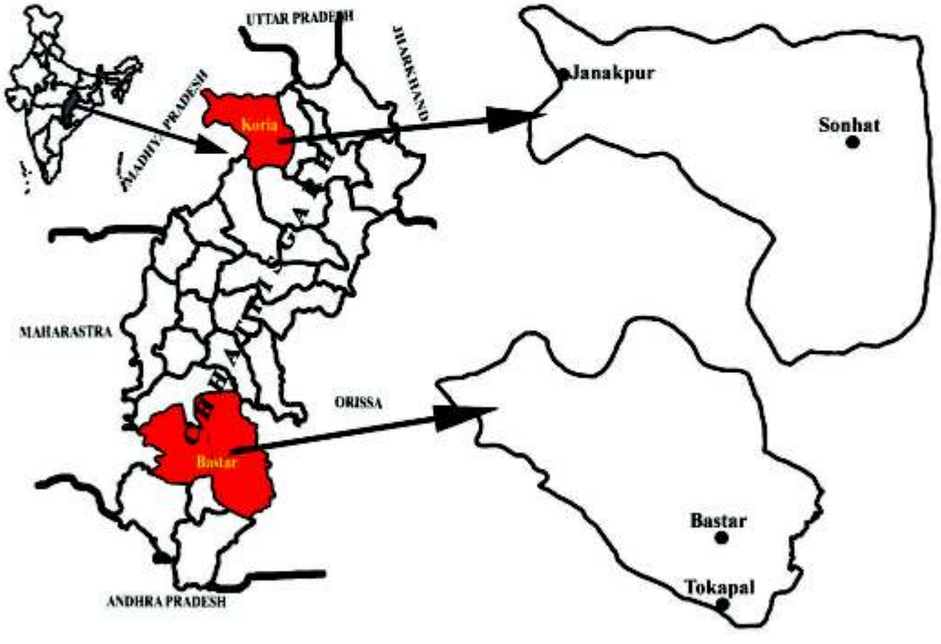


Figure 2.4.1: Map showing study sites in Chhattisgarh state

The anopheline fauna of the villages in both the districts consisted of mainly *An. culicifacies*, *An. subpictus*, *An. fluviatilis*, *An. annularis* and *An.vagus* in indoor resting collections. The mean density of *Anopheles culicifacies* caught per man hour during the year was 6.42 (95% CI 4.9-7.94) in Bastar district and 8.99 (95% CI 6.93-11.5) in Korea (Fig. 2.4,.2, 3 & 4). Susceptibility of *An. culicifacies* to diagnostic dose of deltamethrin (0.05%) and Alphacypermethrin (0.1%) was studied in both the districts. The corrected

mortality in Korea was 90% to deltamethrin (VR) and 99% to Alphacypermethrin in different localities. In Bastar district, the corrected mortality was 74% to deltamethrin (R) and 77% Alphacypermethrin (R). These results indicate that the species in Bastar is resistant to Deltamethrin and Alphacypermethrin in (Table 2.4.1).

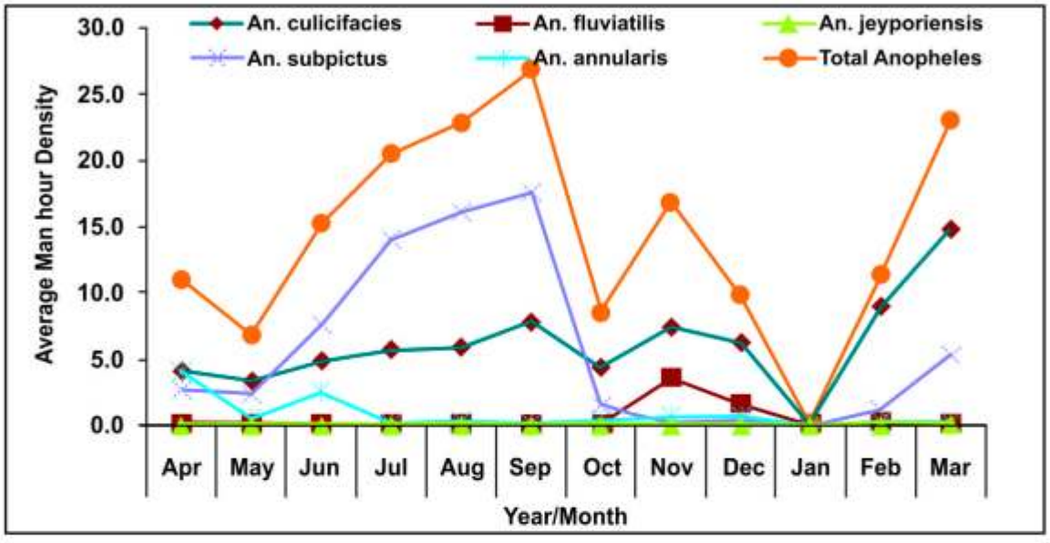


Figure 2.4.2: Month wise Per Man Hour Density (Indoor Resting Collection) in District Bastar

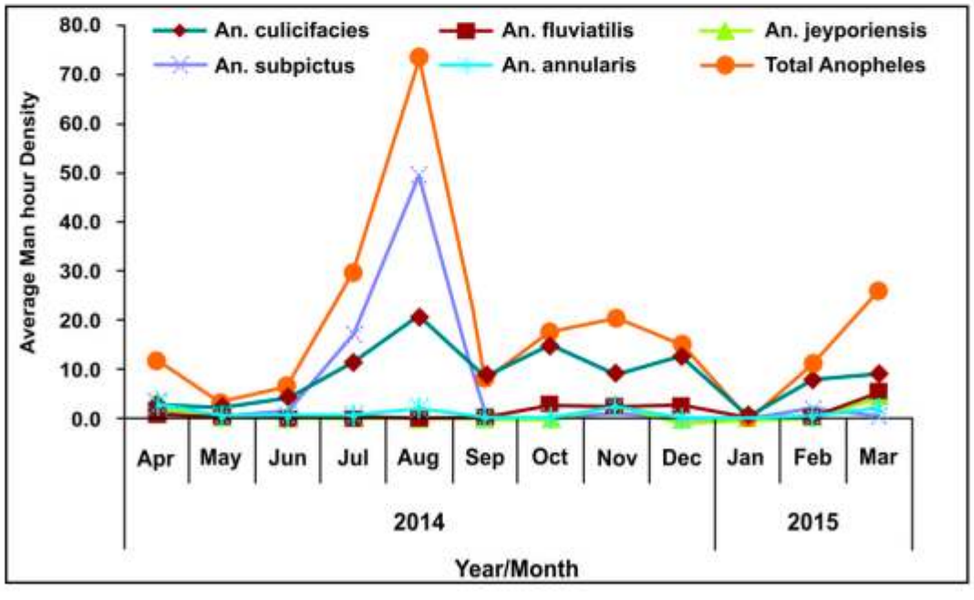


Figure 2.4.3: Month wise Per Man Hour Density (Indoor Resting Collection) in District Korea

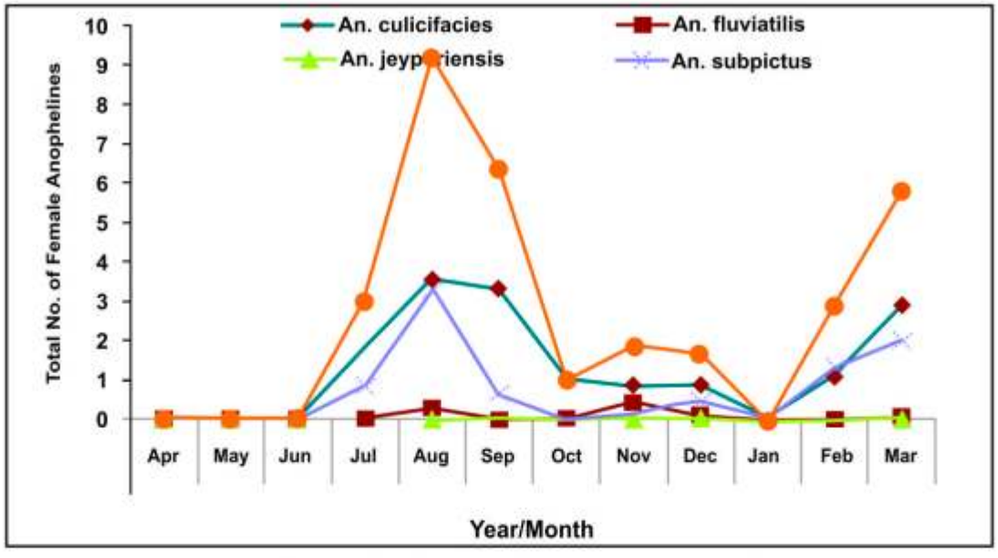


Figure 2.4.4: Month wise Anophelines density by Pyrathrum Spray Sheet Collection

Table 2.4.1: Insecticide Susceptibility status of *An. culicifacies* against various insecticides in different ecotypes

(Bastar)	No. of mosquito tested		% Mortality		% Corrected Mortality	
	Forest	Plain	Forest	Plain	Forest	Plain
Alphacypermethrin 0.1%	120	120	76.7 (R)	80.3 (VR)	76.7 (R)	79.3 (R)
Deltamethrin 0.05%	120	120	74.2 (R)	73.3 (R)	74.2 (R)	73.3 (R)
(Korea)						
Alphacypermethrin 0.1%	120	120	98.3 (S)	99.0 (S)	98.3 (S)	99.0 (S)
Deltamethrin 0.05%	120	120	90.0 (VR)	93.3 (VR)	90.0 (VR)	93.1 (VR)

Species specific breeding site surveys revealed high breeding of anopheline mosquitoes in streams and seapage water in Korea district from which mainly species viz. *An. culicifacies*, *An. subpictus*, *An. fluviatilis*, and *An. jeyporiensis* emerged. *An. culicifacies* was found breeding in all the places such as rocky pit, rocky stream, running stream and seepage water while *An. fluviatilis* breeding was found in rocky pit and seepage water whereas, other anophelines were mostly found breeding in running stream. A total 2637 (2393 *An. culicifacies* and 244 *An. fluviatilis*) anopheline mosquito collected from study area were assayed by PCR for detecting parasite/s (Fig. 2.4.5). Out of which 1 *An. culicifacies* were found positive for the *P. falciparum* from Bastar district. A total 358 *An.*

culicifacies samples and 153 *An. fluviatilis* were analysed by DNA sequencing. *An. culicifacies* sibling *C* (38 %) was dominant followed by species D (23%) and B (22%). *An. fluviatilis species T* was dominant in the study area (Fig.2.4.6 & 7). *P. falciparum* positive *An. culicifacies* was identified as species C.

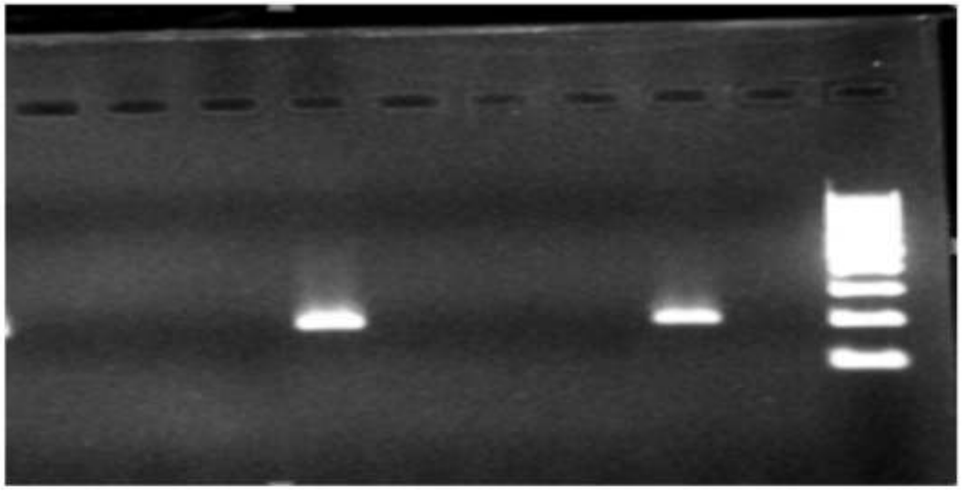


Figure 2.4.5: Gel picture showing the PCR amplification of *P. falciparum* 18s rRNA gene (206 bp)

(Lane 10: 100bp DNA ladder, Lane 8: positive control, Lane 9: negative control, Lane 1-7: genomic DNA isolated from mosquito, Lane 4 showing the positive for *P. falciparum* (206 bp))

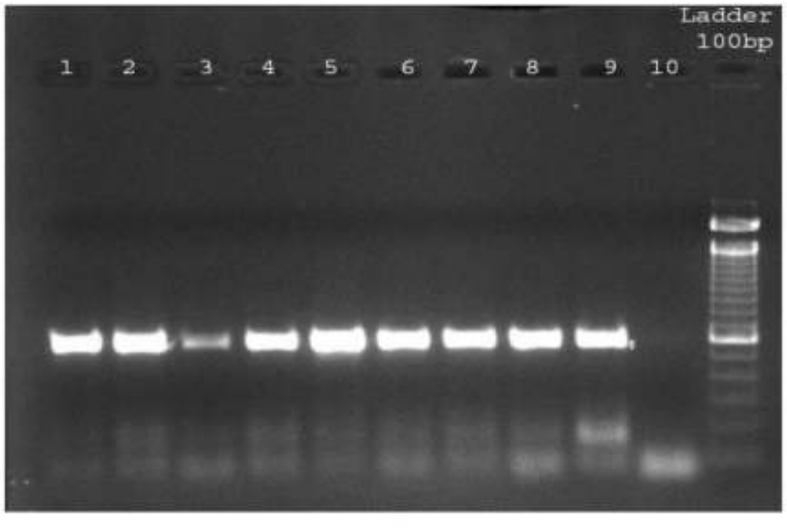


Figure 2.4.6: Showing PCR amplification of *An. culicifacies* ITS-2 region (600 bp) Lane 1-9 = shows isolated DNA samples (600 bp product), lane 10 = Negative control and lane 11 = 100 base pair ladder

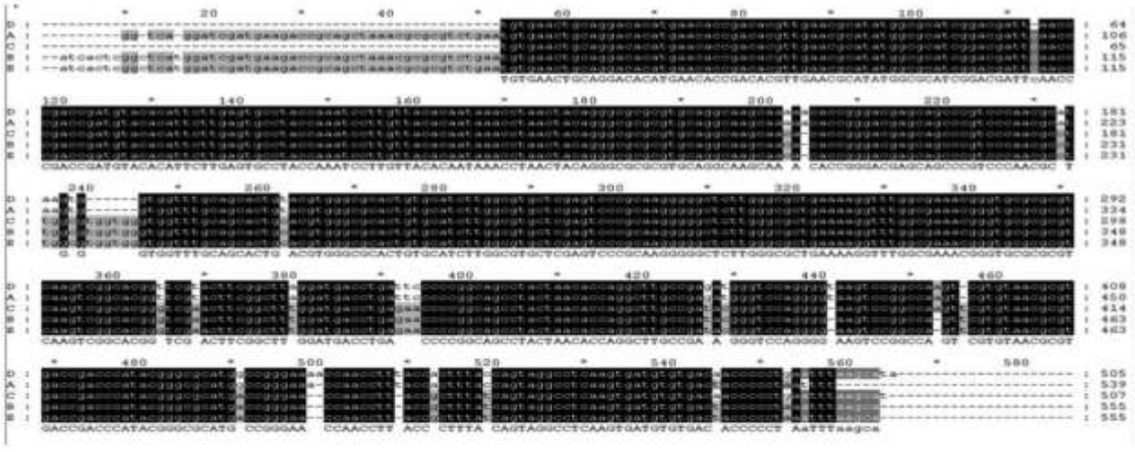


Figure 2.4.7: Nucleotide alignment of *Anopheles culicifacies* species complex ITS2 showing the sibling species of *Anopheles culicifacies*

2.5 MOLECULAR EPIDEMIOLOGICAL STUDY OF *PLASMODIUM FALCIPARUM* FIELD ISOLATES AND THE INCIDENCE OF MALARIA IN ENDEMIC REGIONS OF CENTRAL INDIA

Principal Investigator	: Dr. Neeru Singh
Status	: Ongoing
Funding	: Department of Biotechnology, Govt. of India

A cross sectional study was undertaken by conducting mass screening of population in 10 villages of Balaghat districts (Fig. 2.5.1) as part of GLUE Grant study. A total of 6761 blood smears were collected in mass surveys, of which 3748 were febrile for malaria of which 1213 were positive. The slide positivity rate (SPR) and slide falciparum rate (SFR) were 32.4 and 28.9% respectively with 89.4% *P. falciparum* (Table 2.5.1). Remaining 3013 blood smears were from afebrile subjects. The SPR and SFR were 29% (881/3013) and 26% (791/3013), which were significantly lower than that of febrile subjects. The proportion of *P. falciparum* and *P. vivax* was 90% and 10% respectively in both afebrile and febrile cases. Age group wise analysis of afebrile carriers revealed that slide vivax rate (SVR) was highest among infants (8.4%) and showed a steady declining trend with increasing age. SFR was high in 1-8 year old children followed by a decline (>8 years) and this difference was significant (Fig. 2.5.2).

Figure 2.5.1: Map showing study sites (C) in Balaghat district (B) of MP (A)

Table 2.5.1. Season wise prevalence of malaria in febrile and afebrile subjects in district Balaghat

	Febrile cases				Afebrile cases			
Seasons	**BSE#**	**Pos**	**SPR**	**SFR**	**BSE#**	**Pos**	**SPR**	**SFR**
Spring (Feb-Mar)	930	249	26.8	22.0	1153	309	26.8	22.7
Summer (Apr-Jun)	801	280	35.0	32.2	776	214	27.6	24.2
Monsoon (Jul-Sep)	618	213	34.5	30.4	556	201	36.2	34.4
Post Monsoon (Oct-Nov)	1099	318	28.9	27.2	438	116	26.5	25.6
Winter (Dec-Jan)	300	153	51.0	44.7	90	41	45.6	42.2
Total	**3748**	**1213**	**32.4**	**28.9**	**3013**	**881**	**29.2**	**26.3**

BSE-Blood slide examined; Pos-Positive for malaria; SPR-slide positivity rate; SFR- slide falciparum rate;

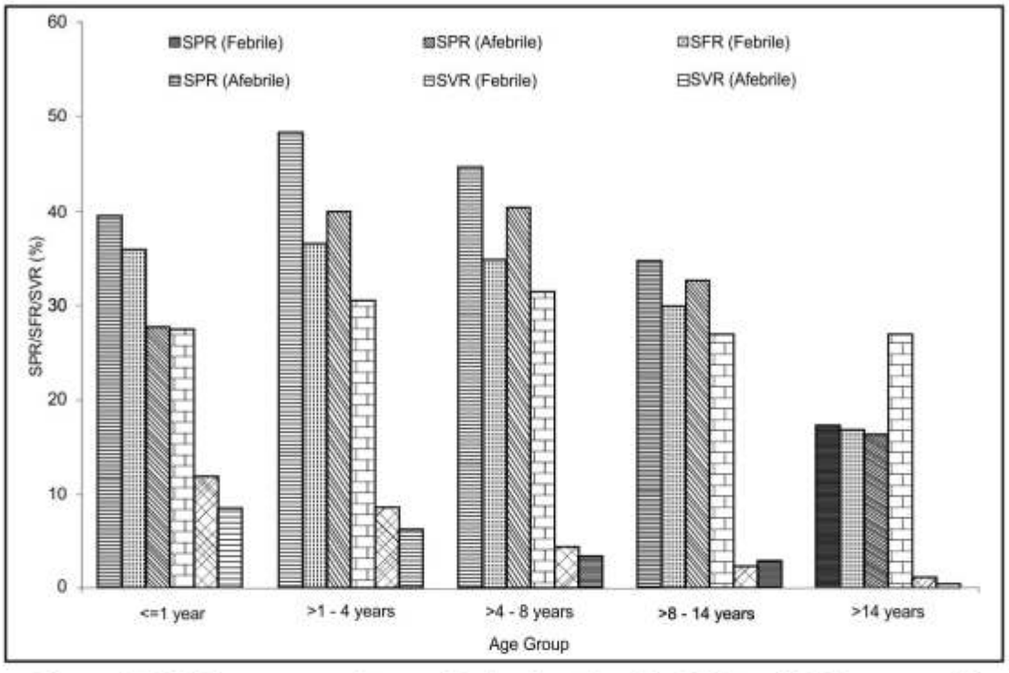


Figure 2.5.2: Age group wise analysis showing the SPR and SFR among the febrile and afebrile cases

2.6 MOLECULAR EPIDEMIOLOGY OF MALARIA IN INDIA AND QATAR WITH AN EMPHASIS ON PARASITE DIVERSITY, DRUG RESISTANCE AND IMMUNE RESPONSE

Principal Investigator	:	Dr. Neeru Singh
Status	:	Ongoing
Funding	:	Qatar National Research Fund (NPRP No. 05-098-3-021).

