

# Other Scientific Activities & Service

## Other Scientific Studies

1. Effect of Annual single dose of DEC in filariasis transmission
2. Filariasis OPD (Capital Hospital, Bhubaneswar)
3. Referral Services in diagnosis of Haemoglobinopathy and sickle cell disorder
4. Laboratory investigations of outbreaks of jaundice and fever
5. Diarrhoeal Outbreak Study:

## Human Resource Development

1. SRF/JRF Joined under Ph.D Programme:
2. M.Sc. Dissertation program:
3. Short Term Training Program:
4. Foreign Visit:

## Contribution towards National/ State level Health Program

1. A Mid Term Assessment of Mass Drug (DEC) Administration against Filariasis in Orissa
2. Malaria Monitoring
3. Swasthya Mela (Health Camp)





# Other Scientific Activities & Services

Investigators:

Dr. N. Mahapatra,

Dr. R.K. Hazra,

Dr.S.K.Parida,

Mr. N.S.Marai

Mr. H.K. Triparthy.

## Other Scientific Studies.

### 1. Effect of Annual single dose of DEC in filariasis transmission

DEC is highly effective microfilaricidal drug. Use of this drugs at community level results in reduction of human infection and consequently transmission. In some areas due to high vector density, effective reduction in transmission does not occur. Choudwar town of Cuttack district though a semi urban area is highly endemic for filariasis. Single annual dosages of DEC mass drug distribution was done in September 2004 & November 2005 this will be again instituted during November 2006. Baseline data on vector density, infection rate, infectivity rate and infective stage of parasite per mosquito (13 load) were collected before and after the mass drug distribution in baseline period of 2004. The month-wise vector density (PMHD) of *Culex quinquefasciatus* is presented in fig-1. It varies from 18.3 to 58.6 in different months of the year. Figure 3 depicts the infection and infectivity rate of *Cx. quinquefasciatus*. It clearly indicates that soon after the drug distribution no infective larvae could be detected upto three months (October to December). However ,from the month of January,2005 infection in the vector appeared. There was 45.7% and 26% reduction in infection and infectivity rate compared to the base line data. Still the infection could be detected upto March. The second single dosage of DEC mass drug distribution was done on November 2005. The study was continued upto August 2006 and the vector density data, infection and infectivity rate data are depicted in fig 2 and 4.

Fig. 1

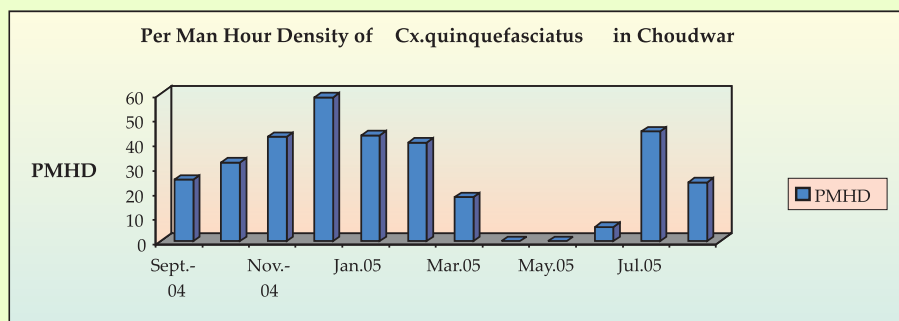
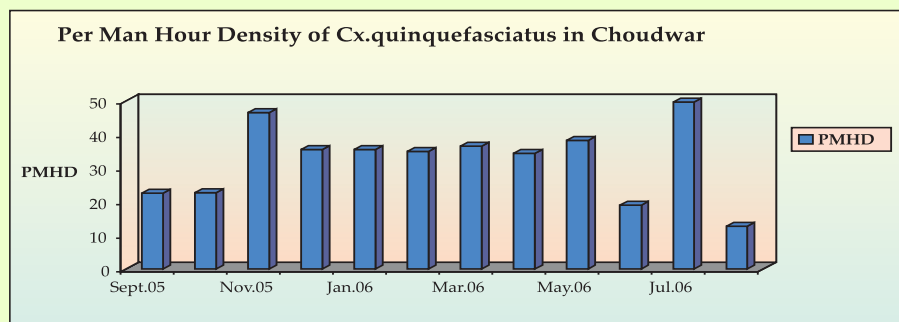