India contributes greatly to the global incidence of malaria. Therefore a collaborative study was undertaken to determine the genetic diversity, immune response and antimalarial drug resistance from North India (Chandigarh) North-East (Assam) and Central India (Chhattisgarh). All clinically suspected patients for malaria parasite were screened by microscopy. Patients with malaria infection diagnosed were enrolled in the study after obtaining the written consent. Blood samples were collected at the time of enrollment for further molecular and immunological study. Antibodies to polymorphic antigens expressed during the parasites pre-erythrocytic and erythrocytic stages are important mediators of

protective immunity against *Plasmodium falciparum* (*Pf*) malaria. The total immunoglobulin (Ig) G against *Pf* and *Pv* blood-stage vaccine candidate (synthetic peptides of *PfMSP* T & B cell epitopes, *PfCSP* B & T cell epitopes and *PfGLURP*) were quantified in plasma samples by enzyme-linked immunosorbent assay (ELISA).

A total 241 plasma samples including 182 *P. falciparum* and 59 *P. vivax* malaria cases were used to determine the total IgG antibody prevalence against the various antigen epitopes. The total IgG antibody prevalence varied for different antigens (Fig. 2.6.1). Prevalence of the total IgG antibody to the various antigens was between 39% to 97%. B cell epitopes of PfCSP and PfMSP showed the higher total IgG prevalence followed by T cell epitopes and *P. vivax* were almost lower in the range 39 % - 50%. More than 50% individuals come under low positive responder for all the epitopes (Fig. 2.6.2).

During this period a total 82 samples were analyzed for *dhfr* mutations at five codons (16, 51, 59, 108, and 164). Eighty two percent parasite population were harboring the mutation while only 18% were wild type. Majority of the parasite population having double mutations (50%) with double mutant *pfdhfr* $A_{16}N_{51}\mathbf{R_{59}N_{108}}I_{164}$ followed by 26% single mutant *pfdhfr* allele $A_{16}N_{51}C_{59}\mathbf{N_{108}}I_{164}$ and 6 % were triple mutations (Fig.2.6.3). One hundred five samples were analyzed for *dhps* mutation at five codons (436, 437, 540, 581, and 613). Parasite population with mutant type *pfdhps* allele was highest (54%) followed by wild type *pfdhps* genotype (46%). Majority of the parasite population having single mutations (35%) followed by 17% double mutant *pfdhfr* allele and 2 % were triple mutations (Fig.2.6.3).

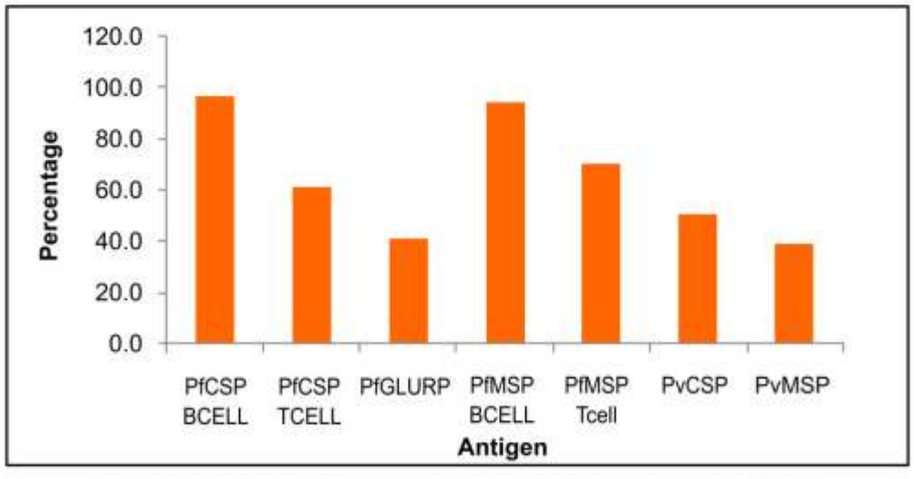


Figure 2.6.1: Prevalence of total IgG for various antigens

Pf CSP: *Plasmodium falciparum* circumsporozoite protein;
Pf GLURP: *Plasmodium falciparum* glutamate-rich protein;
Pf MSP: *Plasmodium falciparum* merozoite surface protein;
Pv CSP: *Plasmodium vivax* circumsporozoite protein;
Pv MSP: *Plasmodium vivax* merozoite surface protein;

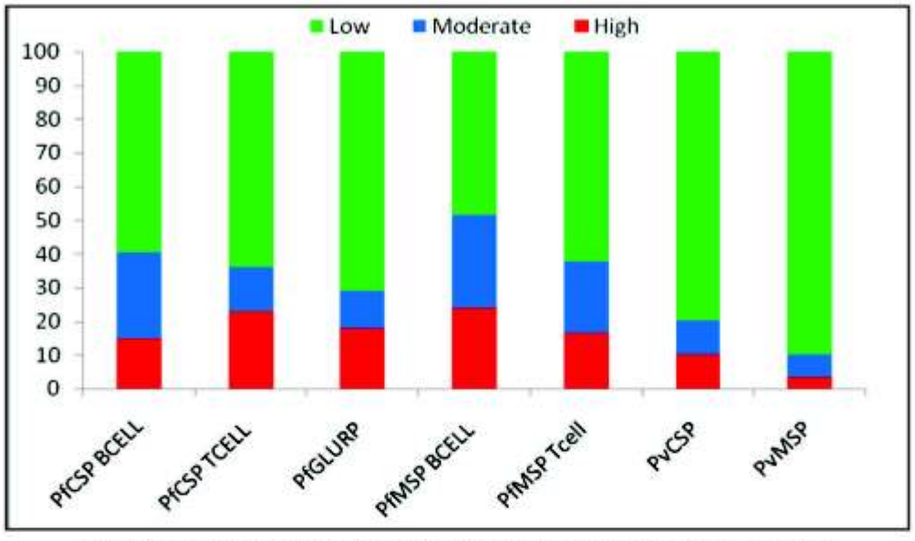


Figure 2.6.2: Levels of total IgG antibody responses among different responder categories

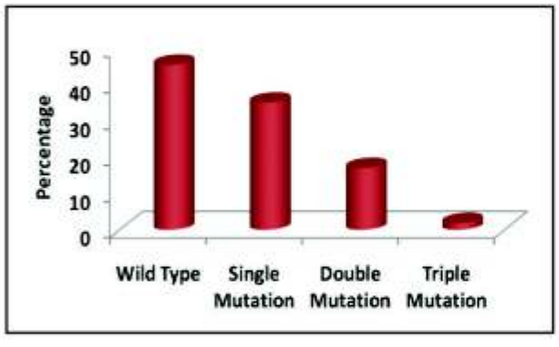


Figure 2.6.3: Distribution of *dhfr* Genotypes

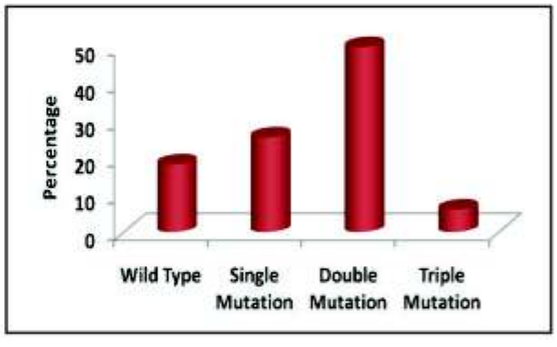


Figure 1.6.4: Distribution of *dhps* Genotypes

2.7 ANALYSIS OF IN VIVO TRANSCRIPTOME OF *PLASMODIUM FALCIPARUM* FROM INDIAN PATIENTS SUFFERING FROM CEREBRAL MALARIA AND ITS COMPARISON WITH THAT FROM PATIENTS INFECTED WITH SEVERE MALARIA (WITH MOD SYMPTOMS)

Principal Investigator	:	Dr. Neeru Singh
Status	:	Ongoing
Funding	:	ICMR

This study is carried out at Maharani medical college, Jagdalpur and District Hospital, Baikunthpur (Chattisgarh) to determine the in vivo *P. falciparum* gene expression profiling

in cerebral and severe (non cerebral) malaria cases. All the patients admitted to the hospitals with fever history were examined for malaria using the microscopic examination of the blood smear. Thin & thick blood smear was prepared by finger prick method. Those patients who fulfilled the enrolment criteria and consented to participate in the study were enrolled. cDNA synthesis was performed according to the QIAGEN LongRange 2Step RT–PCR kit. cDNA was synthesized from 100-350ng total RNA in a reaction volume of 20µL. Reverse transcription reactions (cDNA) were stored in -20°C for validation by Real Time PCR.

A total of 13232 patients were screened for malaria during this period, out of which 1037 were found positive for malaria parasite with 90% *P.falciparum*. 93 cases were enrolled in this study which was classified under different categories on the basis of clinical and laboratory characteristics. i.e., Cerebral Malaria (n=28), Severe Malaria (n=50), Mild Malaria (n=15). A subset of 60 samples were taken for RNA isolation, out of which RNA was isolated in 38 samples (CM – 13, SM – 13 & MM – 12) successfully in terms of good quality & quantity. cDNA synthesis was done of all the 38 isolated RNA samples. Sixteen samples (8-CM, 4-SM and 4- MM) were collected in PAXgene Blood RNA tubes for microarray analysis.

2.8 A FIELD BASED STUDY TO ASSESS BURDEN OF MALARIA DURING PREGNANCY (MIP) IN TWO BLOCKS OF DISTRICT BALAGHAT, MADHYA PRADESH

Principal Investigator	:	Dr. Vidhan Jain
Status	:	Ongoing
Funding	:	Intramural

This study was taken up with the objectives to assess burden of malaria and associated adverse outcomes among pregnant women (PW) in an highly endemic area for malaria. Malaria transmission in Birsa and Baihar Blocks of district Balaghat is perennial (Fig. 2.8.1). A previous study in the same area revealed infant positivity rate of >30% and malaria prevalence of 29.2% among afebrile individuals.

Figure 2.8.1 : Map showing two blocks (Highlighted) of study area in district Balaghat

Malaria surveillance (primary, follow-up and PNC) is done among pregnant/delivered women aged >15 years. Women were approached with the help of Aaganwadi/ASHA worker. Verbal consent was taken prior to the screening. Filter paper blood (20 micro litre) was also obtained from PW and hemoglobin (g/dl) measurement is done by indirect cynmethemoglobin method. If found malaria positive, women were treated with ACT according to the national guidelines. Women were also given Iron and folic acid tablets at each visit. Delivery outcomes were recorded. Statistical software STATA 11.0 was used in calculating frequency distribution of categorical data.

A total of 942 pregnant women were screened for malaria. Median age of pregnant women was 23 (20-25) years. Out of 942 pregnant women; 350 were nulliparous, 302 were primiparous and 289 were multiparous. Parasite prevalence among PW was 18.9% (95.5% *pf*, 4% *pv* and 0.6% *pm*). Only 26.5% malaria infections were symptomatic. Parity wise distribution of disease prevalence revealed that nulliparous PW (25.4%) had significantly more malaria than primiparous PW (12.6%) and multiparous PW (17%) [2.4 (1.6-3.6), $p<0.0001$; 1.7 (1.1-2.5), $p = 0.01$ respectively]. At the time of enrollment, hemoglobin estimation is done in 665 PW. Prevalence of anemia was 83.8% (mild to moderate anemia = 66.6%, severe anemia = 33.4%). Anemia prevalence among malaria positive and negative PW revealed no significant difference (86.1 % vs 82.9%). ANC follow-ups were conducted among 312 pregnant women. Parasite prevalence at the time of follow-up was 22.4% (98.6% *pf*, 1.4% *pv*). After delivery 400 women and 232 infants were screened for malaria. Malaria prevalence among PNC women was 16.5% (92.4% *pf*, 6.1% pv and 1.5% pm). Infant parasite rate was 7.8% (72.2% *pf*, 22.2% pv and 5.5% mix infection). Five hundred and seventy six delivery outcomes were recorded (only 40%

deliveries were institutional). Overall percentages of adverse outcomes in the form of low birth weight (LBW), abortion and still birth were 16.6%, 3.2%, 3.1% respectively. LBW outcome and abortion were more associated with nulliparous PW (23% & 2.3%) followed by primiparous PW (15.6% & 1.7%) and multiparous PW (10.6% & 2.0%). The study is in progress.

2.9 PHASE- I ENDLINE HOUSEHOLD SURVEY TO ASSESS THE IMPACT OF LLINs IN MADHYA PRADESH

Principal Investigator	: Dr. R.K. Sharma
Status	: Completed
Funding	: NVBDCP

The World Bank supported project namely National Vector Borne Disease Control was initiated in India from August 2008 in several high risk and high *falciparum* incidence districts of India. This project introduced important, new and more effective measures for the control and management of malaria. Currently, the strategies for malaria control are: (i) Early diagnosis and complete treatment, (ii) Integrated vector management by use of Indoor Residual Spraying (IRS) in selected high risk pockets, insecticide treated bed nets, larvivorous fish, environmental and minor engineering methods, (iii) Epidemic preparedness and rapid response, (iv) Behaviour Change Communication (BCC) for social mobilization, (v) Inter-sectoral convergence (vi) Capacity building by training, (vii) Monitoring and evaluation through computerized Management Information System and review of the programme. After successful implementation of this revised programe for more than five years, Government of India wanted to assess its impact on malaria control. As a part of Phase-I evaluation of project, the endline survey was carried out in Madhya Pradesh state. The objective of the household survey was to assess the impact over the baseline after interventions carried out by National Vector Borne Diseases Control Program in the Madhya Pradesh state of India.

Using multi-stage sampling ten endemic Block PHCs were randomly selected from Madhya Pradesh state. At second stage, eight villages (with API >5) from each of the 10 blocks were randomly selected, i.e. a total 80 villages from 10 blocks. At third stage, 22 households from a selected village were randomly selected by systematic circular sampling, making the total households to be selected as 1760 in a state. Apart from household survey, it was also planed to interview malaria cases - a maximum of 22 last

fortnight fever cases (recall of 15 day's fever), all available fever today cases in the selected villages.In the endline household malaria survey, six different interview schedules were used to collect information. These schedules were village schedule, ASHA schedule, household schedule, fever two week schedule, fever today schedule and death schedule. In the survey overall 80 villages schedules, 1698 households schedules, 1275 fever two weeks schedules, 670 fever today, 77 ASHA and 162 deaths schedules were completed.

Out of 1698 households interviewed, only 41% reported that their houses were ever sprayed for insecticide residual spray and only 21% reported that their houses were sprayed during 12 months preceding the survey. Only 23% household reported of having any bednet that can be used to protect from mosquitoes.

In the household survey, respondents were also asked about the knowledge, attitude, and practices (KAP) related to malaria. More than 81% respondents reported that biting of mosquitos is the cause of malaria. The dirty water (73%), followed by bushes (34%) were described as main sources of mosquitoes. The use of bed nets (53%) and use of smoke to prevent mosquitoes (48%) were commonly reported means to avoid getting malaria. In all 52% and 46% respondents reported high fever and chills respectively as symptoms of malaria. Blood test (35%), consulting doctor (28%) and consulting a health workers/ASHA (21%) were reported as mode of confirming the malaria. Getting treatment from health workers or hospital (75%) was reported as an important action to get well from malaria.

In the survey 1275 fever cases who had fever during two weeks preceding the survey date were interviewed. The treatment seeking pattern of patients revealed that about 58% fever cases contacted a health worker the same day or next day. But RDT/blood slides were prepared in 29% cases only. Twenty nine percent individuals reported that the result of RDT were conveyed to patient within a day from the date of testing. Only in case of 3% fever cases, the diagnosis (RDT/Blood slides) were done by the local service providers (ASHA or AWW), but about 12% of them received treatment from local service providers.

In the survey 670 patients who were having fever on the date of survey were also interviewed and clinically examined by the ASHA/ANM/ MTS. The RDT and/or blood slide were also prepared for all those who were willing to go for finger pricks. Out of total fever today cases, 36.9% were less than 15 years, 54.2% were in age group 15-59 years and 8.9% were 60 years old. Other than fever, the commonly reported symptoms were chill (80.7%), headache (74%), cough (65%), joint pains (53%) and sore throat (10%). In case of 627 cases (94%), the health worker provided some treatment/medicine. Among these, only 26 were given ACT (only ACT or ACT with CQ or paracetamol), but 274 were given CQ

(only CQ or with ACT or paracetamol) and 534 were given paracetamol (only paracetamol or with other anti-malarial medicines). Out of total 670 cases, blood examination (RDT/Blood slides) were done in 586 cases, and out of these 84 were found positive (SPR=14.3%). Among these 84 cases, 47 cases were of *Pf* (SFR=8.0%) and 37 cases were of *Pv* (SVR=6.3%).

2.10 PHASE- I ENDLINE HOUSEHOLD SURVEY TO ASSESS THE IMPACT OF LLINs IN CHHATTISGARH

Principal Investigator	:	Dr. K.B.Saha
Status	:	Completed
Funding	:	NVBDCP

As part of Phase-I evaluation of the project, the endline survey was also entrusted to NIRTH, Jabalpur to be carried out in Chhattisgarh. Similar to Madhya Pradesh the duration of survey including data entry and validation was for one year.

The objective and methodology of survey was similar to that adopted in Madhya Pradesh. The only fact that Chhattisgarh is affected by social conflict particularly in the southern part of the state and this makes the survey a difficult task to accomplish. Using multi-stage sampling ten endemic Block PHCs were randomly selected from Chhattisgarh state. At second stage, eight villages (with API>5) from each of the 10 blocks were randomly selected, i.e. a total 80 villages from 10 blocks. At third stage, 22 households from a selected village were randomly selected by systematic circular sampling, making the total households to be selected as 1760 in the state. Apart from household survey, it was also planned to interview malaria cases - a maximum of 22 last fortnight fever cases (recall of 15 day's fever), all available fever today cases in the selected villages. In the endline household malaria survey, six different interview schedules were used to collect information. These schedules were village schedule, ASHA schedule, household schedule, fever two week schedule, fever today schedule and death schedule. The survey was undertaken during November – December 2014. The duration of the survey in various districts and the movement of the two survey team of 21 members each including controlling officer, field supervisors, listers and mappers and surveyors are shown in figure 2.10.1 and table 2.10.1.

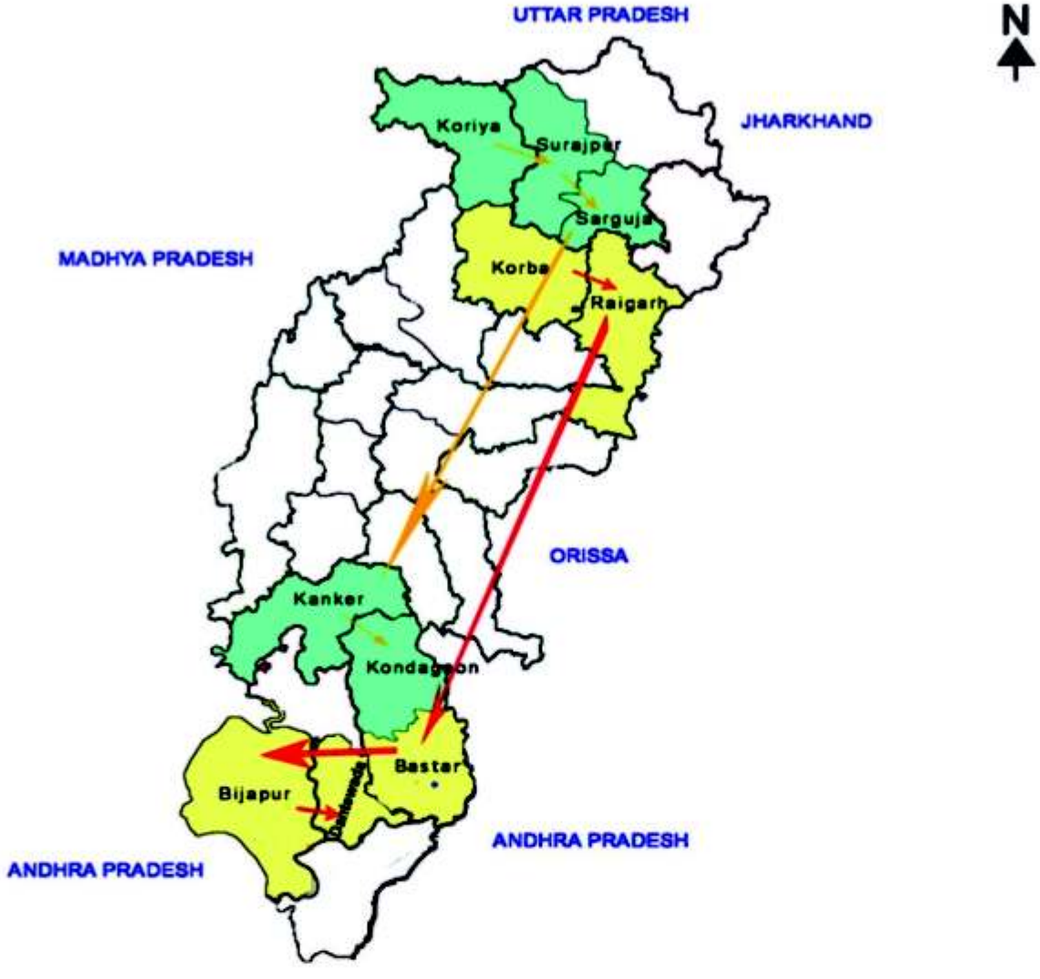


Figure 2.10.1. Map of Chhattisgarh showing the study Districts & the line of movement for survey

Table 2.10.1. Selected Block PHCs under the districts & period of survey

Period of survey	Team A	Team B
15-21 Nov'14	Korea Dist (Manendragarh)	Korba Dist (Khatgora)
23-27 Nov'14	Surajpur Dist (Odgi)	Raigarh Dist (Lailunga)
28-3 Dec'14	SargujaDist (Bhafouli)	Bastar Dist (Nangoor)
4-9 Dec'14	Kanker Dist (Bhanupratappur)	Bijapur Dist (Bhopalpatnam)
10-15 Dec'14	Kondagaon Dist (Makdi)	Dantewada Dist (Dantewada)

In the household survey, 1745 households were successfully interviewed comprising 7477 persons, with overall sex ratio of 1038 females per 1000 males. Since survey was carried out selected malaria endemic blocks, about 55.4% of selected households belonged to Scheduled Tribes (ST), 8.3% Scheduled castes (SC), 31.4% Other Backward Classes and only 4.8% belong to other category.

Out of 1745 households interviewed, 78.2% reported that their houses were ever sprayed for insecticide residual spry and 58% reported that their houses were sprayed during 12 months preceding the survey. Fifty three percent household reported of having any bednet that can be used to protect from mosquitoes.

In the household survey, respondents were also asked about the knowledge, attitude, and practices (KAP) related to malaria. A total of 84.1% respondents reported that mosquitos' biting is the cause of malaria. The dirty water (72%), followed by bushes (30%) and forest (14%) were described as main sources of mosquitoes. The use of mosquito nets (67.3%) and use of smoke to prevent mosquitoes (44.2%) were two commonly reported means to avoid getting malaria. In addition to the use of ITN (9%), use of IRS (10%) and use of repellent/ coil (15%) to avoid mosquitoes was also reported. Respondents reported high fever and chills were 58% and 41% respectively. Blood test (60%) and consulting doctor (28%) were reported as mode of confirming the malaria. Getting treatment from health workers or hospital (79%) was reported as an important action to get well from malaria. Seventy eight percent of the respondents felt that malaria may prove to be fatal leading to death.

In the survey 981 cases were recorded as fever during two weeks preceding the survey date. Out of these fevers two week cases, 29% were less than 15 years, 60% in age group 15-59 and 11% were 60 year old or older. Little more than half (56%) of the fever two week cases were reported from females. The treatment seeking pattern of patients revealed that 77% fever cases contact a health worker within same day or next day. But RDT/blood slide was prepared in 51% cases and only in cases of 38.4% it was done within one day from the onset of the fever. Forty nine percent of the respondents reported that the result of RDT were conveyed to patient within one day from the date of testing. Only in case of 1.2% fever cases, the diagnosis (RDT/Blood slides) were done by the local service providers (ASHA or AWW), but about 4% of them received treatment from local service providers.

In the survey 331 patients who were having fever on the date of survey were also interviewed and clinically examined by the ASHA/ANM/ MTS. The RDT and/or blood slide were also prepared for all those who were willing to go for finger pricks. Out of total fever today cases, 19% were less than 15 years, 65.32% were in age group 15-59 years and

15.7% were 60 years old or older. Little more than half (57%) fever today cases were females. Other than fever, the commonly reported symptoms were chill (88.2%), headache (84%), cough (54.4%), joint pains (62.8%), breathlessness (13.3%) and sore throat (11%). In case of 288 cases (87%), the health worker provided some treatment/medicine. Among these, only 46 were given ACT (only ACT or ACT with CQ or paracetamol), 104 were given CQ (only CQ or with ACT or paracetamol) and 275 were given paracetamol (only paracetamol or with other anti-malarial medicines). Out of total 331 cases, blood examination (RDT/Blood slides) were done in 324 cases, and out of these 85 were found positive (SPR=26.2%). Among these 85 cases, 77 cases were of *Pf* (SFR=23.7%) and 8 cases were of *Pv* (SVR=2.5%).

FILARIASIS

2.11 MASS DRUG ADMINISTRATION IN THE CONTROL OF LYMPHATIC FILARIASIS – STUDY ON COVERAGE & COMPLIANCE RATE AND IMPACT ON TRANSMISSION OF INFECTION IN SELECTED AREAS OF MADHYA PRADESH

Principal Investigator	:	Dr. Gyan Chand
Status	:	Completed
Funding	:	Intramural

Filariasis is an important neglected tropical disease. India shares about 40% of global disease burden while its population is only 18 % of the global population. Major strategy was to reduce the microfilaria load to level below which transmission is not sustainable by providing diethylecarbamazine citrate (DEC) & albendazole to entire population residing in areas at risk once annually commonly known as mass drug administration (MDA). India launched MDA in 2004 and set 2015 as the target for elimination of disease from the country. In Madhya Pradesh MDA is being given in 11 districts.

A study was taken up with the objectives to assess the impact of MDA on microfilaria rate in selected population, infection and infectivity rate of vector and to detect filarial antigenaemia in children of 5-7 years of age. Coverage & compliance rate of MDA and the factors that influence compliance and non compliance of MDA was also assessed.

Villages were selected keeping in view high disease rate and having historically more chronic cases in consultation with DMO of respective districts. Atleast two villages from each district were selected and from each village, 300 to 500 persons were examined

as per WHO protocol. In addition to these 11 endemic districts, four district namely Shivpuri, Shahadol, Bhind and Hosangabad were also surveyed on receipt of information regarding presence of chronic symptomatic cases which are generally associated with filarial disease.

Mosquitoes were collected from human dwellings in the morning hour between 6:00AM to 9:00AM while thick smear was prepared between 8.00 – 11.00 PM. Only *Culex quinquifasciatus* specimens were dissected for determination of infection and infectivity rate. Head, thorax and abdomen of the mosquitoes were teased separately in normal saline and examined for the presence of infection of any stage of developing filarial larvae and infective stage larvae.

For coverage and compliance rate of MDA three districts namely Panna, Chattar pur and Katni were surveyed using structured and semi structured schedule. The survey was carried out within a month after distribution of drug.

Microfilaria prevalence in endemic districts: Twelve thousand nine hundred and fifty six blood slides were collected from 11 districts covering 43 villages. Overall mf rate was 5.4%. Mf rate varied from 0.2% in district Sagar to 13.2% in district Chattarpur. Among these 43 villages microfilaria was not found in 9 villages/sites. In other 34 villages mf rate varied from 0.4 (Majgwan of Umaria to 22.1% (Kanwara of Katani district). Only 6 villages had <1% of Mf prevalence. Eighteen villages were having Mf prevalence >5 %. Age group wise analysis reveal that Mf rate increase with the advancement of age and attain peak in the age of 35-40 years and stabilized thereafter. Mf rate was more in males (6.8%) than females (3.5%). ($Z=8.5, p<0.05$).

Infection and Infectivity rate: Two thousand and one hundred specimens of *Culex qinquifasciatus* were dissected from 10 known endemic districts. One hundred fifty six were positive for filarial infection (infection rate-7.4%) and 42 were having infective stage larvae (infectivity rate -2.0%). Only in district Sagar and Satna infection was not found in vector population. From Non MDA districts in all, 5042 persons were examined from 12 villages of the four districts. Three hundred forty six persons were found to have Mf (6.9%). In one village of Shivpuri district, Mf was not found while in remaining 11 villages, the Mf rate varied from 0.3% (CI = 0-1.6) in the Pichore village of Shivpuri district to 16.9% , in Mehdwan village of Bhind district (Table 2.12.1). Overall district wise, Mf rate ranged from 3.8% in Shivpuri to 11.2% in Bhind district, and variation in the Mf rate was significant ($\chi^2=68.5.0$ $P<0.001$). Sex-wise Mf rate was significantly higher in males (7.6%) than in females (6.0%) ($\chi^2=4.8$, $P<0.05$). Prevalence of microfilaria was lowest in <10 years of age and increased with age and attained peak at 36-45 years of age. Age group-wise variation in Mf rate was statistically significant ($r=0.73, P=0.01$). Two hundred thirty six specimens of *Culex*

quinquefasciatus were dissected from three districts. Twenty were having developing filarial larvae (infection rate- 8.2%) and six specimens had infective stage (L3) larvae (infectivity rate- 2.3%).

MDA compliance rate: Coverage and compliance of drug was evaluated in Katni district after 10th round of MDA. Thirty villages were covered as per the WHO criteria. In all 875 House hold were covered having 4211 eligible population for MDA. Only 61 % population received the drug and 44.7% respondents reported having swallowed the drug. Overall compliance of drug was 35.3% which is much below the required compliance rate.

Table 2.12.1: Compliance rate of MDA in different rounds

District Year (MDA round)	No. of respon-dents	Respon-dents eaten drug	Compli-ance rate	Total eligible pop.	Persons received drug	Coverage %	Persons eaten drug compliance %	Compliance %
Katni 2014 (10)	875	391	44.7	4211	2564	60.8882	1487	35.3
Total	2119	820	38.7	11068	6447	58.249	3275	29.6

Reason for non compliance of drug: Five hundred sixty four respondents were asked about non adherence to the MDA. Two hundred ninety three (52%) respondents revealed that they were not given the drug. Among drug recipients 40% cited no reason or casual approach followed by fear of side effect (19.2%), no disease (12.5%) as the predominant reason for the non-swallowing the drug. Sickness at the time of MDA was revealed by 10.8% respondents while 10.7% informed old age or younger age for non consumption of drug although they were eligible. Among the respondents who swallowed the drug only nine (2.3%) reported having developed minor side effects in the form of fever, giddiness, and vomiting.

3. GENETIC DISORDERS

3.1 NEWBORN SCREENING (NBS) FOR SICKLE CELL DISEASE AND PROVIDING COMPREHENSIVE CARE TO UNDERESTAND THE NATURAL HISTORY OF SICKLE CELL DISEASE IN TRIBAL POPULATIONS IN MADHYA PRADESH AND GUJARAT

Principal Investigator	:	Dr. K. Ghosh, NIIH Mumbai
Co-PI	:	Dr. S. Rajasubramaniam
Status	:	Ongoing
Funding	:	ICMR

Sickle Cell disease in India has a very varied clinical presentation ranging from a severe clinical presentation to a mild or asymptomatic one. People affected by Sickle Cell Disease (SCD) are frequently misdiagnosed as having iron deficiency anemia and given iron therapy. Their hemolytic jaundice due to excessive break down of red blood cells is treated as infective hepatitis, joint pains are treated wrongly as arthritis and murmurs due to anemia are wrongly treated as rheumatic fever. Further many of the Indian Sickle cell disease patients are also wrongly treated with repeated blood transfusions. In view of above facts "Newborn Screening (NBS) for Sickle Cell Disease and providing comprehensive care to understand the natural history of Sickle Cell Disease in Tribal Populations in Madhya Pradesh is undertaken. The major objectives of the study is to undertake a targetted newborn screening program for Sickle cell disease in tribal and non tribal populations in the state, to follow up all newborns with Sickle Cell Disease along with a similar number of Sickle cell trait and normal newborns to evaluate morbidity and mortality, to provide care for any complications in the first few years of life, to evaluate the contribution of genetic factors like alpha thalassemia and the Xmn 1 polymorphism in the presentation of the disease, to understand the natural history of Sickle Cell Disease among tribal populations in these states and to prevent the birth of sickle homozygous babies in these families at risk by offering prenatal diagnosis and counseling.

Since the initiation of the NBS clinic at NSCB Medical College, 1444 pregnant women have been tested for various hemoglobinopathies, among them 96 women were found to be Sickle cell carriers, seven women homozygous for Sickle Cell Disease and 16 women were β-thalassemia carriers and one was HbE trait. A total of 51 spouses of these women were screened for carrier/disease status. So far 13 high risk couples have been found and the birth of child of these couple is expected soon (Table 3.1.1).

In addition, cord blood/fetal blood samples were also collected from NSCB Medical College from Gynecology labor room. A total of 236 samples have been collected and screened. Among them 22 sickle cell carriers and two Sickle Cell Disease children have been detected. The SCD (homozygous child) and sickle cell carriers are being followed every quarter.

Table 3.1.1: Hemoglobin variant detection based on HPLC or Hb-electrophoresis in pregnant women, new born and suspected carrier couple

Total samples received	1495
Females	1444
Females Normal	1324
AS	96
SS	7
AE	1
Beta thal trait	16
Males (Husbands)	51
Males Normal	38
AS	9
Beta thal trait	4
Total high risk couples	13

Note: AS- Sickle cell trait; SS- Sickle cell disease; AE- Hemoglobin E trait

3.2 MICRO MAPPING OF G6PD DEFICIENCY AMONG THE TRIBALS OF INDIA AND ITS IMPORTANCE FOR ANTIMALARIAL THERAPY

Principal Investigator	:	Dr. Malay Mukherjee, NIIH Mumbai
Co-PI	:	Dr. S. Rajasubramaniam
Status	:	Ongoing
Funding	:	ICMR

Multi-centric study on "Micro mapping of G6PD deficiency among the tribals of India and its importance for antimalarial therapy" was initiated with the objectives: to screen for G6PD enzyme deficiency in different tribal population groups of India; to quantitate the level of enzyme deficiency; to evaluate the clinical manifestations in the G6PD deficient individuals; to characterize the mutations underlying G6PD deficiency and determine their

distribution in different tribal groups and correlate the clinical findings with the type of mutations present.

The strategies for sample collection and common proformas to be used were finalized at NIIH during October 2014. Staff recruited in the study underwent training at NIIH, Mumbai in the month of March 2015.

Five districts namely Jabalpur, Mandla, Dindori, Chhindwara and Damoh were selected for the study. Field trips were undertaken to Dindori district and children from eight tribal schools were screened for various hemoglobinopathies and G6PD deficiency. A total of 416 children between the age group of 7-16 years were screened for G6PD deficiency. Of these 410 belonged to Gond tribal community. Of the 416 children, 25 were found to be G6PD deficient. Analysis for other hemoglobinopathies revealed that among 416 children, 65 children were sickle cell carriers (15.6%) and 2 were homozygous for sickle cell disease (0.5%). Of the 25 G6PD deficient samples enzyme activity varied between 0.0-0.67 IU/gm Hb. All deficient samples have been sent to NIIH, Mumbai for mutational analysis.

Out of 195 samples received from NSCB medical college, Jabalpur, 164 belong to Gond tribe, 14 for Kol and 17 for Scheduled castes and others. These samples were also screened for G6PD deficiency and none of them were found to be G6PD deficient.

3.3 ESTABLISHMENT OF PRENATAL DIAGNOSIS OF β-THALASSEMIA SYNDROMES AND SICKLE CELL DISORDERS IN MADHYA PRADESH AND ASSAM

Principal Investigator	:	Dr. Malay Mukherjee, NIIH Mumbai
Co-PI	:	Dr. S. Rajasubramaniam
Status	:	Ongoing
Funding	:	ICMR

Multi-centric study on "Establishment of Prenatal Diagnosis of β- Thalassemia Syndromes and Sickle Cell Disorders" was initiated with the objectives: to establish molecular technology based on oligo-probe hybridization and allele specific amplification for characterization of b globin gene mutations in hemoglobinopathies; to train gynaecologists and sonologists in the interventional procedures for obtaining fetal tissue by chorionic villus sampling (CVS) in the first trimester of pregnancy and fetal blood by cordocentesis in the second trimester of pregnancy; to set up prenatal diagnosis facilities by DNA analysis and HPLC analysis using chorionic villus tissue and fetal blood;

to establish VNTR analysis and fetal cell staining to rule out maternal contamination in fetal samples; to undertake a quality control programme to monitor uniformity and accuracy of diagnosis at the different centres; screen women in antenatal clinics for hemoglobinopathies and husbands of carrier women to identify couples at risk and to create awareness among medical professionals particularly gynaecologists from neighbouring hospitals to identify couples at risk and refer them for genetic counseling and prenatal diagnosis.

The strategy for sample collection and finalization of the proformas to be used by all the collaborating centres was made at NIIH, Mumbai. Recruited staffs underwent hands on training on use of HPLC based Variant system, CVS cleaning, DNA extraction both qualitative and quantitative assays, PCR based CRDB and ARMS for the confirmation of hemoglobinopathies identified by the Hb Variant Systems.