Fig. 2



# Other Scientific Activities & Services



Fig. 3

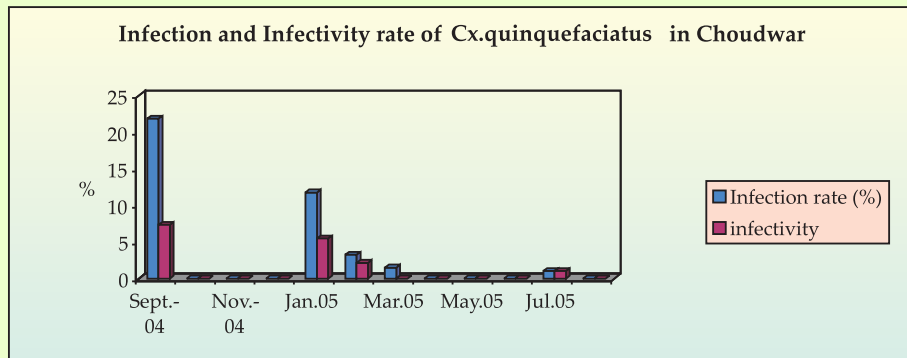
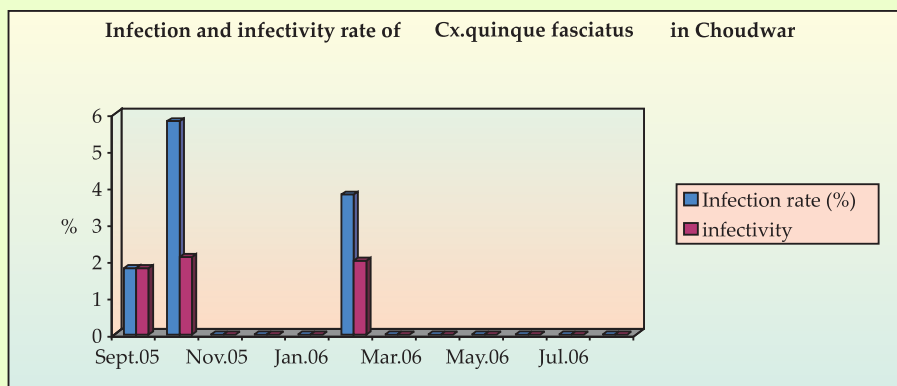


Fig. 4



## 2. FILARIASIS OPD (CAPITAL HOSPITAL, BHUBANESWAR)

During current year a total 1219 cases of lymphatic filariasis reported to the filaria OPD. Out of those 714 came for follow up, and 505 were new cases. All the cases were examined clinically, diagnosed and treated. Out of new cases, total number of males were 327 (64.8%) and female 178 (35.2%). Out of the new cases 5 were of the age group below five years, 11 were between six to fourteen years, 101 between fifteen to twenty-five years, 197 between twenty-six to forty years, 165 between forty-one to sixty-five and twenty-six were of more than sixty-five years of age. More number of male patients and of the age group more than twenty-five to forty are reporting to the OPD. The clinical diagnosis shows that majority 216(42.8%) presented with lymphoedema grade I followed by adenolymphangitis 142 (28.1%). Among the acute ADL cases 32 (22.5%) had only lymphangitis, 25(17.6%) had lymphadenitis in the inguinal region, 85(59.8%) had both acute lymphangitis and lymphadenitis. The chronic lymphoedema cases having acute ADL attack due to secondary infection were given treatment and advised for foot care management. The procedure of foot care like bandaging and exercise was demonstrated to the patients. The decompression therapy was given to 18 cases of filarial Lymphedema of different grades.

### Investigators:

*Dr. A.S.Kerketta,  
Dr. B. Dwibedi, Dr. E. V. Rao*

### Technical Staff:

*Mr. S.Rout, Mr. T. Mobarana,  
Mr. K Dhal, and Mr. R. N Nayak*



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## Distribution of Filariasis OPD cases according to Clinical Manifestation

Clinical condition	N=505	Total (%)
LMD* gr I	216	42.1
LMD gr II	27	5.3
LMD gr III	15	3.1
Elephantiasis	15	3.1
Hydrocele	15	3.1
Orchitis	9	1.8
Nodule	2	0.4
Adl	142	28.1
TPE	3	0.6
Chyluria	2	0.4
Arthritis	14	2.8
Myalgia	21	4.2
P.Neuritis	10	2.1
Others**	14	2.8