Molecular studies involving ARMS- PCR and CRDB procedures have been standardized and initiated in the institute. A total of 24 high risk couples have been identified and followed up. Among these three high risk couples were referred to NIIH, Mumbai for Chorionic Villus sampling. The fetuses suspected for carrying homozygous sickle cell disease/Beta thalassemia were tested and found to be sickle cell or Beta thalassemia carriers only. Further five babies born to suspected high risk couples were also tested. Among them four babies were found to be sickle cell trait and one was normal. Efforts are also being made to obtain license from the state health authorities for initiating CVS sampling at the institute through the partner NSCB medical college, Jabalpur. Training of Gynaecologist and Sonologist belonging to NSCB Medical College, Jabalpur in CVS sampling at AIIMS, New Delhi is being scheduled.

4. SOCIAL & BEHAVIOURAL STUDIES

4.1 REACHING PRIMITIVE TRIBAL GROUP WITH IEC TO IMPROVE AWARENESS TO MALARIA : AN APPRAISAL OF BAIGAS OF BAIGACHAK AREA OF DINDORI DISTRICT OF MADHYA PRADESH

Principal Investigator	:	Dr. K. B. Saha
Status	:	Completed
Funding	:	Govt. of Madhya Pradesh with Special assistance from MoTA, Govt. of India

Baigachak area of Dindori district was known for malaria endemicity. Most of the Baiga dominated villages are located in difficult terrain in forested areas with poor accessibility to health facility coupled with social problems such as illiteracy, poverty, superstitious beliefs and practices that make malaria control a difficult task for the programme. The societal barriers were so rigid that malaria control interventions by the National Vector Borne Disease Control Programme (NVBDCP) were not accepted by the community particularly the vulnerable tribal group Baigas. The present study was undertaken with the main objective to design and establish a need based IEC strategy and make intervention of the same in the Baiga tribal dominated villages using local human resources such as, village children/students/unemployed youths as health educators and motivators and evaluate the effectiveness of the impact. The IEC mainly focuses on the preventive aspects of malaria including proper utilization of intervention by the NVBDCP, generate a demand for health services.

In total 47 Baiga dominated villages located in three blocks viz., Bajag, Samnapur and Karanjia were considered for the study. A total of 42 schools including 22 middle, 11 higher school and 9 higher secondary schools were enrolled. Three field units were established in these three blocks to facilitate the training and monitoring of the study activities.

The staff recruited for the study included one field coordinator, three block monitors and one local youth as facilitator for each of the 47 study villages. These staff were paid honorarium on monthly basis. Besides, 235 local school going children in the standard VIII to XII (five student in each of the 47 villages) were enrolled in the study.

The staff and the enrolled students were trained on survey techniques, on various aspects of malaria and tools of communication by organizing various types of workshop in 12 contact locations in the study area for 82 days. For training, services of an NGO: i-Land

Informatics Ltd (also known as Bangla Natak Dot Com), Kolkata specialized in IEC activities were taken. After completion of the training, the youths/ students team were ready to be considered as agent of change and it is only through them the communication mechanism for control of malaria was established in the study villages. IEC campaign slide shows through projector were organized in the enrolled schools. IEC was uniformly implemented in all the villages and finally evaluated through endline survey conducted during March 2014.

Short term evaluation of the IEC intervention effect reveals that awareness to malaria improved by 23% within four months of initiation of the activities. It was 34% among the non-Baigas compared to 15% among the Baigas. Based on baseline survey (Dec 2011-Feb 2012) and the end-line survey (2014) the awareness to malaria was found to have improved from 53% to 92%. The increase among the non-Baigas was 58.4% to 93.2% and among the Baigas it was 49.2% to 91.1%. The perception on transmission of malaria had increased from 78.3% to 88.5%, while various misconception had declined during the period (Fig. 4.1.1).

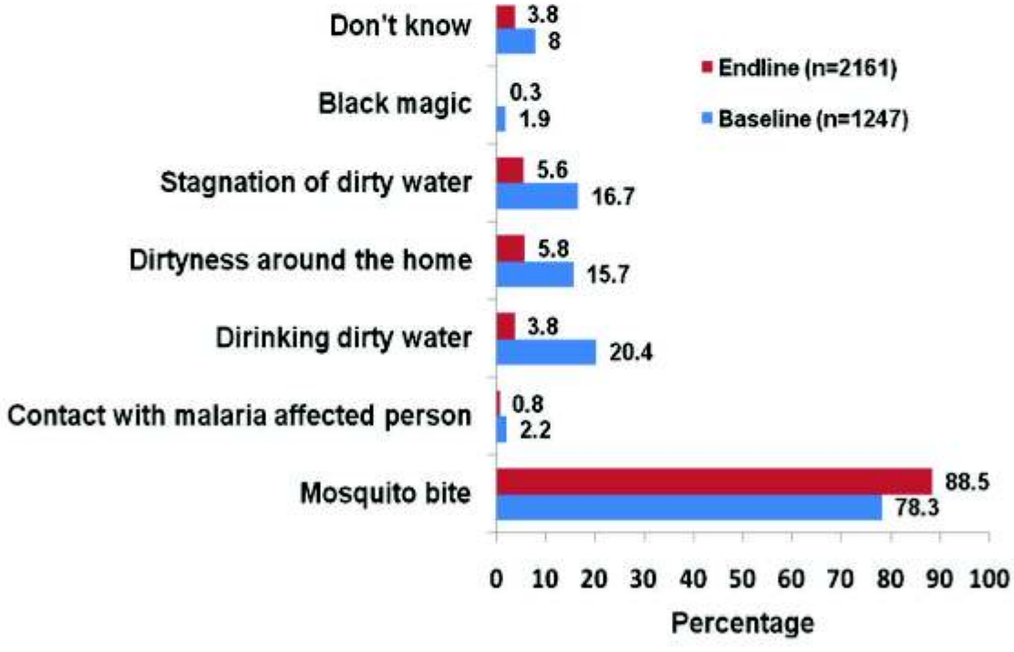


Figure 4.1.1: Perception on transmission of malaria (Multiple responses)

The perception on blood test to identify malaria infection has risen from 77.3% to 92.5%. The perception on proper use of drugs for malaria was also improved. The understanding that drugs for malaria should not be consumed in empty stomach has risen from 77.1% to 94%. The 1st choice of treatment preference for fever had improved

considerably for Govt health facilities from 14.3% to 40.1%, for private medical practitioner from 17.3% to 33.9% and ASHA/malaria workers from 5.4% to 10%. While substantial reduction in preference for treatment seeking from traditional healer (herbal/ faith healer) was recorded-51.8% to 10.7% and medication directly from medicine shops- 10.8% to 3.6%. The actual utilization of health services for fever during 3 months preceding the survey was recorded. It was observed that the reported fever had reduced from 61.3% to 27% and utilization of health services had improved from 85.5% to 90%. There is considerable improvement in the utilization of health services from Govt health posts from 15.2% to 40.7% and from malaria/ ASHA workers from 9.7% to 15%. At the same time there was remarkable decline in utilization of services from traditional healer- 29% to 5.3% (Table 4.1.1 & 2) The reason for non availing of any treatments were economic constrain, inaccessible location of health posts, not satisfied with services and medicines provided at Govt health posts and many had perception that fever gets cured automatically and does not need any special treatment.

Further attempt was made to understand their perception on breeding places of mosquitoes. In baseline survey, 32.6% mentioned stagnant water as breeding place and it had increased to 78.5% during endline survey. While the misconceptions that mosquitoes breed in mire, in dung had reduced considerably. The use of bed net to prevent against mosquitoes bites had improved from 38.8% to 88.2%.

To conclude, the present study was instrumental in generating proper knowledge on malaria and its preventive aspects. Further the strategy had helped to improve better utilization of health services and facilitate the penetration of frontline workers in the village to deliver the services. Another study by NIRTH, Jabalpur in the same area revealed that the SPR after 2012 had reduced by 50%. This sharp drop in malaria in this endemic area is the joint effort of the interventional studies of NIRTH and programme initiatives. But the present study also acts as an effective model of government and non government partnership and can be replicated in other tribal areas with necessary modifications for prevention and management of the burden of malaria.

Table 4.1.1. Utilization of health services for fever during three months preceding the survey

	Baseline	Endline
Suffered from fever	1440 (61.3%)	637 (27%)
Availed treatment	1231 (85.5%)	573 (90%)

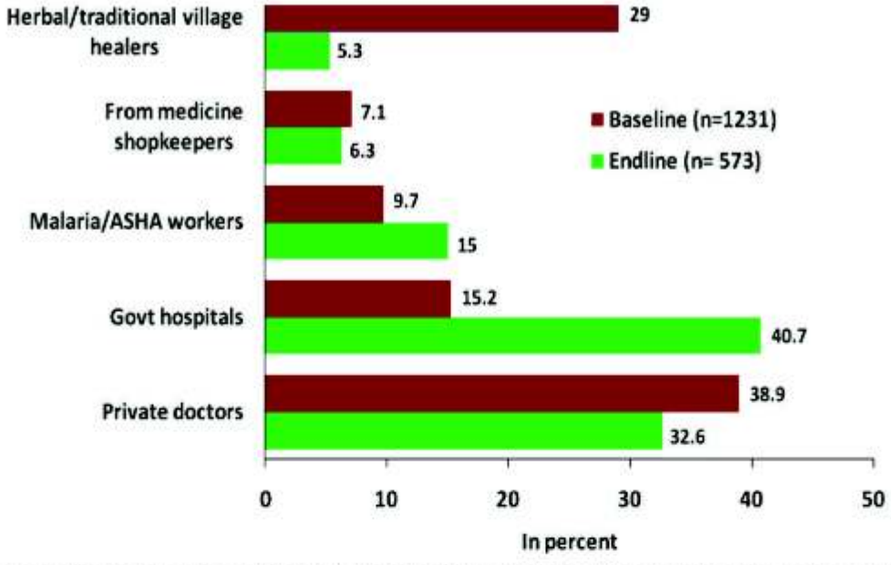


Figure 4.1.2: Source of treatment for fever during three months preceding the survey (Multiple responses)

4.2 IMPACT ASSESSMENT OF AN INTERVENTION PACKAGE TO IMPROVE MATERNAL AND CHILD HEALTH SERVICES AMONG PRIMITIVE BAIGA TRIBE OF DINDORI DISTRICT IN MADHYA PRADESH

Principal Investigator	:	Dr. Dinesh Kumar
Status	:	Ongoing
Funding	:	ICMR, New Delhi

The present study is undertaken to increase awareness on MCH issues in tribal population for proper utilization the health care services including pregnancy care and institutional delivery and evaluated the effect of intervention. The study is being carried out among Baiga tribe of Dindori District in Madhya Pradesh. The research design is a case control study with the sample of 500 ever married women. The study is being undertaken in two phases- IEC intervention to generate the awareness and impact evaluation survey to measure the effectiveness of intervention. The IEC intervention (phase-I) has been completed. Implementation of IEC activities have been completed in each intervention villages (12 villages) during the intervention phase. Various components of IEC outline as sensitization at public places, training to Anganwari worker, ASHA and other volunteers; formulation of village level committee, slogan writing work, displaying banners, distribution of pamphlets, health education camps etc. were done. The group and interpersonal communication also conducted among women. The impact evaluation survey (phase-II) is

carrying out in both study and control villages (24 villages) which are equally designed. The total populations 2081 of 452 households were surveyed in 20 villages (10 villages from each group). A total of 466 (238 from intervention and 228 from control villages) ever married women interviewed on utilization of MCH services during pregnancy and their knowledge on such services. The information was collected maintaining utmost privacy as per the convenience of the respondents after taking their written consent. Information on maternal and child care was collected from ever married women aged 15-49 years who had a live birth in the last three years. For women who delivered more than one live births, the data refer to the most recent birth only.

Preliminary findings show that the average sizes of household was 4.6. About 86% of the families are nuclear and 63% lived in single room. More than half of the women were engaged in agricultural pursuit (58.1%). Three-fourth of the women were illiterate. The average age of interviewed women was 25 years. Out of 293 women who were found eligible for antenatal care, 234 (79.9%) women had taken antenatal checkups from hospitals and peripheral health post during the pregnancy. Antenatal checkups were higher (86.5%) in intervention villages as compared to control villages (72.3%) and the difference was found to be statistically significant ($Z=3.024$, $p<0.05$). Majority of the first antenatal checkups were taken in the first trimester among women in intervention villages while it was second trimester in control villages. The consumption of iron and folic acid (IFA) tablets and tetanus toxoid (T.T) immunization among women was also observed higher 92.4% and 89.8% correspondingly in intervention villages (Table 4.2.1). In the studied villages, out of 261 women, 59.8% women gave birth at home and 40.2% women gave birth in health institutions. The child birth occurred at health institutions were found higher (44.4%) in intervention villages as compared to control villages (35.9%). The children immunized with BCG (94.4%), DPT (96.8%) and OPV (96.0%) and Measles (61.1%) in intervention villages were higher than those in control villages. Vitamin A supplements was also found higher (54%) in intervention villages compared to those in control (34.5%). Overall 84.5% of women knew maternal and child health care services in intervention villages and 40.4% women in control villages ($Z=10.8$, $p<0.05$). The study is in progress.

Table 4.2.1: Antenatal care coverage (Based on Impact Evaluation Survey)

S. No	Pregnancy Care	Intervention villages n1=156	Control villages n2=137	Total n=293	Improve ment
		Women (%)	Women (%)		
1.	ANC checkup	135(86.5%)	99(72.3%)	234(79.9%)	+14.2%
2.	Consumption of IFA	144(92.4%)	113(82.5%)	258(88.1%)	+9.9%
3.	T.T vaccination	141(90.4%)	122(89.1%)	263(89.8)	+1.3%

5. NEW INITIATIVES

MODEL RURAL HEALTH RESEARCH UNIT (MRHRU), DATIA, MP

Model Rural Health Research Unit has been sanctioned by Department of Health Research (DHR), Government of India at Badoni, District Datia, M.P. on 9th July 2014. The MOU between Government of Madhya Pradesh and DHR has also been signed for establishment of MRHRU in MP. The Government of Madhya Pradesh has allotted land of 620 sq. mt. in the campus of PHC, Badoni, Datia. Award of civil work to CPWD, Gwalior is in process. Recruitment of the core staff (contractual) as per the list provided for MRHRU is being undertaken after completing necessary formalities. Research Advisory Committee (RAC) has been constituted.

MODEL RURAL HEALTH RESEARCH UNIT (MRHRU), BILASPUR, CG

After the MOU was signed land has been allotted for construction of the MRHRU at Sendri Bilaspur. Two meetings were held with the state health authorities on 24/4/15 and 17/8/15. Three rooms have been allotted at the urban clinic, Gandhi Chowk, Bilaspur. Naya Raipur. For construction of MRHRU building, Chhattisgarh Medical Service Corporation Limited, (CGMSC Ltd) a Govt. of Chhattisgarh undertaking unit has agreed in principal to construct the building. The communication in this regard is in progress. Concept research proposals have been approved in the pre SAC meeting of the NIRTH. Formation of Research Advisory Committee (RAC) of MRHRU is under process.

ESTIMATE THE BURDEN OF TB AMONG THE TRIBAL POPULATION AND DEVELOP AN INNOVATIVE HEALTH SYSTEM MODEL TO STRENGTHEN TB CONTROL IN THE TRIBAL AREAS

Though TB is a major public health problem in the country, information on the TB situation amongst the tribal population is limited. In view of this, a study has been planned to generate community-based primary data on tuberculosis prevalence amongst the tribal population in the country and the challenges in access to health care services and the factors that influence their health care seeking behaviour.

This study is a part of the national level multi-centric ICMR task force study on tuberculosis under tribal sub-plan. The study is just initiated.

6. REGULAR ACTIVITIES

6.1 TRIBAL HEALTH RESEARCH UNIT

A: EPIDEMIOLOGICAL SITUATION OF MALARIA IN JAGDALPUR DISTRICT OF CHHATTISGARH

Principal Investigator	:	Dr. Neeru Singh
Duration of the study	:	5 years
Funding	:	ICMR

A total of 10261 patients were screened for malaria from Government Maharani Medical College Hospital, Jagdalpur, among them 729 patients were found to be positive (SPR= 7.1%) with 85% of *P. falciparum.* Overall, 59 cerebral malaria (CM), 134 severe malaria (SM) were found with 19 deaths. This is the site where all four species of malaria are found i.e. *P. falciparum*, *P. vivax*, *P. malariae* and *P. ovale* (Fig.6.1.1). Molecular studies revealed the presence of both *P. ovale wallikeri* and *P. ovale curtisi* (Fig.6.1.2).

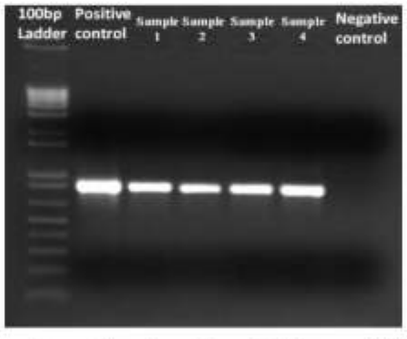


Figure 6.1.1: Gel picture showing showing the PCR amplification of *Plasmodium ovale* lane 1 100 bp ladder lane 2 positive control lane 3-6 samples and lane 7 negatie control

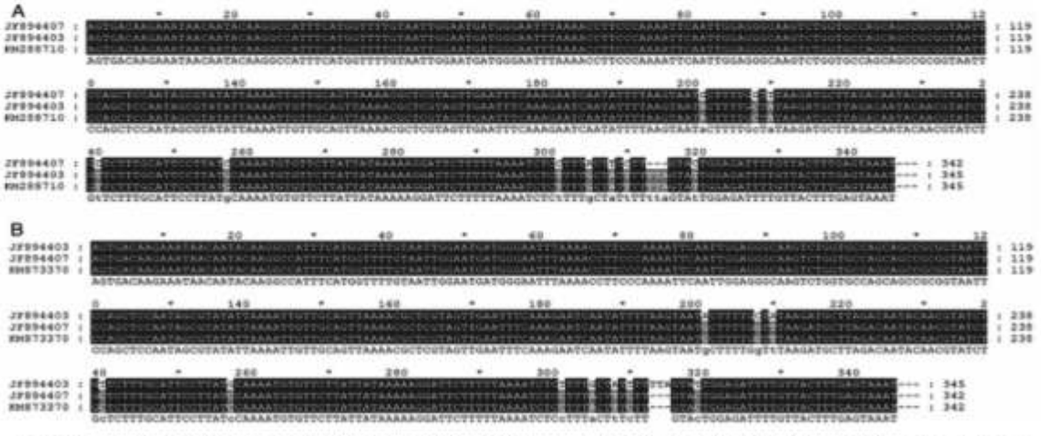


Figure 6.1.2: Showing the nucleotide alignment of *Plasmodium ovale curtisi* and *Plasmodium ovale wallikeri*

B: ASSOCIATION BETWEEN SICKLE CELL & MALARIA IN THE JAGDALPUR DISTRICT, CHHATTISGARH

A study was carried out to find out the association between malaria and sickle cell at Maharani Medical College & Hospital, Jagdalpur, Bastar, Chhattisgarh. A total of 1857 patients were screened for sickle cell trait and disease during this year. Overall the prevalence of sickle cell carrier (AS) and sickle cell disease (SS) were 13.0% and 1.9% respectively. Out of 1857, 378 (20.4%) patients were found positive for malaria. The prevalence of sickle cell carrier and sickle cell disease among malaria patients were 5.3% and 0.5%. The corresponding values among non-malaria (n=1479) patients were 14.9% and 2.4%, respectively. Further mean malaria parasite density was lower in sickle cell trait patient than non-sickler patient.

Sickle cell unit at Maharani Medical College & Hospital

Maharani Medical College & Hospital

Sample collection from patients

Blood sample processing

Blood microscopy

6.2 INTERMEDIATE REFERENCE LABORATORY (TUBERCULOSIS)

Being an Intermediate Reference Laboratory for TB, specimens from various districts are received for diagnosis and follow up. Laboratory is providing prompt diagnosis by Gene Xpert to many districts of the state. This year 2328 specimens were tested by Gene Xpert, of which 1540 were positive for *M.tuberculosis* and 198 were resistant to Rifampicin. Laboratory also processed 1369 samples for culture.

Gene Xpert

6.3 STATE REFERENCE LABORATORY (HIV) & ICTC

Total of 64 ICTC's and 30 blood banks are linked to the State Reference Laboratory (HIV) for External Quality Assurance. This year total of 1391 specimens were tested under the scheme. The laboratory is pursuing discordant samples and takes action on it. This activity is under National AIDS Control Program.

In the ICTC, total of 1213 individuals were tested for HIV, of which 164 (13.5%) were positive for HIV antibodies.

The laboratory also participated in HIV Sentinel Surveillance Program of NACO during January to March 2015 whereby more than 7000 specimens were tested for HIV. Major achievement of the laboratory this year was getting accreditation by NABL.

6.4 MORBIDITY PROFILE OF SICKLE CELL DISEASE IN CENTRAL INDIA

Sickle cell disease (SCD) is a monogenic haemoglobin disorder that results in anemia. Painful crisis and bacterial infections are common in SCD children and responsible for early

mortality. The environmental, psychological and socio-economical factors influence the clinical presentations. The institute's clinic in NSBC medical college studies the clinical and hematological profile of sickle cell disease patients to develop strategies for management and prevention of the SCD.

The patients identified having sickle cell disease were registered in sickle cell clinic for detail clinical assessment and follow up. The clinical history, clinical findings and various investigations were recorded in structural proforma and they are advised for regular visits to clinic.

This year, 70 sickle cell disease patients were registered belonging to Anooppur, Damoh, Dindori, Jabalpur, Katni, Mandla, Narsingpur, Seoni and Sidhi districts. Male and female were in equal proportion. About 14% of patients were in the age group of above 15 years. Majority (47%) of the patients belonged to Scheduled caste communities (mainly Ahirwar, Chadar, Jharia and Mehra) and 20% were from tribal communities (Gond and Pradhan). Eleven percent had history of multiple blood transfusions. About 60% of the patients had onset of the disease before 3 years of age followed by 3-6 yrs age (20%). Fever (98.6%), pallor (95.7%), joint pains (91.4%), Icterus (88.6%) and fatigue (75.7%) were major sign and symptoms observed in these patients. Splenomegaly was observed in majority (70%) of the patients. Since inception, a total of 846 SCD patients have been registered in the SCD Clinic. Till March 2015, a total of 452 SCD patients regularly visited for routine follow-up. The clinical severity was observed to be decreased in 77% of patients. A total of 109 registered SCD patients deceased up to March 2015 and their mean age at death was 13.6 8.6.

6.5 NATIONAL NUTRITIONAL MONITORING BUREAU, MP UNIT

In the year 2014-2015 NNMB continued the project titled “Assessment of diet and nutritional status of urban population and prevalence of determinants of hypertension, diabetes and dyslipidemia among adults in NNMB states”. The objective is to assess diet and nutritional status of urban population, prevalence and determinants of obesity, hypertension, Type–2 diabetes mellitus and dyslipidemia among adults more than 18 years of age. During the year 2014-2015, 15 wards in Dewas city and 15 wards in Jabalpur city and 05 wards of Murena city have been covered. From these wards about 1680 households were covered for clinical, anthropometry and diet survey. About 3459 blood samples were collected for blood sugar examination and 1190 blood samples for lipid profiles examination. Bioelectrical Impedance Analysis (BIA) was done among 3300 targeted households.

6.6 HUMAN RESOURCE DEVELOPMENT

Students' enrollment under the scientists for Ph.D Work

Guide	No. of Scholars	Thesis submitted	Awarded	University
Dr. Neeru Singh	4	1	1	Rani Durgawati Vishwavidyalaya, Jabalpur
Dr. Neeru Singh	2	-	-	Rajiv Gandhi Proudyogiki Vishwavidyalay, Bhopal
Dr. Neeru Singh	1	-	-	Symbiosis University, Pune
Dr. K.B.Saha	3	-	-	Rani Durgawati Vishwavidyalaya, Jabalpur
Dr. Pradip Barde	2	-	-	Rani Durgawati Vishwavidyalaya, Jabalpur
Dr. S. Rajasubramaniam	1	-	-	Andhra University, Visakhapatnam

Besides, 10 students from various universities/ colleges have completed their M.Sc dissertation work under guidance of the scientists.

6.7 LIBRARY

The library of centre continues to cater the documentation and information needs of the scientists, staff and students of the centre as well as other institutes like NSCB Medical College, Veterinary College, Home Science College, Rani Durgawati Vishwavidyalaya etc. It also extends services to research personnel from other Universities/Institutes.

Library is equipped with modern furniture, air-conditioners, compactors and display racks for display of latest arrivals, i.e. books and periodicals for its readers. The objective of this e-resource is to provide/retrieve full text of online articles and conduct specific searches relevant to the user from multiple publishers. Library is also a member of E-J Server provided by Total IT Solutions, New Delhi which has access to 595 E-Journals, 313 E-Books. Alert messages regarding new developments and recent arrivals in library are provided through e-mails from time to time. Photocopies of available literature are provided for research use.

The library has the following resources:

New additions **(from 01/04/2014 to 31/03/2015)**	
Books / Journals	335
Subscribed Periodicals 1. International Periodicals 2. Indian Periodicals	 36 20
Total Library Collection	4530
Books	1405
WHO Publications	782
Bound Foreign Journals	1480
Bound Indian Journals	863
MEDLINE CDs	21
Census + Other CDs	07
Census Floppies	60
CDs on Other Subjects	120
Member of Following Consortia -	
ICMR Consortia & Subscribed E-Journals	21
Total IT E_J_Server	E_Journals = 595
Total IT E_J_Server	E_Books = 313
Total IT E_J_Server	Databases = 20

Besides above facilities, Library also provides information regarding various links as below for free open access journals to its users.

Providers	No. of E-Journals
Directory of Open Access Journals http://www.doaj.org/doaj?func=home&uiLanguage=en	**10922** journals **6733** journals searchable at article level **2111381** articles listed
BioMed Central's Open Access Journals http://www.biomedcentral.com/content	**1053** total open access journals listed **144350** articles listed
Free Medical Journals http://www.freemedicaljournals.com/index.htm	**4200** Journals
Bentham Science Publishers http://www.benthamscience.com/open/a-z.htm#A	**300** Journals

Library reading room

6.8 NIRTH PUBLICATIONS

Tribal Health Bulletin

Centre publishes a biannual and bi-lingual Tribal Health Bulletin, a peer reviewed journal on tribal health. This year Vol.21; No 2 and Vol 22; Issue No. 1 & 2 has been published.

6.9 EVALUATIONS OF PROPOSALS AND REPORTS

The scientists of the centre had reviewed online research proposals and reports of undergraduate students (MBBS/BDS) under the ICMR's Short Term Studentship.

6.10 REVIEW OF MANUSCRIPTS FOR SCIENTIFIC JOURNALS

The scientists of the centre are members of review board of various national and international peer reviewed journals, viz. PloS One, Malaria Journal, WHO Bulletin, Journal of Parasitology, Lancet, The Lancer Global Health, Journal of Infectious Diseases, Climateric, Indian Journal of Medical Research, Current Science, Indian Journal of Medical Sciences, Rural and Remote Health, etc.

7. PUBLICATIONS OF RESEARCH PAPERS

In Impact factor journals

1. Adhikari T, Sahu D, Nair S, **Saha KB**, **Sharma RK.** Factors associated with utilization of antenatal care services among tribal women: A study of selected states, Indian J Med Res (Accepted) (**IF 1.396**).
2. Ahmed R, **Singh N**, ter Kuile FO, Bharti PK, Singh PP, Desai M, Udhayakumar V, Terlouw DJ.(2014). Placental infections with histologically confirmed Plasmodium falciparum are associated with adverse birth outcomes in India: a cross-sectional study. Malar J.; 13:232. doi: 10.1186/1475-2875-13-232 (**IF 3.11**).
3. Barde PV, Kori BK, Shukla MK, Bharti PK, Chand G, Kumar G, Ukey MJ, Ali NA, Singh N. (2014). Maiden outbreaks of dengue virus 1 genotype III in rural central India. Epidemiol. Infect. 1-7. doi:10.1017/S0950268814000612 (**IF 2.535**).
4. Barde, PV, Shukla MK, Kori BK, Chand G, Jain L, Varun BM, Dutta D, Baruah K, Singh N., Emergence of dengue in tribal villages of Mandla district Madhya Pradesh, India, Indian J Med Res (Accepted) (**IF 1.396**).
5. Bhat J, VG Rao, Yadav R, Muniyandi M, Sharma RK, Karfarma C, Luke C. Situation of drug resistant tuberculosis in Saharia tribe of central India. Indian J Med Res (Accepted) (**IF 1.396**).
6. Chaturvedi N, Bhandari S, Bharti PK, Basak SK, Singh MP, **Singh N**. Sympatric distribution of Plasmodium ovale curtisi and P. ovale wallikeri in India: implication for the diagnosis of malaria and its control. Trans R Soc Trop Med Hyg. (Accepted) (**IF 1.839**).
7. Gyan Chand, Chaudhary NK, Soan V, Kaushal LS, Sharma RK, Singh N. Transmission dynamics & epidemiology of malaria in two tribal districts in Madhya Pradesh, India. Indian J Med Res. (Accepted) (**IF 1.396**).
8. Jain V, Basak S, Bhandari S, Bharti PK, Thomas T, Singh MP, Singh N. (2014). Burden of complicated malaria in a densely forested Bastar region of Chhattisgarh State (Central India). PLoS One. Dec 22; 9(12):e115266 (**IF 3.23**).
9. Krishna S, Bharti PK, Chandel HS, Ahmad A, Kumar R, Singh PP, et al. Detection of mixed infections with Plasmodium spp. by PCR, India, 2014. Emerg Infect Dis. (Accepted) (**IF 6.75**).
10. Kumar S, Muniyandi M. Tobacco Use and Oral Leukoplakia: Cross-sectional Study among the Gond Tribe in Madhya Pradesh, Asian Pac J Cancer Prev, 16 (4), 1515-1518 (**IF 2.514**).

11. Muniyandi M, Rao VG, Bhat J, Yadav R, Sharma RK, Bhondeley MK. Health literacy on tuberculosis amongst vulnerable segment of population: special reference to Saharia tribe in central India. Indian J Med Res (Accepted) (**IF 1.396**).

12. Muniyandi M, Rao VG, Bhat J, Yadav R. Performance of Revised National Tuberculosis Control Programme (RNTCP) in tribal areas in India. Indian J Med Res (Accepted) (**IF 1.396)**.

13. Pandey SP, **Chandel HS**, Srivastava S, Selvaraj S, Jha MK, Shukla D, Ebensen T, Guzman CA, Saha B. Pegylated bisacycloxypropylcysteine, a diacylated lipopeptide ligand of TLR6, plays a host-protective role against experimental Leishmania major infection. J Immunol. 2014; 193:3632-43 (**IF 4.922**).

14. Patel JC, Lucchi NW, Srivastava P, Lin JT, Sug-Aram R, Aruncharus S, Bharti PK, Shukla MM, Congpuong K, Satimai W, **Singh N**, Udhayakumar V, Meshnick SR. (2014). Field Evaluation of a Real-time Fluorescence Loop Mediated Isothermal Amplification (RealAmp) Assay for the Diagnosis of Malaria in Thailand and India. J Infect Dis. pii: jiu252. PMID: 24795480 (**IF 5.997**).

15. Rao VG, Bhat J, Yadav R, Muniyandi M, Sharma RK, Bhondeley MK. Pulmonary tuberculosis - a health problem amongst Saharia tribe in Madhya Pradesh. Indian J Med Res (Accepted) (**IF 1.396**).

16. Rao VG, Bhat J, Yadav R, Muniyandi M, Bhondeley MK, Sharada MA, Chadha VK, Wares DF. Tobacco smoking: a major risk factor for pulmonary tuberculosis – evidence from a cross-sectional study in central India. Transactions of the Royal Society of Tropical Medicine and Hygiene 2014 Aug; 108(8):474-81. doi: 10.1093/trstmh/tru082. Epub 2014 Jun 26 (**IF 1.839**).

17. Rao VG, Bhat J, Yadav R, Muniyandi M, Bhondeley MK, Wares DF. Yield of pulmonary tuberculosis cases by symptoms: Findings from a community survey in Madhya Pradesh, central India. Indian Journal of Tuberculosis (Accepted) (IF 0.35).

18. Saha KB, Sharma RK, Mishra R, Verma A, Tiwari BK, Singh N. Establishing communication mechanism for malaria prevention in Baiga tribal villages in Baiga Chak area of Dindori district, Madhya Pradesh, Indian J Med Res (Accepted) (**IF 1.396**).

19. Sahu M, Kori BK , Sahare L, **Barde PV.** Respiratory Syncytial Virus in Children with Influenza-like Illness: Study from Madhya Pradesh, Indian Pediatr. (Accepted) (**IF 1.07**).

20. Sharma RK, Singh MP, Saha KB, Bharti PK, Jain V, Singh PP, Silawat N, Patel R, Hussain M, Chand SK, Pandey A, Singh N. Socio-economic & household risk factors of malaria in tribal areas of Madhya Pradesh, Central India, Indian J Med Res (Accepted) (**IF 1.396**).
21. Sharma RK, Thakor HG, Saha KB, Sonal GS, Dhariwal AC, Singh N. Malaria situation in India with special reference to tribal areas, Indian J Med Res (Accepted) (**IF 1.396**).
22. Singh N, Bharti PK, Singh MP, Singh R, Yeboah-Antwi K, Desai M, Udhayakumar V, Muniyandi M, Hamer DH, Wylie BJ. What is the burden of submicroscopic malaria in pregnancy in central India? Pathog Glob Health. 2015 Feb;109(1):30-8 (**IF 1.66**).
23. Singh N, Mishra AK, Chand SK, Bharti PK, Singh MP, Nanda N, Singh OP, Sodagiri K, Udhyakumar V. Relative Abundance and Plasmodium Infection Rates of Malaria Vectors in and around Jabalpur, a Malaria Endemic Region in Madhya Pradesh State, Central India. PLoS One. (Accepted) (**IF 3.23**).
24. Singh N. Understanding poor man's diseases in contemporary perspective. Indian J Med Res (Accepted) (**IF 1.396**).
25. Wylie BJ, Coull BA, Hamer DH, Singh MP, Jack D, Yeboah-Antwi K, Sabin L, **Singh N,** Macleod WB. (2014). Impact of biomass fuels on pregnancy outcomes in central East India. Environ Health. 9;13(1):1. doi: 10.1186/1476-069X-13-1 (**IF 3.37**).

In index journals

1. Barde PV, Shukla MK, Bharti PK, Kori BK, Jatav JK, Singh N. (2014). Co-circulation of dengue virus serotypes with chikungunya virus in Madhya Pradesh, central India. WHO South-East Asia Journal of Public Health; 3 (1) doi: 10.4103/2224-3151.115828
2. Kumar Surendra, Kumar Dinesh, Soan V, Pandey Maya, Muniyandi M. Survey of tobacco chewing and smoking habits among disadvantaged population: Special reference to Gond tribes, Central India. Indian J of Med Sci (Accepted).
3. Singh N, Sharma RK. (2014) Improving diagnosis and treatment of uncomplicated malaria. Lancet Glob Health; 2(6):e304-5. doi: 10.1016/S2214-109X(14)70222-0.
4. Singh N, Shukla MM, Chand G, Barde PV, Singh MP. (2014). Vector-borne diseases in central India, with reference to malaria, filaria, dengue and chikungunya. WHO South-East Asia Journal of Public Health; 3 (1) doi: 10.4103/2224-3151.115828.
5. Mourya DT, Kumar R, Barde PV, Gokhale MD, Yadav PD. Genetic variation in Aedes aegypti mosquito populations along the West cost of India and their susceptibility to insecticides and dengue virus. Indian Journal of App. Res. (Accepted).

6. Bisai S, Saha KB, Sharma RK, Muniyandi M, Singh N. 2014. An overview of tribal population in India, Tribal Health Bull 20, 103-106.

7. Saha KB, Saha U, Bisai S, Srivastava HC. Behavioural dimensions of reported reproductive tract infection among the tribes: Experience from primitive Lodha tribe of Easter India, Tribal Health Bull vol.22, No.1 & 2 January & July 2015.

8. Kumar D, Goel AK, Verma A. Utilization of antenatal care services by tribal women in Chhattisgarh: Tribal health Bulletin vol.22, No.1 & 2 January & July 2015.

9. Singh MPSS, Gupta RB, Yadav R, Rajasubramaniam S. Study on the prevalence of haemoglobinopathies and G6PD deficiency among scheduled tribe and scheduled caste populations of chindwara district, Madhya Pradesh. Tribal Health Bulletin vol.22, No.1 & 2 January & July 2015.

Publication in book

Tapas Chakma, Gregor von Medeazza, Sanjay Singh, Pradip Meshram. "High Fluoride Burden on women of Seoni District in Madhya Pradesh" as a chapter in a book titled: Gender Issues in Water Sanitation Programmes. Edited by Aidan A Cronin, Pradip K Mehta and Anjal Prakash. Published by Sage India Private Ltd, New Delhi.

8. CONFERENCE/MEETING/WORKSHOP/ SYMPOSIUM/AWARDS

8.1 CONFERENCE, MEETING, WORKSHOP, SYMPOSIUM ATTENDED

Dr. Neeru Singh

- Attended Meeting of Informal Expert Consultation organized by SEARO on Vector Borne Diseases at WHO SEARO, New Delhi on 7th-8th April 2014.
- Attended Scientific Advisory Group Meeting in ICMR, New Delhi from April 15th-16th April 2014.
- Attended 3rd meeting of the Expert Committee on Tribal Health in MoHFW, GOI, New Delhi on 24th April 2014.
- Attended Regional Consultation on Development of Malaria Global Technical Strategy, meeting at WHO, SEARO, New Delhi from 28th-30th April 2014.
- Participated meeting of the GMS TES network in Hanoi, Viet Nam, at World Health Organization Regional Office for South East Asia (SEARO) in collaboration with the Regional Office for Western Pacific (WPRO) during 20st-21st May 2014.
- Attended 3rd meeting of the Expert Committee on Tribal Health, MoHFW arranged in MoHFW, New Delhi on 9th June 2014.
- Attended meeting on Independent appraisal of Lymphatic filariasis (LF) elimination programme in India at NVBDCP, New Delhi on 20th June 2014.
- Attended Investigators meeting on insecticides in ICMR, New Delhi on 24th June 2014.
- Attended MDA Bhopal meeting of - First visit of Independent Appraisal team for LF elimination programme in India 2014 at MDA, Bhopal from 1st-3rd July 2014.
- Attended meeting with Chief Secretary, Health Commissioner, DHS of Raipur Chhattisgarh regarding establishment of RMRCT at Raipur C.G.on 4th July 2014.
- Attended 59th meeting of CCM under the chairmanship of Sh Lov Verma, Secretary (HFW) and chair CCM at Nirman Bhawan, New Delhi on 18th July 2014.
- Attended Second visit of Independent Appraisal of LF elimination team in Jabera, Damoh, M.P. on 22nd-23rd July 2014.
- Attended Joint ICMR-ICAR Project Review Committee Meeting on "Tribal PRC" at ICMR Hqrs, New Delhi on 24th July 2014.