### Investigators:

*Dr. R.S.Balgir,*

*Dr G P Chhotray,*

*Dr M R Ranjit,*

*Mr B N Sethi,*

*Mr K C Dalei,*

*Mr B K Kanhar*

### 3. Referral Services in diagnosis of Haemoglobinopathy and sickle cell disorder

#### Observation:

In one series of such referrals, 143 (83 male and 60 female) cases from various medical colleges and peripheral hospitals of the state were examined. Most of the cases were having complains of refractory anaemia, progressive weakness and jaundice. Out of 143 cases, 111 belong to General Caste, 4 to Scheduled tribe, 28 to Scheduled caste. A detailed clinical examination and laboratory investigation such as haematological profile by automated cell counter (MS9), quantitative analysis of Hb, Hb A<sub>2</sub>, HbF and its electrophoresis was carried out by standard methods. Out of total 143 cases 30.7% were found to be electrophoretically normal (Hb AA), 24.4% were HbAS, 9.7% HbSS, 2.0% S $\beta$ -thalassaemia, 23.7%  $\beta$ -thalassaemia minor, 5.5%  $\beta$ -thalassaemia major and 3.5% E $\beta$ -thalassaemia. The community wise distribution of the Hbpathies has been shown in table 2. Molecular characterization of these samples revealed the presence of IVS1-5 (G->C) mutation in all the cases of  $\beta$ -thalassaemia.

In another series diagnostic services were provided to 8 families referred during period from April 2005 to March 2006, for electrophoresis, a total of 16 subjects were screened. Out of 16 cases, 2 (12.5%) were diagnosed as homozygous sickle cell disease, 3 (18.8%) sickle cell traits; 1 (6.3%)  $\hat{\alpha}$ -Thalassaemia, 1 (6.3%)  $\hat{\alpha}$ -Thalassaemia

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trait; and 9 (56.3%) cases were found normal. Of the 16 cases, 6 (37.5%), 1 (6.3%) and 1 (6.3%), respectively belonged to general castes, scheduled castes and scheduled tribes. Genetic/marriage counseling were given to affected families.

**Table2: Caste wise distribution of Hb pathies amongst the referred cases**

Category	Total	AA	AS	SS	SB	thal Major	thalMinor	E thal
General	111	33 (29.7%)	25 (22.5%)	11 (9.9%)	3 (2.7%)	8 (7.2%)	28 (25.2%)	3 (2.7%)
SC	28	10 (35.7%)	8 (28.5%)	2 (7.1%)	0 0%	0 0%	6 (21.4%)	2 (7.1%)
ST	4	1 (25.0%)	2 (50.0%)	1 (25.0%)	0 0%	0 (0%)	0 (0%)	0 0%
Muslim	0	0 0%	0 (0%)	0 (0%)	0 0%	0 0%	0 0%	0 0%
Total	143	44 (30.7%)	35 (24.4%)	14 (9.7%)	3 (2.0%)	8 (5.5%)	34 (23.7%)	5 (3.5%)

#### 4. Laboratory investigations of outbreaks of jaundice and fever

Based on request from the state health department blood samples from several outbreaks of jaundice and fever were investigated and results communicated for intervention .Out of four epidemics of jaundice two were due to HEV infection and two were due to HAV infection .One outbreak of fever of unknown cause was investigated for presence of Dengue IgM antibody and all the samples (twenty) were negative for the antibody but two of them were found positive for antibodies of IgM to Chickenguniya virus as confirmed from NIV, Pune. This is first report of Chick virus infection in the state

#### Outbreaks of cholera in Orissa (April, 2005-March 2006)

SINo.	Place	Period	Total Samples	No. Positive for V. cholerae	
				Ogawa	Inaba
1	Malipur, Pattamundai, Kendrapara	July 2005	10	3 (30%)	0
2	Gaudabada Sahi, Sea Beach, Puri	August 2005	03	0	3 (100%)
3	Rangamatia, Bhubaneswar, Khurda	September 2005	04	0	4(100%)
4	Chasapada, Dhenkanal	October 2005	05	0	5 (100%)
5	Ranihat, Cuttack	March 2006	12	10 (83.3%)	0



*Chief minister of Orissa Shree Naveen Patnaik opening the souvenir of lymphocon-10 in NALCO Auditorium Bhubaneswar.*



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## 5. Diarrhoeal Outbreak Study:

During the period under report 5 Diarrhoeal outbreaks were studied.