- Attended sensitization workshop on Ethical Issues in Biomedical and Health Research including Social aspects Related to Vulnerable Tribal Population at RMRCT, Jabalpur on 25th - 26th July 2014.
- Attended meeting with Health Comissioner Bhopal regading Establishment of Model Rural Health Research Units (MRHRUs) in the State at Satupra Bhavan Bhopal on 30th July 2014.
- Attended meeting with Principal Secretary, Health Commissioner, Director Health Services & Director NRHM, Raipur, regarding establishment of Model Rural Health Research Unit (MRHRU) on 4th-5th August 2014.
- Attended 60th meeting of CCM India, held at Nirman Bhawan, New Delhi on 12th August 2014.
- Attended meeting for Ministry of Tribals, Economic Division, Coordination Committee for monitoring, planning and progress of the schemes/programmes for overall development of Scheduled Tribes at Shastri Bhawan, New Delhi on 28th August 2014.
- Attended Ministry of Health and Family Welfare, meeting to discuss the action plan for achieving the goal of elimination of Lymphatic Filariasis at Nirman Bhawan, New Delhi on 12th September 2014.
- Delivered Session/Lecture on "Tackling Health Issues of the PVTGs" at National Institute of Rural Development, Hyderabad on 24th September 2014.
- Attended 25th National Congress of Parastiology meeting at CDRI, Lucknow from 16th-18th October 2014.
- Attended Multi-Stakeholder Consultation - National Tribal Human Development Report; Raipur, Chhattisgarh, organized by United Nations Development Programme (UNDP) in partnership with the Ministry of Tribal Affairs (MoTA) and the Planning Commission, at Raipur, Chhattisgarh. held on 17th-19th October 2014.
- Attended meeting with Secretary, DHR & DG, ICMR, Dr. Y.K Gupta, AIIMS and Dr. Leonard Ortega, Regional Director, WHO SEARO and ICGEB at New Delhi from 4th - 7th November 2014.
- Attended 8th National Conference of Indian Academy of Tropical Parasitology & International Symposiumat RMRC, Dibrugarh from 20th-22nd November 2014.
- Attended Inter country meeting to address the Threat of Artemisinin Resistance in South Asia, New Delhi, at WHO, SEARO, Delhi from 9th-11th December 2014.

- Invited speaker at 102 Indian Science Congress in Mumbai on 5th January 2015.
- Attended meeting with Secretary MOTA, Secretary DHR & DG ICMR for Stake holder consultation at ICMR, New Delhi and Health Commissioner Bhopal regarding project of MRHRU at Bhopal MP. on 7th January 2015.
- Attended Stakeholder consultation meeting on Tribal Health Issues with MOTA at ICMR Hqrs, New Delhi on 7th January 2015.
- Attended 62nd CCM meeting in New Delhi on 23rd February 2015.
- Attended as Guest of Honor on 11th Neuroendoscopy Fellowship Programme from at Hotel Satya Ashoka, Jabalpur from 9th -15th March 2015.

Dr. V.G. Rao

- Attended workshop on Tribal Implementation protocol preparation for GFATM New Funding Model entitled "Targeted Intervention to Expand and Strengthen TB Control in Tribal Populations and Strengthening Implementation and Operational Research under the Revised National Tuberculosis Control Programme, India" at Central TB Division, Govt. of India, New Delhi during 25th-28th June 2014.

Dr. Tapas Chakma

- Attended the 3rd expert committee meeting on Tribal Health, held at Nirman Bhawan, New Delhi, Organised by Ministry of Health on 9th June 2014.
- Attended meeting of "Technical Committee on Fluorosis National Programme" held at Nirman Bhawan, organized by Ministry of Health, New Delhi, on 9th July 2014.
- Attended "Fluorosis Task Force meeting" held at New Delhi,, organized by ICMR, on 4th August 2014.
- Attended meeting on "ICMR Forum on Tribal Health" held at ICMR on 7th January 2015 held at ICMR HQ New Delhi.
- Attended review meeting in MRHRU, held at ICMR New Delhi, on 17th February 2015.
- Attended workshop on "Stake holders on Tribal Health" organized by UNDP and ministry of Tribal Affairs ,Govt. of India, held at Raipur, Chhattisgarh on 17th to 18th October 2014.

Dr. Gyan Chand

- Attended one day workshop on Independent appraisal of lymphatic filariasis elimination at NVBDCP, Delhi, organized by VCRC Pudducherry 20th June 2014.

elimination at NVBDCP, Delhi, organized by VCRC Pudducherry 20th June 2014.

- Attended three days workshop on Independent appraisal of elimination of lymphatic filariasis at Bhopal organized by VCRC Pudducherry from 3rd-5th July 2014.
- Expert Member in Independent appraisal of ELF team, co-ordinated by VCRC Pudducherry and evaluated the LF elimination activities in Damoh and Panna district (15th -25th July 2014). In Damoh Transmission Assessment survey (TAS) was proposed but district was not found qualified for TAS because of high filarial antigenemia prevalence in young children.
- Attended National Seminar on Management of important insect and insect pest in India organized by Entomological society of central India, JNKVV Jabalpur and delivered a lecture on "Dengue, its control and management" on 16th August 2014.

Dr. K. B. Saha

- Delivered an invited lecture as resource person on research methodology at M.Phil and Pre-PhD course work at Department of Economics, Rani Durgavati Vishwavidyalaya on 18th December 2014.
- Attended Stakeholders meeting and Tribal Health Research Forum meeting held at ICMR, New Delhi, organized jointly by ICMR and Min. of Tribal Affairs, GoI on 7th Januray 2015.
- Attended Seminar on Understanding Internet Protocol Version-6 (IPv6), held at BSNL main Office, Jabalpur and Organized by Dept of Telecommunication Network & Technology (NT) unit, Bhopal on 23rd January 2015.

Dr. Jyothi Bhat

- Attended training on "Sequence characterization of untypeable Rotavirus strains" during 7th to 11th April 2014 at CDC, Atlanta.
- Attended workshop on "Evaluation of New TB Diagnosis" during 8th to 12th January 2015 at NIRT, Chennai .

Dr.S. Rajasubramaniam

- Imparted hands on training and carried out evaluation of newly established sickle cell clinic in Districts Shahdol on 18th June 2014 and Mandsaur on 9th September 2014.
- Participated in the 7th National Thalassemia Conference, New Delhi. 19th-20th, April 2014.
- Participated in 5th annual Tribal Health Research forum meeting on 8th Aug 2014 at NIRT, Chennai.

- Delivered lecture in Hemoglobinopathies, in the Department of Gynaeclogy at NSCB Medical college, Jabalpur in September 2014.
- Participated in the Quarterly meeting Tribal Health Research Forum at RMRC, Belgaum on 5th April 2014.
- Participated in Stake holder consultation on Tribal Health Issues, ICMR Head quarters, New Delhi, 7th January 2015.


Hands on training and evaluation of newly established sickle cell clinic in District Shahdol and Mandsaur

Dr. Surendra Kumar

- Attended in Public Information Campaign (PIC) Katni and Raisen district, dated 10th -19th December 2014.
- Delivered a lecture/ presentation on topic entitled "Clinical management on filariasis", on 20th January 2015 at NIRTH Jabalpur.

Dr. R K Sharma

- Attended seminar on understanding internat prroyocol Ver 6 orginised by BSNL Jabalpur 23rd January 2015.

8.2 AWARD / RECOGNITIONS / MEMBERS OF DISTINGUISHED BODIES

Dr. Neeru Singh

- Nominated as Guest Editor for publishing Special Issue on tribal health, Indian Journal of Medical Research.

Dr. V.G.Rao

- Received ICMR Prize for Biomedical Research conducted in underdeveloped areas for the year 2012.

Dr. Surendra Kumar

- First Prize Awarded in Public Information Campaign (PIC), organized by Press Information Department, Government of India at Katni District, Madhya Pradesh during 10th-12th December 2014.

Receiving prize on behalf of NIRTH

8.3 CONFERENCE /MEETING/WORKSHOP/SYMPOSIUM ORGANIZED

Workshop on 'Tuberculosis: Tribal perspective' - 21st - 22nd June 2014

The workshop was organized in collaboration with the Central TB Division (Ministry of Health and Family Welfare, Government of India), International Union Against Tuberculosis and Lung Disease (The Union), and Indian Council of Medical Research (ICMR). Dr. V.G.Rao was the Organizing Secretary of the workshop. This was the first of its kind since it focused on the distinct themes of burden of tuberculosis among tribal population, risk factors for TB and perspectives on the mechanisms required for control of tuberculosis in tribal areas. The event brought together researchers, policy makers, administrators, program officials, international organizations, NGOs, academicians, universities, medical colleges etc. who shared their experiences and findings of the work done amongst tribal population.

In all there were eleven sessions, two panel discussions and eighteen individual presentations. The tribal action plan of RNTCP was also presented and discussed during the workshop. All the presentations were followed by useful and elaborate discussions. The participants also discussed about their experiences and views on strengthening TB control particularly in tribal areas.

Inaugural function

Director, NIRTH addressing the gathering

Organizing Secretary briefing the audience

Experts attending the workshop.

Panel discussion chaired by Dr. Soumya Swaminathan, Secretary, DHR & DG, ICMR

Training on Filariasis

Four Filaria microscopy training of 5 days each has been organized in January, February and March 2015. Fifty nine technicians from 11 known Filaria endemic districts were trained for filaria microscopy.

Workshops on Ethics

- Two workshops were organized on "Ethical issues in Biomedical Research" on 25th-26th July 2014 and on Good clinical practices on 1st October 2014.
- Workshop was also conducted on Preparation of Ethics guidelines for tribal health research on 30th January 2015.

National workshop for preparation of ethics guideline on 30th January 2015

Organized "Swachh Bharat Abhiyan" awareness drive at Baigachak area, Dindori during 15th-18th October 2014

During the drive Dr. K.B.Saha explained the process of hand wash and usefulness of maintaining hygiene to school children. Further, Dr. A. Verma supervised the cleaning drive in some areas with clogged drains.

Scabies eradication training among School children in February 2014

Dr. T. Chakma organized health camps and explained the process of transmission of scabies particularly in Ashram schools and suggested the required treatment.

9. EVENTS

Stakeholder Consultation on Tribal Health Issues held on 07th January, 2015 at ICMR Hqrs, New Delhi

Haemoglobinipathies training in central India on 19th May 2014

Training of health professionals for identification and management of Sickle cell disease in Madhya Pradesh on 13th June 2014

Distribution of Certificates by the Director

Workshop on Tuberculosis: Tribal Perspective held on 21st and 22nd June 2014

Visit of Dr. A. P. Dash, regarding project entitled 'Bionomics of malaria vectors and their sibling species and to establish their role in malaria transmission in Chhattisgarh, India' on 27th June 2014

Training Programme on Tuberculosis held on 18th July 2014

Dr. Y.K.Gupta, Prof & Head, Dept of Pharmacology, AIIMS, New Delhi speaking in the workshop on Ethical Issues in Biomedical and Health Research including Social aspects related to Vulnerable Tribal Population held on 25th - 26th July 2014

Dr. Nandini K. Kumar, Former Scientist 'F', ICMR Chairing the valedictory session of the Bioethics workshop held on 25th-26th July 2014

Celebration of Independence day on 15th August 2014 and Republic Day on 26th January 2015. Director, NIRTH, hoisted the national flag

Training programme of investigators for Malaria Endline survey on 8th September 2014

Hindi Fortnight celebrated in the institute from 14th to 28th September 2014

Distribution of Prizes during Hindi fortnight celebrations

Dr. Shashank Porwal, Associate Professor, AIIMS Bhopal visited the institute for exploring the possibility of collaborative work on 18th September 2014

Pre SAC meeting on 29th September 2014

One day workshop on 'Good Clinical Practice' on 1st October 2014

Swachh Bharat Abhiyan on 2nd October 2014

Oath taking ceremony of Satarkata Jagrookta Saptaha on 27th October 2014

Oath taking ceremony of Rashtriya Ekta Diwas on 31st October 2014

Training workshop on antimalarial combination on 13th November 2014

27th SAC Meeting at NIRTH Jabalpur on 3rd-4th December 2014

Meeting with Dr. Dorina, WHO SEARO from 5th-8th December 2014 at NIRTH Jabalpur

A meeting was held on 31st January 2015 with Dr. Anju Sharma, Scientist 'F' and Editor IJMR, ICMR, New Delhi regarding scientific publications

Visit of Jabalpur Collector, SP and CMO at the institute on 13th February 2015

First Foundation Day of NIRTH was Celebrated on 2nd March 2015

Malaria and other vector borne disease training programme for Lab Technicians was held on 3rd March 2015

Training Programme on Filariasis conducted on 16th March 2015

Training programmes of Medical Officers on Malaria and other Vector Borne Diseases on 17th-19th March 2015

Five day training workshop for state health workers on Filariasis microscopy during 23rd to 27th February and 16th to 20th March 2015

The construction of Animal House is in progress

Newly constructed Main Gate of the NIRTH campus

10. APPENDICES

10.1 PROMOTION/RETIREMENT/TRANSFER

Promotion

- Smt. Nazia Anwar Ali was promoted as Technical Assistant on 3rd Feb 2015.
- Shri Jagdish Prasad Mishra was promoted as Technician C on 3rd Feb 2015.
- Dr. Vikas G.Rao was promoted as Scientist 'G' w.e.f. 1st September 2012.
- Dr. Gyan Chand and Dr.Kalyan B. Saha were promoted as Scientist 'E' w.e.f. 1st September 2012.
- Dr. Jyothi Bhat was promoted as Scientist 'E' w.e.f. 1st September 2014.
- Dr. Surendra Kumar and Dr. Dinesh Kumar were promoted as Scientist 'D' w.e.f. 1st September 2012.
- Dr. Ravendra K. Sharma, Dr. Pradip Barde and Dr. Praveen Bharti were promoted as Scientist 'D' w.e.f. 1st September 2014.

Retirement

- Dr. R.S. Balgir, Scientist 'F' retired on superannuation on 31st August 2014.
- Shri Rajju Lal Neelkar, Technician C retired on superannuation on 31st October 2014.

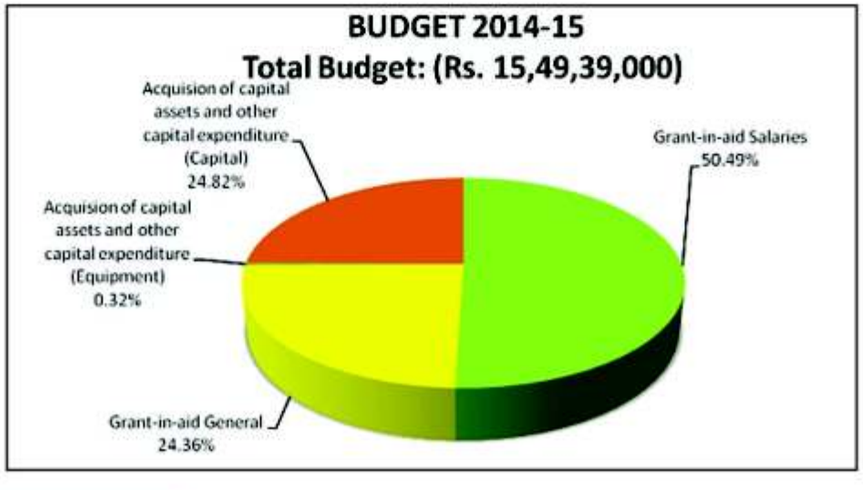
Transfer

- Shri S. Jatavath, Technical Assistant transferred to NIN, Hyderabad on 22nd Dec. 2014.

10.2 FOREIGN VISIT

- Dr. Neeru Singh, Director, NIRTH visited Hanoi, Viet Nam to attend meeting at WHO Regional office for South East Asia (SEARO) in collaboration with WPRO for the GMS TES network during 20th-21st May 2014.

10.3 BUDGET



10.4. COMMITTEES

Scientific Advisory Committee

Lt.Gen.(Dr.) D. Raghunath	Ex-Director General, Armed Forces Medical Services	Chairman
Dr. D.S. Agarwal	Ex-Dean, Maulana Azad Medical College, New Delhi.	Member
Dr. Kiran Katoch	Former Director, National JALMA Institute for Leprosy & other Mycobacterial Diseases, ICMR, Agra.	Member
Dr. P. L. Joshi	Former Director, National Vector Borne Disease Control Programme, New Delhi.	VBDSF Expert
Dr. Sarala K. Subbarao	Emeritus Scientist, ICMR, New Delhi.	VBDSF Expert
Dr. B. K. Tyagi	Director, Centre for Research in Medical Entomology, Madurai	Member
Dr. G. S. Toteja	Director, Desert Medicine Research Centre, Jodhpur.	Member
Dr. P. Jambulingam	Director, Vector Control Research Centre, Puducherry.	Member
Dr. S.C. Dubey	Ex-Joint Director, HSADL, Bhopal.	Member
Dr. Nikhilesh Chandra	Sr. Reg. Director, ROHFW, Min of H & FW, Bhopal.	Special Invitee
Dr. Sher Singh Kashyotia	Assistant Director, NVBDCP, New Delhi.	NVBDCP representative
Dr. Rooprekha Chauhan	Dean, NSCB Medical College, Jabalpur.	Special invitee
Dr. Manju Rahi	Scientist "E", ICMR, New Delhi	Programme Officer & ICMR Representative
Dr. Neeru Singh	Director, NIRTH, Jabalpur.	Organizing Secretary

Institutional Ethics Committee

Dr. Shashi Khare	Ex-Dean, NSCB Medical College, Jabalpur	Chairperson
Dr. Sharad Jain	Assoc. Prof, NSCB Medical College, Jabalpur	Member
Dr. Rajesh Sharma	Prof. Vetenerary Science, NDVSU, Jabalpur (M.P.)	Member
Dr. Uma Chatterjee Saha	Prof. XIDAS-XIMJ, Jabalpur	Member
Mr. Jamal Akhtar Baig	Director, ENFORCE (NGO), Bhopal	Member
Mr. Sankalp Sanghi	Advocate, High Court of Madhya Pradesh, Jabalpur	Member
Shri Komal Prasad Vishwakarma	Community Leader, Mukunwara, Ghatpipaliya, Jabalpur	Member
Dr. Avaykt Agarwal	Asst. Prof (Pediatrics), NSCB Medical College, Jabalpur	Member
Dr. Riti Seth	Asst. Prof (Microbiology), NSCB Medical College, Jabalpur	Member
Dr. Rajiv Yadav	Scientist 'C', NIRTH, Jabalpur	Member
Dr. Tapas Chakma	Scientist 'F' NIRTH, Jabalpur	Member Secretary

Technical Purchase Committee

Dr. S.S. Rathaour	Ex-HOD, Deptt. of Radiology, NSCB Medical College, Jabalpur	Chairman
Dr. Sushil Kumar	Principal Scientist, DWSR, Jabalpur	Member
Dr. S. Sambath	OIC, Zoological Survey of India, Jabalpur	Member
Dr. Tapas Chakma	Scientist-'F', NIRTH Jabalpur	Member
Dr. Jyothi Bhat	Scientist-'E', NIRTH Jabalpur	Member
Dr. S. Rajasubramaniam	Scientist-'D', NIRTH Jabalpur	Member
Dr. Pradip V. Barde	Scientist-'D', NIRTH Jabalpur	Member
Dr. Praveen Bharti	Scientist-'D', NIRTH Jabalpur	Member
Sh. Gyan Chand Jain	Admn. Officer, NIRTH Jabalpur	Member
Sh. R.K. Thakur	Section Officer (S), NIRTH Jabalpur	Member Secretary

Institute Local Building Committee – (Capital Works)

Dr. Tapas Chakma	Scientist 'F', NIRTH, Jabalpur	Chairman
Shri A.K.Soni	Retd. S .E., MPSEB, Govt. of M.P., Jabalpur	Member
Shri R.P.Dubey	Ex-E.E., PWD, Govt. of M.P., Jabalpur	Member
Dr. P.V. Barde	Scientist 'D', NIRTH, Jabalpur	Member
Shri Gyan Chand Jain	Admn. Officer, NIRTH, Jabalpur	Member Secretary
Shri Pramod Kumar	Accounts Officer, NIRTH, Jabalpur	Member

Institute Local Building Monitoring Committee – (Capital Works)

Shri Gyan Chand Jain	Admn. Officer, NIRTH, Jabalpur	Member
Shri Pramod Kumar	Accounts Officer, NIRTH, Jabalpur	Member

Dissemination of Information Committee

Dr. Jyothi Bhat	Scientist 'E' NIRTH, Jabalpur	Chairperson
Dr. R. K. Sharma	Scientist 'D' NIRTH, Jabalpur	Member
Dr. Pradip Barde	Scientist 'D' NIRTH, Jabalpur	Member
Dr. Arvind Verma	Technical Assistant-R,NIRTH, Jabalpur	Member
Shri Avinash Dubey	Technician–A ,NIRTH, Jabalpur	Member

Rapid Response Team

Dr. Tapas Chakma,	Scientist 'F' NIRTH, Jabalpur	Chairman
Dr. Jyothi Bhat	Scientist 'E' NIRTH, Jabalpur	Member
Dr. Pradip Barde	Scientist 'D' NIRTH, Jabalpur	Member

Seven Supporting Staff (Technical/others)

Library Committee

Dr. V. G. Rao	Scientist 'G', NIRTH, Jabalpur	Chairman
Dr. K. B. Saha	Scientist 'E', NIRTH, Jabalpur	Member
Dr. Jyothi Bhat	Scientist 'E', NIRTH, Jabalpur	Member
Dr. S. Rajasubramaniam	Scientist 'D', NIRTH, Jabalpur	Member

Dr. Ravendra Sharma	Scientist 'D', NIRTH, Jabalpur	Member
Shri Gyan Chand Jain,	Admn. Officer, NIRTH, Jabalpur	Member
Shri Pramod Kumar	Accounts Officer, NIRTH Jabalpur.	Member
Shri K.V.K. Rao	ALIO, NIRTH Jabalpur.	Member Secretary

Staff Grievance Committee

Dr. V. G. Rao	Scientist 'G', NIRTH, Jabalpur	Chairman
Dr. Dinesh Kumar	Scientist 'D', NIRTH, Jabalpur	Member
Shri Gyan Chand Jain,	Admn. Officer, NIRTH, Jabalpur	Member
Shri Pramod Kumar	Accounts Officer, NIRTH, Jabalpur	Member
One representative of TEWA		Member
Shri R.K.Thakur	Section Officer, NIRTH, Jabalpur	Member

Anti-Sexual Harassment Committee

Dr. Jyothi Bhat	Scientist 'E' NIRTH, Jabalpur	Chairperson
Dr. K. B. Saha	Scientist 'E' NIRTH, Jabalpur	Member
Dr. Ravendra Sharma	Scientist 'D', NIRTH, Jabalpur	Member
Dr. Alpana Abbad	Technical Assistant, NIRTH, Jabalpur	Member
Smt. Nazia Anwar Ali	Technical Assistant, NIRTH, Jabalpur	Member

Annual Report Committee

Dr. K. B. Saha	Scientist 'E' NIRTH, Jabalpur	Chairman
Dr. A.K. Mishra	Scientist 'E' NIRTH, Jabalpur	Member
Dr. Jyothi Bhat	Scientist 'E' NIRTH, Jabalpur	Member
Dr. Pradip Barde	Scientist 'D' NIRTH, Jabalpur	Member
Mr. S. B. Barman	Scientist 'B' NIRTH, Jabalpur	Member
Dr. Jyotirmoy Roy	Technical Officer-A, NIRTH, Jabalpur	Member
Dr. Arvind Verma	Technical Assistant, NIRTH, Jabalpur	Member

10.5 राजभाषा नीति के कार्यान्वयन एवं अनुपालन से संबंधित प्रगति रिपोर्ट

राष्ट्रीय जनजाति स्वास्थ्य अनुसंधान संस्थान (भा0आ0अ0प0), 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. नीरू सिंह, निदेशक	–	अध्यक्ष
2.	डॉ. व्ही0जी0राव, वैज्ञानिक 'जी'	–	सदस्य
3.	श्री ज्ञानचंद जैन, प्रशासनिक अधिकारी	–	सदस्य
4.	श्री प्रमोद कुमार, लेखा अधिकारी	–	सदस्य
5.	श्री द्वारका प्रसाद लोधी, अनुभाग अधिकारी, (स्थापना)	–	सदस्य
6.	श्री राजेन्द्र कुमार ठाकुर, अनुभाग अधिकारी (भंडार)	–	सदस्य
7.	श्री हाकिम सिंह ठाकुर, कनिष्ठ हिंदी अनुवादक	–	सदस्य

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। अभी तक इस समिति की कुल 80 तिमाही बैठकें आयोजित की जा चुकी हैं।

2. हिंदी पत्राचार एवं टिप्पणी–लेखन

प्रतिवेदन अवधि के दौरान इस संस्थान द्वारा 'क' क्षेत्र को मूलतः हिंदी में लगभग 50% 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।

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, 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 यह केन्द्र राजभाषा नियम 10.4 के अंतर्गत अधिसूचित 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, जो एक आशुलिपिक हिंदी आशुलिपि प्रशिक्षण के लिए शेष हैं, उन्हें भी हिंदी शिक्षण योजना, राजभाषा विभाग, जबलपुर को हिंदी आशुलिपि प्रशिक्षण हेतु दो बार नामित किया गया है, परंतु पर्याप्त प्रशिक्षार्थी न होने से उन्हें अगले सत्र में प्रशिक्षण दिए जाने के लिए सूचित किया गया है।

5. विभागीय परीक्षाओं में द्विभाषी प्रश्न–पत्र उपलब्ध कराना

सरकार द्वारा जारी निर्देशों के अनुसार इस संस्थान 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–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 महोदया द्वारा संस्थान के 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।

प्रतिवेदन अवधि के दौरान, राष्ट्रीय जनजाति स्वास्थ्य अनुसंधान संस्थान, जबलपुर में हिंदी–पखवाड़े (14–28 सितम्बर, 2014) के दौरान आयोजित हिंदी प्रतियोगिताओं के विजेताओं को 26–09–2014 को 'राजभाषा पुरस्कार वितरण समारोह' का आयोजन किया गया, जिसमें निदेशक महोदया के द्वारा नीचे दिए विवरण के अनुसार विजेता अधिकारियों व कर्मचारियों को नकद पुरस्कार और प्रमाण–पत्र प्रदान किए गए।

हिंदी प्रतियोगिताओं के विजेता अधिकारी एवं कर्मचारी तथा उन्हें प्रदान किए गए नकद पुरस्कारों की सूची इस प्रकार है :–

क्रम.सं.	प्रतियोगिता	पुरस्कार प्राप्त करने वाले अधि./कर्म.	नकद पुरस्कार
1.	**हिंदी टंकण**		
	प्रथम	श्री नरेन्द्र कुमार झारिया, हिंदी टंकक	रु. 5000/–
	द्वितीय	श्री डी.एन. विश्वकर्मा, अ.श्रे.लि. (NIMR)	रु. 3000/–
	तृतीय	श्री शरद कुमार कोष्टा, अवर श्रेणी लिपिक	रु. 2000/–
	सांत्वना (I)	श्री विश्वनाथ देवांगन, आं.प्रवि.प्रचा. (परियो.)	रु. 1000/–
	सांत्वना (II)	कु. संध्या शर्मा, आशुलिपिक	रु. 1000/–
2.	**हिंदी श्रुतलेखन**		
	प्रथम	श्री जगदीश प्रसाद कोष्टा, क्षे.प्रयोग.परिचा. (NIMR)	रु. 5000/–
	द्वितीय	श्री प्रेमलाल दाहिया, परिचारक (सेवाएं) (NIMR)	रु. 3000/–
	तृतीय	श्री विनय कुमार बाल्मीक, परिचारक (सेवाएं)	रु. 2000/–
	सांत्वना (I)	श्री रविशंकर पटैल, फील्ड वर्कर (परियो.) (NIMR)	रु. 1000/–
	सांत्वना (I)	श्री रविशंकर पटैल, फील्ड वर्कर (परियो.)(NIMR)	रु. 1000/–
	सांत्वना (II)	श्री कामता प्रसाद जायसवाल, परिचारक (सेवाएं) (NIMR)	रु. 1000/–

3. हिंदी टिप्पण एवं प्रारूप–लेखन

प्रथम	श्री रोहित अग्रवाल, सहायक	रु. 5000/–
द्वितीय	कु. संध्या शर्मा, आशुलिपिक	रु. 3000/–
तृतीय	श्री रामकुमार वर्मा, तकनीशियन 'ए' (इंजी.सपोर्ट)	रु. 2000/–
सांत्वना (I)	श्री डी.एन. विश्वकर्मा, अ.श्रे.लि. (NIMR)	रु. 1000/–
सांत्वना (II)	श्री जगदीश प्रसाद मिश्रा, तकनीशियन 'बी'	रु. 1000/–

4. हिंदी निबंध–लेखन (वैज्ञानिक/अधि. वर्ग)

प्रथम	डॉ. नरेन्द्र कुमार चौधरी, तकनीकी अधि. 'ए'	रु. 5000/–
द्वितीय	डॉ. भूपेश कोरी, अनुसंधान वैज्ञानिक (परियो.)	रु. 3000/–
तृतीय	श्री नितीश सिंह परिहार, तक.अधि.(एचआईवी परियो.)	रु. 2000/–
सांत्वना (I)	डॉ. अशोक कुमार मिश्र, वैज्ञानिक 'ई' (NIMR)	रु. 1000/–
सांत्वना (II)	डॉ. दिनेश कुमार, वैज्ञानिक 'सी'	रु. 1000/–

5. हिंदी निबंध–लेखन (कर्मचारी वर्ग)

प्रथम	श्री जगदीश प्रसाद मिश्रा, तकनीशियन 'बी'	रु. 5000/–
द्वितीय	श्रीमती नाजिया अली, तकनीशियन 'सी'	रु. 3000/–
तृतीय	श्री सुबाष चन्द्र मुदुली, निजी सहायक	रु. 2000/–
सांत्वना (I)	श्री प्रदीप कुमार मेश्राम, तकनीकी सहायक (अनुसंधान)	रु. 1000/–
सांत्वना (II)	श्री के. वेणुगोपाल राव, परिचारक (सेवाएं)	रु. 1000/–

6. हिंदी वाद–विवाद (वैज्ञानिक/अधिकारी वर्ग)

प्रथम	डॉ. रविन्द्र कुमार शर्मा, वैज्ञानिक सी'	रु. 5000/–
द्वितीय	डॉ. नरेन्द्र कुमार चौधरी, तकनीकी अधिकारी 'ए'	रु. 3000/–
तृतीय	डॉ. अशोक कुमार मिश्र, वैज्ञानिक 'ई' (NIMR)	रु. 2000/–
सांत्वना (I)	श्री नितीश सिंह परिहार, तक.अधि. (एचआईवी परियो.)	रु. 1000/–
सांत्वना (II)	डॉ. भूपेश कोरी, अनुसंधान वैज्ञानिक (परियो.)	रु. 1000/–

7. हिंदी वाद–विवाद (कर्मचारी वर्ग)

प्रथम	श्री मोहन कुमार शुक्ला, वरिष्ठ अनुसंधान अध्येता (SRF)	रु. 5000/–
द्वितीय	श्री प्रदीप कुमार मेश्राम, तकनीकी सहायक (अनुसंधान)	रु. 3000/–
तृतीय	श्री समर बहादुर सिंह, तकनीकी सहायक (अनुसंधान)	रु. 2000/–
सांत्वना (I)	श्री पवन पटैल, आं.प्रवि.प्रचा. (परियो.)	रु. 1000/–
सांत्वना (II)	श्रीमती फिलोमिना लकड़ा, सहायक	रु. 1000/–

8. हिंदी कविता–पाठ (वैज्ञानिक / अधिकारी वर्ग)

प्रथम	डॉ. नरेन्द्र कुमार चौधरी, तकनीकी अधिकारी 'ए'	रु. 5000 / –
द्वितीय	श्री नितीश सिंह परिहार, तक.अधि.(एचआईवी परियो.)	रु. 3000 / –
तृतीय	डॉ. भूपेश कोरी, अनुसंधान वैज्ञानिक (परियो.)	रु. 2000 / –
सांत्वना (I)	डॉ. अशोक कुमार मिश्र, वैज्ञानिक 'ई'(NIMR)	रु. 1000 / –
सांत्वना (II)	डॉ. एम.एम. शुक्ला, वैज्ञानिक 'ई' (NIMR)	रु. 1000 / –

9. हिंदी कविता–पाठ (कर्मचारी वर्ग)

प्रथम	श्री हीरालाल चौधरी, फील्ड वर्कर (NIMR)	रु. 5000 / –
द्वितीय	श्री एल.एस. कौशल, तकनीकी सहायक	रु. 3000 / –
तृतीय	श्री विपिन कुमार शुक्ला, आं.प्रवि.प्रचा. (परियो.)	रु. 2000 / –
सांत्वना (I)	कु. संध्या शर्मा, आशुलिपिक	रु. 1000 / –
सांत्वना (II)	श्री प्रदीप कुमार मेश्राम, तकनीकी सहायक (अनुसंधान)	रु. 1000 / –

10. स्वरचित हिंदी कविता–पाठ (वैज्ञानिक / अधिकारी वर्ग)

प्रथम	डॉ. नरेन्द्र कुमार चौधरी, तकनीकी अधिकारी 'ए'	रु. 5000 / –
द्वितीय	डॉ. अशोक कुमार मिश्र, वैज्ञानिक 'ई'(NIMR)	रु. 3000 / –
तृतीय	श्री नितीश सिंह परिहार, तक.अधि. (एचआईवी परियो.)	रु. 2000 / –
सांत्वना (I)	डॉ. भूपेश कोरी, अनुसंधान वैज्ञानिक (परियो.)	रु. 1000 / –
सांत्वना (II)	श्री व्ही. सोन, तकनीकी अधिकारी 'ए'	रु. 1000 / –

11. स्वरचित हिंदी कविता–पाठ (कर्मचारी वर्ग)

प्रथम	श्री मोहन कुमार शुक्ला, वरिष्ठ अनुसंधान अध्येता (SRF)	रु. 5000 / –
द्वितीय	श्री राजेन्द्र पसाद गोंड़, परिचारक (सेवाएं)	रु. 3000 / –
तृतीय	श्रीमती नाजिया अली, तकनीशियन 'सी'	रु. 2000 / –
सांत्वना (I)	श्रीमती रीना सोम, तकनीशियन 'सी'	रु. 1000 / –
सांत्वना (II)	श्री दीपचंद खातरकर, तकनीशियन 'बी'	रु. 1000 / –

योग– रु. 1,32,000 / –

(कुल राशि – एक लाख बत्तीस हजार रुपए मात्र)

10.6 STAFF LIST

Director & Scientist 'G'

Dr. Neeru Singh, MSc, PhD, FNASc

Scientist Cadre

Dr. R S. Balgir, MSc, PhD	Scientist 'F'	Bio-Chemistry & Immunology	Retired on 31-Aug-2014
Dr. V. G. Rao, MBBS, MD	Scientist 'G'	Community Medicine	
Dr. Tapas Chakma, MBBS, MAE	Scientist 'F'	Community Medicine	
Dr. K. B. Saha, MSc, MPS, PhD, PGDBE	Scientist 'E'	Demography	
Dr. Gyan Chand, MSc, PhD	Scientist 'E'	Entomology	
Dr. Jyothi Bhat, MBBS, MD	Scientist 'E'	Microbiology	
Dr. S. Rajasubramaniam, MSc, PhD	Scientist 'D'	Biotechnology	
Dr. Dinesh Kumar, MSc, PhD	Scientist 'D'	Statistics	
Dr. Surendra Kumar, MBBS	Scientist 'D'	Community Medicine	
Dr. Ravendra K. Sharma, MPhil, PhD	Scientist 'D'	Statistics	
Dr. Pradip V. Barde, MSc, PhD	Scientist 'D'	Microbiology	
Dr. Praveen K. Bharti, MSc, PhD	Scientist 'D'	Biotechnology	
Dr. Rajiv Yadav, MBBS, MD	Scientist 'C'	Genetics	
Dr. M. Muniyandi, MA, MPS, M.Phil, PhD	Scientist 'B'	Health Economics	Transferred to NIRT Chennai on 01-Apr-2015
Dr. Vidhan Jain, MA, MSc, PhD	Scientist 'B'	Microbiology	
Sh. S.B.Barman, MSc, M.Phil.	Scientist 'B'	Social & Behavioural Sciences	Joined on 15-Apr-2015

Administration

Shri Gyan Chand Jain, BA	Administrative Officer
Shri Pramod Kumar, M.Com, M.B.A.(Fin.)	Accounts Officer
Shri D.P. Lodhi, MA, LLB, PGDCA	Section Officer
Shri Rajendra K. Thakur, B.Sc.	Section Officer

Library

Shri K.V.K. Rao, M.Com, B. Lib	Asst. Lib & Inf. Officer
Shri S.N. Singh, MA, M. Lib	Library Information Asst.