- ❖ July 2005 outbreak : *V. cholerae* O1 Ogawa
- ❖ August-October 2005 outbreak : *V. cholerae* O1 Inaba
- ❖ March 2006 outbreak : *V. cholerae* O1 Ogawa

All the *Vibrio cholerae* O1 Inaba and Ogawa serotype were uniformly sensitive to ampicillin, chloramphenicol, gentamycin, ciprofloxacin, norfloxacin and tetracycline. The Inaba serotypes were resistant to furazolidone and nalidixic acid (100%) and about 50% resistant to neomycin, cotrimoxazole and streptomycin. On the other hand the Ogawa serotype were 100% resistant to furazolidone, nalidixic acid and neomycin; about 50% resistant to neomycin and streptomycin respectively.



10th Annual Conference of Lymphology Society of India being organised by RMRC, BBSR from 15-16, December 2006.

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## Human Resource Development

### 1. SRF/JRF Joined under Ph.D Programme:

In the Ph.D Program of the Centre, following is the list of research scholars undergoing their research activities in Ph.D program under Utkal University, Bhubaneswar.

Sl. No.	Name	Date of Joining Ph.D program	Funding	Title of the Research Topic	Guide/ Co- guide
1	Mr. Alok Das Mohapatra	7/1/2003	CSIR (SRF)	A study of apoptosis in filariasis	Dr. B. Ravindran
2	Mr. Sudhansu Sekhar Nisank	29/1/2004	CSIR (SRF)	Molecular characterization of Thalassemia and its clinical significance in Orissa	Dr. G.P.Chhotray
3	Mr. N.S. Marai	16/3/2001	RMRC Staff	Current trends in malaria transmission in Orissa, India	Dr. A.P.Dash
4	Mr. Aditya K Panda	24/2/2005	CSIR (SRF)	Genetic Polymorphism in Malaria and Filariasis.	Dr. B. Ravindra.
5	Dr. S. S. Padhi			Immuno Epidemiological correlation between Malaria & Filariasis	Dr. B. Ravindran
6	Mr. Santos K Panda	22/1/2004	CSIR (SRF)	Innate and adoptive immunity in experimental and Human Filariasis	Dr. B. Ravindran
7	Mr. B. R. Sahu	1/10/1999	UGC (SRF)	Role of antibodies in protective immunity in human and experimental filariasis	Dr. B. Ravindran
8	Mr. Mahendra Panda	19/12/2001	RMRC (SRF)	Problem of Endemic Malaria among tribal and Non- tribal; population in KBK region of Orissa	Dr. A.Mohapatra
9	Ms. Anamika Das	15/1/2002	RMRC (SRF)	Clinical malaria: association of CD36 gene polymorphism and P.falciparum genotypes (Completed w.e.f 14/7/2004	Dr. M.R.Ranjit
10	Upasana Sahoo	4/8/2005	RMRC (SRF)	Role of Microparticles and ABCA1 transporter in the pathogenesis of cerebral malaria	Dr. M. R. Ranjit



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11	Prajyoti Sahu	3/8/2005	RMRC (SRF)	Prevalence of HBV & HCV infection and their genotypes among acute/ chronic symptomatic hepatitis patients in hospital set up.	Dr. B. Dwibedi
12	S.K.Samal	16/8/2005	RMRC (SRF)	Isolation characterization and diagnosis of A. hydrophilia isolated from freshwater fishes	Dr. B. B. Pal
13	P. G.S.Sethy	3/8/2005	RMRC (SRF)	Protein energy malnutrition in association with micronutrients deficiency of public health significance	Dr. G. Bulliyya
14	Madhumita Panda	29/7/2005	CSIR (GRF)	Immuno regulation of regulatory cells in human and experimental malaria	Dr. A.K.Satapathy
15	Basanta Kumar Swain	1/8/2005	RMRC (SRF)	Impact of Health and Nutrition Education Intervention by Peripheral Health Institutions among Pregnant Women in Tribal Orissa, India	Dr. G. Bulliyya & Dr. B.V. Babu
16	Sasmita swain	16/8/2005	Lady TATA Memorial fund (JRF)	Molecular Identification of an Annularis complex of Orissa	Dr.R.K.Hazra
17	Ronaly Rout	23/5/2006	UGC (JRF)	Role of Pf. EMPA in Severe Clinical Manifestation of f. Malaria	Dr. M.R.Ranjit
18	Biswaranjan Purohit	19/9/2005	RMRC (SRF)	Malaria Preventive Intermittent Treatment of Chloroquine among the Pregnant Women- an Anthropological Perspective	Dr. A.Mohapatra
19	Asima Tripathy	31/8/2006	RMRC (SRF)	Factors affecting the vectorial competence of anopheles vectors in Orissa and its impact in Malaria.	Dr. N.Mohapatra

# Other Scientific Activities & Services



## Ph.D Thesis Submitted:

1. Mr. N.N. Mandal, R.A, submitted his Ph.D thesis on the topic “Studies on the immuno-protective potential of detergent soluble and lipid antigen of filarial parasite in lymphatic filariasis” under utkal university, Bhubaneswar.
2. Mr. H.K.Khuntia , R.A submitted his Ph.D thesis on “Molecular epidemiological analysis of *Vibrio cholerae* associated with epidemic and endemic cholera in coastal and tribal districts of Orissa” under Utkal University, Bhubaneswar.

## 2. M.Sc. Dissertation program:

The Centre conducts M.Sc. dissertation program from various Universities/ Institutions. Followings are the list of M.Sc. dissertation work being in the Centre under scientists of various departments.

Sl No.	Name of the student & University	Dissertation Title	Name of the Guide	Period
1	Ajit Kumar Mohanty – MITS, Rayagada	Clearance a <i>Wolbachia</i> in <i>Aedes aegypti</i> mosquito by tetracycline treatment and its action on the development of <i>Brugia malayi</i> in mosquito	Dr. R.K.Hazra	5/05 – 4/06
2	Amit Routray – Amity, Lucknow	Molecular characterisation of <i>V.cholerae</i> .	Dr. G.P.Chhotray	8/06 – 1/07
3	Arnapurna Behuria – TACT, BBSR	Molecular phylogenetic analysis of Anophelines	Dr. R.K.Hazra	8/06 – 1/07
4	Banishree Panigrahi – NIMS	Molecular strain typing of <i>P.falciparum</i> , using MSP2 Gene	Dr.M.R.Ranjit	5/06 – 7/06
5	Bijay Laxmi Choudury – UU, BBSR	Co-infection of lymphatic dwelling <i>w.bancrofti</i> & intestinal helminth in endemic population	Dr. B. Dwibedi	1/06 – 6/06
6	Bishnu prasad Mohanty – OUAT	A study on alpha gal determinants in filarial parasites	Dr. A.K.Satapathy	4/06 – 9/06
7	Biswajit Sahoo – S.U, Burla	Prevalance of <i>Setaria digitata</i> in cattle population& mosquito	Dr. R.K.Hazra	3/06 – 5/06
8	Biswaranjan Samanthray – S.U, Burla	E- coli stain typing	Dr. B. B. Pal	1/06 – 3/06
9	Chandrasekhar Satapathy – MITS, Rayagada	Enteric pathogen	Dr. B.B.Pal	1/06 – 3/06