Technical Cadre

Shri V. Soan, MSc	Technical Officer A	
Dr. N. K. Choudhary, MA, PhD	Technical Officer A	
Dr. R. C. Mishra, MA, PhD	Technical Officer A	
Dr. Jyotirmoy Roy, MA, PhD	Technical Officer A	
Dr. D. C. Jain, MSc, PhD	Technical Assistant (R)	Retaired on 31 -Dec-2015

Shri P. Vinay Rao, MSc	Technical Assistant (R)	
Shri Arvind Kavishwar, MSc, PGDCA	Technical Assistant (R)	
Dr. Arvind Verma, MSc, PhD	Technical Assistant (R)	
Dr. Bal Krishna Tiwari, MA, PhD	Technical Assistant (R)	
Dr. Alpana Abbad, MA, PhD	Technical Assistant (R)	
Shri Praval Srivastava, MA	Technical Assistant (R)	
Shri Ajay K. Goel, MA	Technical Assi stant (R)	
Shri Samar Bahadur Singh, MA, LLB	Technical Assistant (R)	Retaired on 31 -Dec-2015
Shri M.P.S.S. Singh, MSc	Technical Assistant (R)	
Dr. Manoj K. Bhondeley, MSc, MPhil, PhD	Technical Assistant (R)	
Shri Mohan Lal Kori, MA	Technical Assistant (R)	
Shri Pradeep K. Meshram, MA, MPhil	Technical Assistant (R)	Expired on 17 -Jan-2015
Smt. Maya Pandey, MA	Technical Assistant (R)	
Shri Rajendra K. Minocha, HSC, DMLT	Technical Assistant	
Shri Chandan Karforma, B.Sc.,DMLT	Technical Assistant	
Shri Surendra Jatavath	Technical Assistant	Transferred to NIN Hyderabad on 22 -Dec-2014
Shri Subash Godbole, M.Sc.,DMLT	Technical Assistant	
Shri L.S.Kaushal, B.Sc., CMLT	Technical Assistant	
Shri Mohan Lal Patel, HSC	Technical Assistant	
Shri Ashok Kumar Gupta, BA	Technical Assistant	Promoted on 20 -Apr-2015
Smt. Nazia Anwar Ali, M.Sc., DMLT	Technical Assistant	Promoted on 03 -Feb-2015
Shri Vivek Kumar Chouksey, B.Sc.,DMLT, PGDCA	Technical Assistant	Joined on 07-May-2015
Shri Prakash Tiwari, M.Sc., PGDCA	Technical Assistant	Joined on 11-May-2015
Smt Reena Shome	Technician C	
Shri Anil Gwal	Technician C	
Shri Lalit K. Sahare	Technician C	
Smt. Canina Luke	Technician C	
Shri Mahendra J. Ukey	Technician C	
Shri Purshottam Patel	Technician C	
Shri Rajju Lal Neelkar	Technician C	Retired on 31 -Oct-2014
Shri C.P.Vishwakarma	Technician C	
Dr. Shiv Kumar Singh	Technician C	
Shri Subash Kumbhare	Technician C	
Shri Prakash Shrivastava	Technician C	
Shri Dhan Singh Thakur	Technician C	
Shri Jagdish P. Mish ra	Technician C	Promoted on 03 -Feb-2015
Shri Vijay Kachhi	Technician C	Promoted on 20 -Apr-2015
Shri Santosh Kumar Patkar	Technician C	Joined on 23 -Apr-2015
Shri Hari Barman	Technician C	Joined on 24 -Apr-2015
Shri Neelu Mishra	Technician C	Joined on 08 -May-2015
Shri Rameshwar P. Khedekar	Technician C	Joined on 12 -May-2015

Shri Pradeep Kumar Tiwari	Technician C	Joined on 12 -May-2015
Shri B.S.Patel	Technician B	
Shri D.C. Khatarkar	Technician B	
Shri D.K.Mishra	Technician B	Promoted on 22-Apr-2015
Shri S.R.Mishra	Technician B	Promoted on 27-Apr-2015
Shri Rakesh Kumar Jaiswal	Technician A	
Shri M.P.Tiwari	Technician A	
Shri Ghanshyam Ahirwar	Technician A	
Shri Ajesh Kumar Dubey	Technician A	
Shri Prakash Sangle	Technician A	Joined on 22-Apr-2015
Shri Shashi Bhushan Dubey	Technician A	Joined on 23 -Apr-2015
Shri Avinash Dubey	Technician A	
Shri P.K.Namdev	Technician A (Engg. Support)	
Shri Ram K. Verma	Technician A (Engg. Support)	

Administrative Staff

Shri Subash C. Muduli	Personal Assistant	
Ms Sandhya Sharma	Stenographer	
Shri Hakim S. Thakur	Junior Hindi Translator	
Smt. Pushpa Umate	Assistant	V.R.S. on 06-Apr-2015
Shri Rohit Agrawal	Assistant	
Smt Filomina Lakra	Assistant	
Shri P.K. Shrivastava	Assistant	
Shri Raj Kumar Handa	Assistant	
Shri Bhagwani Prasad Kol	Upper Division Clerk	
Shri Raghubir Prasad	Upper Division Clerk	
Shri Baisakhu Lal Urreti	Upper Division Clerk	
Shri Pramod Kumar Choubey	Lower Division Clerk	
Shri Sharad Kumar Kosta	Lower Division Clerk	
Shri Narendra Kumar Jharia	Hindi Typist	
Shri Ram Narayan Saini	Driver	Expired on 07-May-2015
Shri Ashok Kumar Saini	Driver	
Shri Paramjeet Singh	Driver	
Shri Ramesh Kumar Gond	Driver	
Shri Gendalal	Driver	
Shri Ravindra Kumar Katraha	Driver	

Multi Tasking Staff

Shri Sheikh Saleem	Attendant (Services)
Shri Suresh Kumar Burman	Attendant (Services)
Shri Sukhlal Vishwakarma	Attendant (Services)
Shri Rajendra Prasad Gond	Attendant (Services)
Shri Jagdish Prasad Thakur	Attendant (Services)
Smt Shashi Prabha Mishra	Attendant (Services)
Shri Shamshad Ali Ansari	Attendant (Services)
Shri Vinay Kumar Balmik	Attendant (Services)
Shri Santosh Kumar Haldkar	Attendant (Services)
Shri Ganga Bahadur	Attendant (Services)
Shri Laxman Prasad	Attendant (Services)
Shri Baidraj Kachhi	Attendant (Services)
Shri Madan Singh Maravi	Attendant (Services)
Shri Preetam Lal Gond	Attendant (Services)
Shri Suresh Kumar Pareha	Attendant (Services)
Shri K. Venugopal Rao	Attendant (Services)
Shri Ramesh Kumar Ahirwar	Attendant (Services)
Shri Suresh Kumar Jaiswal	Attendant (Services)
Shri Umesh Prasad Gautam	Attendant (Services)
Shri Anil Kumar Vinodia	Attendant (Services)
Shri Malikhan Singh	Attendant (Services)
Shri Ajay Kumar Soni	Attendant (Services)
Shri Santosh Kumar Kol	Attendant (Services)
Shri Prem Singh Gond	Attendant (Services)
Shri Ram Kumar Mehra	Attendant (Services)
Shri Summat Singh Maravi	Attendant (Services)
Shri Munna Lal	Attendant (Services)
Shri Arakh Chand Malik	Attendant (Services)
Shri Vishnu Prasad	Attendant (Services)
Shri Sone Lal Dumar	Attendant (Services)
Shri Pappu Lal Dumar	Attendant (Services)

National Nutritional Monitoring Bureau (MP Unit)

Dr. Rakesh Babu, MBBS	ARS	
Shri Gajanan Dhore	Social Worker	
Shri Santosh Maravi	Attendant (Services)	
Shri Sushil Patel	Driver	

Integrated Counseling & Testing Centre & SRL (HIV)

Shri Nitish Parihar, MSc	Technical Officer	
Smt Shraddha Shrivastava	Counselor	
Shri Manish Vishwakarma	Lab. Techn ician	Resigned on 07 June 2015
Ku. Pinky Kanojiya	Lab. Technician	

Tribal Health Research Unit (THRU)

Dr. Samiran Bisai, M.Sc., Ph.D., PGDPHN	Consultant	Resigned on 31-08-2015
Shri Pragyasheel Dongre	Proj.Asstt/R.A.	Joined on 03-Nov-2015
Shri Mithun Kumar	Data Entry Operator	

10.7 NIRTH IN NEWS

Newsdesk

India tackles lymphatic filariasis

The Indian Government has instigated an ambitious plan to tackle this disabling disease with a combination of a high-profile campaign and mass drug administration. Sanjeet Bagchi reports.

Lymphatic filariasis affects nearly 120 million people in the tropical and subtropical regions of the world and 66% of the people at risk of the disease live in WHO's Southeast Asia region—a region that encompasses 11 countries, including India. However, India, a country with about 500 million people at risk of lymphatic filariasis, had intended to eliminate the disease by the end of 2005, according to India's National Health Policy 2002.

To eliminate lymphatic filariasis, a disabling and disfiguring neglected tropic disease also known as elephantiasis, the Indian Government has launched a substantial public health initiative in which they will provide free prophylactic drugs to more than 400 million people in the country. The initiative will include providing an annual dose of preventive drugs (diethylcarbamazine and albendazole) to entire communities in the form of mass drug administration.

To support this initiative, India's Ministry of Health and Family Welfare in collaboration with the Global Network for Neglected Tropical Diseases (an initiative of the Washington-based Sabin Vaccine Institute) has launched a public service advertising campaign called Hathipaon Mukt Bharat (Filaria Free India). The campaign will include a film entitled Gaat (serpents) in which a patient with lymphatic filariasis is shown delivering the message that the disease "can happen to anyone", that people should participate in the mass drug administration initiative, and that they should take the preventive medicines (which are free and safe) to make India filaria free. The campaign will support the Indian Government's mass drug administration initiative, which will be implemented in 17 states, four of which (Uttar Pradesh, Bihar, Jharkhand, and West Bengal) carry nearly two-thirds of the country's lymphatic filariasis burden. The online version of the campaign was launched on Jan 9, 2005; however, it is now being disseminated across the country through electronic and print media.

"We are thrilled that India is taking greater steps to eliminate [lymphatic filariasis], which causes extreme pain and debilitates all those infected", Kelly Toves (Sabin Vaccine Institute, Washington, DC, USA) told TLO, adding, "as you may know, India accounts for 40% of the global burden of [lymphatic filariasis]". In a press release, C K Mishra (Ministry of Health and Family Welfare, India) said, "we are employing a wide range of new communication tactics and partnerships that will help us encourage all people at risk from this disease to consume their free dose of medicine during our annual mass drug administrations".

Experts in public health and tropical medicine have welcomed the initiative by the Indian government. As Neeru Singh (National Institute for Research in Tribal Health, Madhya Pradesh, India) pointed out, in view of the large proportion of the global disease burden in India, any global elimination plan needs to have India at its centre. Vivek Ramakar (John A Burns School of Medicine Honolulu, HI, USA) told TLO that this is a much-needed, long-awaited development in India. "This proposed public health campaign is the right approach", he said. Nathlay Kumar (Tulane University, LA, USA) commented, "it is an ambitious task and it will require a long-term political, financial and public health commitment".

According to Singh, the provision the two drugs annually to the entire population living in filariasis endemic areas, provided coverage and compliance remain optimum, should make it possible to eliminate the disease from India. She told Lancet Infect Dis, "for successful elimination [of lymphatic filariasis], coverage and compliance of the drugs should be up scaled by proper, regular, and repeated training of [the] service providers and drug distributors". "School children and teachers should be made aware regarding the disease manifestation, its transmission, and prevention so that they can disseminate the message in the society", she added. Singh suggested that instead of the 1-day mass drug administration campaign approach (once a year), it should be made a week-long campaign so that coverage and compliance could increase. She also urged that surveys should be done in areas without mass drug administration, so that any new foci of infection, if found, could be properly tackled.

Kumar pointed out that lymphatic filariasis, represented in India by infections caused by Wuchereria bancrofti and Brugia malayi, is a vector-borne disease, and because of the poor sanitary conditions in large parts of the country, mosquitoes breed easily and transmit the parasites to people living in communities with poor sanitations. Insecticide resistance in the vectors is also an important factor, he said. In that regard, Kumar applauded an initiative by Indian Prime Minister Narendra Modi called Clean India, in which improvement of cleanliness and sanitary conditions in India have been strongly emphasised. "I really hope that it materialises into real action rather than just a 'political slogan'", he said.

Sanjeet Bagchi

www.thelancet.com/infection Vol 15, April 2015

Clip 1: The Lanset published in it's Newsdesk the views of Dr. Neeru Singh, Director NIRTH regarding Global elimination of Lymphatic filariasis with special focus on India situation

indiatoday.intoday.in

indiatoday in

NEWS TV MAG

MAIL TODAY
Read by those who matter

Over 200 jawans battling malaria in Chhattisgarh's Maoist zone

The Maoist zone of Bastar is witnessing a substantial increase in malaria cases among the security forces that are fighting the Left-wing extremists. And to make matters worse, the anti-malarial medicines that have been prescribed are not effective.

The battle-weary security forces in strife-torn Bastar region in south Chhattisgarh are not just fighting against the outlawed CPI (Maoist), they are also up against the mosquitoes. And, till now, they are losing the battle.

The Maoist zone of Bastar is witnessing a substantial increase in malaria cases among the security forces that are fighting the Left-wing extremists. And to make matters worse, the anti-malarial medicines that have been prescribed are not effective, sources in the security

Clip 2: The institute organized Endline Household survey on Malaria in Madhya Pradesh as well as 8 districts in insurgency prone area of Chhattisgarh. These activities were highlighted and appreciated by the digital media.

ये डरते नहीं, खोज लेते हैं फ्लू के वायरस को

खुद के स्वास्थ्य की परवाह किए बिना रोज 16-16 घंटे जांच कर रहे हैं तकनीशियन, परिवार को रहती है सलामती की चिंता

घंटों रहते हैं वायरस के बीच

Clip 3: The Influenza A H1N1 pdm09 diagnosis provided by the institute was appreciated by local print media.

The Hitavada
JABALPUR ■ Thursday ■ March 5 ■ 2015

CityLine 3

Foundation Day of National Institute of Research in Tribal Health celebrated

Staff Reporter

Vice Chancellor MPMSU Dr Lokwani, DG, ICMR Dr V M Katoch,Dr Neeru Singh and others during foundation day celebration.

Foundation Day of Regional Medical Research Institute celebrated

किया विश्वसनीय अनुसंधान

जबलपुर। राष्ट्रीय जनजाति स्वास्थ्य अनुसंधान संस्थान द्वारा स्थापना दिवस समारोह मनाया गया। संस्थान की निदेशक नीरू सिंह ने संस्थान की गतिविधियों व उपलब्धियों की जानकारी देने के साथ ही भविष्य की जरूरतों के बारे में बताया। इस मौके पर एम्स के मेडीसिन विभाग के अध्यक्ष डॉ. एसके शर्मा ने 'फाउंडेशन डे लेक्चर' दिया। इसमें देश की विभिन्न जनजातियों को बीमारियों के जोखिम, विभिन्न रोगों व उनकी रोकथाम के बारे में बताया। इस अवसर पर मध्य आयुर्विज्ञान विश्वविद्यालय के कुलपति प्रो. डीपी लोकवानी ने कहा कि चिकित्सा, स्वास्थ्य व अनुसंधान के क्षेत्र में संस्थान ने विपरीत स्थितियों के बावजूद विश्वसनीयता कायम की है। मुख्य अतिथि स्वास्थ्य अनुसंधान विभाग व महानिदेशक आईसीएमआर तथा पूर्व सचिव डॉ. व्हीएम कटोच ने अनुसंधान व सहयोगी संस्थाओं को अधिक प्रभावी व सुदृढ़ बनाने पर जोर दिया।

ग्रामीण जीवन को करीब से जाना

जबलपुर। जीएस कॉलेज की राष्ट्रीय सेवा योजना इकाई द्वारा ग्राम गौनी में 7 दिवसीय शिविर आयोजित किया गया। छात्रों ने स्वास्थ्य शिविर, पशु चिकित्सा शिविर, स्वच्छता अभियान, स्वाइन फ्लू, बेटी बचाओ अभियान के प्रति ग्रामीणों को जागरूक किया। इसके साथ ही ग्रामीण संस्कृति को करीब से जाना। शिविर में पहुंचे सभी छात्रों को प्रतीक चिन्ह व प्रमाण पत्र प्रदान किए गए। इस अवसर पर कार्यक्रम अधिकारी डॉ. सुनीता देशपांडे, डॉ. अमर रजक का सहयोग रहा।

Clip 4: Foundation day celebration of the institute on 1st March was highlighted by in print medias

The Hitavada 21 - 5/7/2014

Health Deptt team to visit dengue-affected village in Narsighpur distt

Staff Reporter

HITAVADA IMPACT

जैसे भी हो डेंगू और स्वाइन फ्लू को रोको: बिसेन

Clip 5: Institute's initiatives and activities during dengue outbreak investigations in Madhya Pradesh are brought to the public by the media

The Hitavada

line

EXCLUSIVE FOR THE READERS IN JABALPUR

...SDAY, MARCH 11, 2015

HITAVADA 11-3-15

ICMR project to check status of HRP Protein in individual's blood

■ By R S Parmar

INDIAN Council of Medical Research (ICMR) is starting a project to check the status of HRP Protein in the people in eight states after recent reports came to fore that Rapid Malaria Test Kit available in the market has failed to check malaria in a person, who is without HRP Protein in his blood.

Union Health Department has given the project to ICMR Jabalpur Centre to conduct sample survey among the population of eight states, including Assam, Madhya Pradesh, Gujarat, Andhra Pradesh, etc. to check the status of HRP Protein. Within six months of the status compiling report, the conclusion of status of HRP Protein in the blood would be sent to Union Health Department for final assessment whether to continue the use of Rapid Malaria Test Kit (RMTK) in field.

Union Health Department had taken decision to check the status of HRP Protein after the recent American Health Department report confirming that Rapid Malaria Diagnostic Kits have failed to check malaria in 30 percent patients found without HRP Protein in the blood during pathology test conducted.

Senior Scientist, ICMR, on condition of anonymity, informed that many questions were raised on the credibility of results of RMKT after it was confirmed that this kit failed to check the status of Malaria in 30 percent patients without HRP Protein. He said RMKT is easy to handle, carry and gives quick results; health workers can easily trace malaria in remote areas, where it is impossible to set up any lab. But conventional methods of doing culture test in the conventional

(Contd on page 4)

ICMR project to check status of HRP...

pathology labs have some merits over the RMTK.

Blood sample collected from the people of eight states would be tested for presence of HRP Protein in the blood at ICMR Pathology Lab, Jabalpur. On this basis, compiled report would be sent to Union Government, to take further action.

Clip 6: News regarding research on HRP of malaria parasite in news paper

'छात्रों मे अनुसंधान के प्रति रुचि बढ़ाएं'

जबलपुर। मेडिकल छात्रों में अनुसंधान के प्रति रुचि बढ़ाने के लिए निरंतर प्रयास किए जाने चाहिए। इस कार्य में क्षेत्रीय जनजाति आयुर्विज्ञान अनुसंधान केन्द्र महत्वपूर्ण भूमिका निभा सकता है। यह बात केन्द्र के स्थापना दिवस पर शुक्रवार को आईसीएमआर परिसर में आयोजित समारोह को सम्बोधित करते हुए मेडिकल यूनिवर्सिटी के कुलपति डॉ. डीपी लोकवानी ने कही। डॉ. लोकवानी ने कहा कि चिकित्सा अनुसंधान के क्षेत्र में आध्यात्मिक विचारधारा को भी समाहित किया जाना चाहिए। आईसीएमआर नई दिल्ली से आए वरिष्ठ उपमहानिदेशक प्रशासन टीएस जवाहर ने कहा कि अनुसंधान का फायदा ज्यादा से ज्यादा लोगों तक पहुंचाने का प्रयास होना चाहिए। राष्ट्रीय प्रतिरक्षा रुधिरविज्ञान संस्थान मुंबई से आए डॉ. केके घोष द्वारा हीमोग्लोबिनोपैथीज के बारे में जानकारी दी गई। केन्द्र की निदेशक डॉ. नीरू सिंह ने कहा कि केन्द्र में भविष्य में एनीमल हाउस एवं इन्फेक्शियस डिसीज लैब की स्थापना भी की जाएगी।

Clip 7: The lecture on promotion of students interest for quality research is highlighted by the media

CityLine 3

SYMPOSIUM ON 'SWINE FLUE CAUSES, AND ITS REDRESS' HELD

Clip 8: Dr. Neeru Singh addressed the symposium on "Swine flu" held at RDVV, Jabalpur

आरएमआरसीटी में आधुनिक जीन एक्सपर्ट मशीन लगी, एक साथ मिलेंगी चार रिपोर्ट

ढाई घंटे में पता चलेगा, टीबी है या नहीं

Clip 9: News regarding early and reliable diagnosis of TB at the centre was highlighted in the local print media

Paintings on Tribal Life and Culture

Paintings by Dr. R.C. Mishra, Technical Officer 'A'

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