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10	Chandrasree Rajguru – Ravensaw	HBV infection in acute chronic liver disease cases in hospital setup	Dr.B. Dwibedi	4/06 – 9/06
11	Dhableswar Pradhan – S.U, Burla	Prevalance of <i>Setaria digitata</i> in cattle population	Dr. R.K.Hazra	3/06 – 5/06
12	Ipsita Mohanty – TACT, BBSR	V. Cholerae	Dr. G.P.Chhotry	1/06 – 3/06
13	Jita Dash – VIT, Vellore	Molecular typing of G6PD deficiency	Dr. M.R.Ranjit	8/06 – 1/07
14	K.K.Sahu – Rai Foundation, Delhi	Study on Ann.Spe by ITS2 region	Dr. R.K.Hazra	1/06 – 3/06
15	Kumari Vishi – NOU, Baripada	Combined detection of wucheria bancrofti and brugia malayi by singlr PCR	Dr. R.K.Hazra.	9/05–11/05
16	Liza Jena – U.U, BBSR	Immune response to Filaria lipids	Dr. M.K.Beuria	1/06 – 6/06
17	Monali Bal – Amity, Lucknow	Molecular characterisation of E-coli	Dr. G.P.Chotray	8/06 – 1/07
18	Monalisa Priyadarsini – TACT	Immune response to surface lipids in human filariasis	Dr.M.K.Beuria	2/06 – 5/06
19	Pradip K Das – Khalikot	Effect of plant extract on wolbachia population	Dr.R.K.Hazra	5/06 – 7/06
20	Prangya P Das – Khalikot college.	Filarial antigenemia in individuals living in areas endemic for Bancroftian filariasis	Dr.M.K.Beuria	5/06 – 8/06
21	Priyadarsini Gochhayat – U.U, BBSR	Incidence of different bacterial enteropathogens causing diarrhoea among hospitalised patients	Dr.B.B.Pal	1/06 – 6/06
22	Pulak Ranjan Nayak – NOU, Baripada	Isolation, Identification and antibiogram of escherichia coli from hospitalised diarrhoea patients- A preliminary finding	Dr. B.B.Pal	5/05–8/05
23	Ranjan Kumar Pati – MITS, Raigarha	PCR detection of <i>Wolbachia</i> in <i>Culex quinquefasciatus</i> and its clearance by Tetracycline Treatment.	Dr.R.K.Hazra	5/05 – 2/06

# Other Scientific Activities & Services



24	Ruchika Kar – U.U, BBSR	Cryptosporidiosis among hospitalised diarrhoeal children in Bhubaneswar	Dr. M.R.Ranjit	1/06 – 6/06
25	Sangram Behera – OUAT	Cryptosporidiosis among cattle population in Bhubaneswar	Dr.M.R.Ranjit	4/06 – 9/06
26	Sarmila Sahoo – TACT, BBSR	E- Coli	Dr. G.PChhotry	1/06 – 3/06
27	Sasmita Das Sutar – OUAT, BBSR	Choloroquine Resistance of Plasmodium falciparum : study on PfCRT gene polymorphism and its diagnostic perspective	Dr. M.R.Ranjit	10/05–3/06
28	Sasmita Panda – Gandhi Inst. Biol Sc., Raygarda	Cryptosporidiosis among hospitalised diarrhoeal children in Bhubaneswar	Dr. M.R.Ranjit	8/06 – 1/07
29	Shilpa Das – MITS, Raygarda	Exposure to microbiological techniques in identification of V-cholerae & E-cholerae	Dr. G.PChhotray	5/06 –6/06
30	Snigdha Dash – Neelchal Institute of Med Science, BBSR	Isolation identification & stain typing	Dr. G.PChhotray	8/06 – 1/07
31	Soubhagya Bhuyan – Rai Found. College New Delhi	Molecular identification of sibling species complex of Anopheles annularis	Dr. R.K.Hazra	1/06 – 3/06
32	Soumya P. Panda – TACT, BBSR	Effect of Plant extract on mosquito larvae and Wolbachia present in them	Dr.N.Mohapatra	2/06 – 4/06
33	Soumya Sucharita Das – NOU, Baripada	Prevalence of Vibrio Cholerae among hospitalized Diarrhoea patient of same selected areas of Orissa	Dr. B.B.Pal	5/05 – 8/05
34	Subhalaxmi Mallick – NIMS	Molecular strain typing of P.falciparum using MSP1 Gene	Dr.M.R.Ranjit	3/06 – 6/06
35	Subhra Swetapadma – Khalikot	Cryptosporidiosis among hospitalised rural children during winter season	Dr.M.R.Ranjit	5/06 – 7/06



# Other Scientific Activities & Services

36	Suchitra Mohanty – Utkal University, BBSR	Ecoli strain typing	Dr. M.R.Ranjit	8/06 – 1/07
37	Sujata Sahoo – NOU, Baripada	Shigellosis among acute diarrhoea patients- A hospital based study	Dr. B.B.Pal	5/05 – 8/05
38	Sujata Sahoo – Dayanada Sagar Coll. Bangalore	Anculicita complex using D3 and ITS2 region	Dr. R.K.Hazra	1/06 – 3/06
39	Sunita Kund – Ravenshaw College	Prevalence of Vibrio cholerae among hospitalised patients of some selected areas of Orissa	Dr.B.B.Pal	4/06 – 7/06
40	Susree Sangita Routray – Khalikot	Molecular identification of D3 and ITS2 regions of Anopheles subpictus complexes.	Dr. R.K.Hazra	5/06 – 7/06
41	Swati Kumari – Ravensaw	Molecular identification of sibling species complex of Anopheles culicifacies in Anugul district of Orissa and to study their Sporozoite rate.	Dr.N. Mohapatra	4/06 – 9/06
42	Sweety Mohanty – MITS	IgG & IgM antibody response to glutathimane-S transferase in human filariasis	Dr.M.K.Beuria	2/06 – 6/06
43	Tanusree Mohanta – OUAT, BBSR	IgG and IgM antibody response to filariallipid antigen in human bancroftian filarial region	Dr. M.K.Das	1/05 – 6/05
44	Kanchan M.Bihari – TACT, BBSR	Isolation and identification of aeromonas species from different hospitalised diarrhoea patients & water samples	Dr.B.B.Pal	2/06 – 5/06
45	Sindhu tanaya mohanty – MERIT, Ooty, T.N.	Molecular characterisation of pathogenic e-coli among UTI patients	Dr. B.B.Pal	12/05–5/06

# Other Scientific Activities & Services



### 3. Short Term Training Program:

A refresher Training on Verbal Autopsy for SRS supervisors was organized at RMRC, Bhubaneswar in June 2005. Dr.A.S. Kerketa, SRO was the coordinator of the training program.

1. RMRC scientists under Professional Development Course (PDC) in Public Health Management and health sector reform delivered talk for senior district Medical Officers of Jharkhand, Chhatisgarh and Orissa on 22nd June 2005.
2. Soumya Mohanty (B sc 2nd Year) of Vellore Institute of Technology (Deemed University) has undergone a short-term training on “Molecular methods on identification of haemoglobin variants” under the super vision of Dr M R Ranjit, SRO.
3. Ms Gynalipsa Pradhan (M Sc Final Year Biotechnology) of Dayananda Sagar College of Science, Bangalore and Mr Sandeep Mohanty (M Sc Final Year Biotechnology) of Administrative Management College, Bangalore has undergone short term training on “Diagnosis of Malaria parasite by PCR Technology under the suprvision of Dr M R Ranjit, SRO.
4. Also two M.Sc.Biotechnology students from Utkal University and one B.Tech (Biotechnology) from IIT, Khargpur have undergone practical training in Immunology Dept. under the guidance of Dr.M.K.Das, DD (SG).



*RMRC Research Team in survey area.*



# Other Scientific Activities & Services

## 4. Foreign Visit:

5. Dr.B.V.Babu , Asst. Director visited Geneva, Switzerland as invited member for WHO/TDR meeting of Scientific Working group on Lymphatic Filariasis, held during 10-12 May,2005 at WHO. He presented a working paper entitled “Social and behavioral issues of mass drug administration and morbidity management in the programme to eliminate lymphatic filariasis.
6. Dr. B. Ravindran, Deputy Director, (SG) visited University of Bonn, Germany in connection with the on- going Indo- German collaboration Project from 31st Oct. to 14th November 2005. He delivered a seminar on “Does host immunity operate inside filarial worm? in the dept. of Parasitology at University of Bonn on 10th Nov. 2005



*DG. ICMR along with Scientists RMRC*

# Other Scientific Activities & Services



## Contribution towards National/ State level Health Program

### 1. A Mid Term Assessment of Mass Drug (DEC) Administration against Filariasis in Orissa

#### Introduction

National health policy of 2002 envisages its goal to eliminate lymphatic filariasis in India by 2005. NVBDCP accordingly initiated the MDA programme in all filarial endemic states of India. As per the programme the consecutive second round MDA with DEC has been undertaken in Orissa on November 11<sup>th</sup> to 13<sup>th</sup> 2005. Upon request from Directorate of National Vector Borne Diseases Control Programme, while informing the state health department; Regional Medical Research Centre, Bhubaneswar has undertaken independent evaluation of MDA programme in two districts of Orissa namely Cuttack and Khurda as per guideline provided by NVBDCP. The evaluation was carried out in sampled households of study area in three phases i.e. a) Pre MDA phase : Parasitological, entomological and disease survey b) MDA phase : Process evaluation on MDA days and c) Post MDA phase : Impact evaluation as per format provided by NVBDCP ; primarily consisting of coverage & compliance of DEC during MDA and side reactions if any after drug intake and reasons of non compliance. The observations made are incorporated in this report.

#### Objectives

1. To assess the transmission and disease status by rapid one time survey in sampled households.
2. To review the progress of activities of single dose DEC mass administration in the sampled population of two selected districts namely Khurda and Cuttack.
3. To recommend mid course corrections and suggest necessary steps for further course of action.

#### Methodology

##### *Sampling procedure:*

Households were selected following the sampling procedure laid down in the operational guidelines of WHO and NVBDCP. Out of thirty districts in the State twenty are covered under MDA as identified. Two districts were selected for evaluation out of twenty districts covered under MDA as per NVBDCP guideline. From each district three rural and one urban site were selected covering thirty households in each site thus making 120 households (approximately 600 population) in each district.

#### Survey site and population:

Following above procedure two districts namely Cuttack and Khurda were selected for evaluation. . Three Villages viz. 1. Sriram Berhmpur (Bentkar PHC) 2. Brahmanabastar (Berhmpur PHC, Athagarh) 3. Sainda (Telengapentha, PHC) and one ward (No. 2) of

#### *Investigators:*

*Dr. B.Dwivedi, Dr. S.K.Kar,  
Dr. S.K.Parida, Dr. S.Acharya,  
Mr. P.K.Jangir, Mr. R.C.Parida,  
Mr. S.C.Rout, Mr. T.Moharana,*



# Other Scientific Activities & Services

Chowduar NAC from Cuttack district. and three villages viz 1. Mendhasala (Mendhasala PHC)2. Rambhabeli (Tangi PHC)3. Jariput (Haladia PHC) and one ward (No. 9) of Jatani NAC of Khurda district were selected for evaluation

All individuals (all ages and both sexes) from the sampled household were included in morbidity, parasitological and coverage survey. All the above selected households were also taken as units for entomological survey.

## **Pre MDA house hold survey**

Household survey included; age, sex, and socio-economic status of all members of households. Physician examined the individuals and presence of chronic filarial disease like Lymphedema or Hydrocele were noted by door to door visit of these sampled households.

Finger prick blood samples were collected between 8-12 P.M. for preparation of thick smear for microfilaria detection. Simultaneously rapid ICT test for presence of filarial antigenemia was done using 100microlitre finger prick blood For vector survey insect breeding sites were assessed and mosquito collection carried out from the living rooms of the selected households during morning hours (6-10 A.M) following standard procedure.

## **MDA phase evaluation**

During the MDA days (Nov-11to 13<sup>th</sup>) the team revisited the village/ wards during 9 A.M to 5 P.M. The distribution pattern undertaken by the volunteers was observed. The households were enquired about the drug distribution, consumption and problems if any.

## **Post MDA coverage survey**

After the mop up round of DEC distribution (13<sup>th</sup> NOV.) was over, the team revisited each of the identified households and the members were asked in detail about the receipt of drug, DEC consumption, side reaction and it's management and their suggestions regarding the MDA progress which was recorded in preformed questionnaire. The knowledge and awareness of the individuals regarding filariasis, use of DEC in filariasis control, its benefits and outcome were assessed through interrogation.

## **Observation**

### **Pre MDA Phase:**

The total number of households surveyed by the team was 246 in both the districts covering a total population of 1843. The pre MDA observations recorded are depicted in the following table.

# Other Scientific Activities & Services



**Table -1 District wise characteristics of households surveyed and pre MDA (2005) status**

Parameters	Khurda	Cuttack
No. of households under study and covered	120	126
Total population surveyed	987 (98.1)	856 (97.8)
No. of Person with chronic filarial disease	54 (6)	68 (7.9)
Individuals covered by ICT test	198	300
Number of persons positive for ICT	82 (41)	95 (31)
Prevalence of microfilarimia (slide positive)	6.28	2.5
No of individuals willing to take DEC during MDA 2005	691(70)	756 (88.4)
No of households surveyed for vector study	120	120

- Figures within the parenthesis indicate the percentage.
- ICT- Immuno Chromatographic Test for Rapid detection of W. Bancrofti antigen
- Endemicity Rate expressed as percentage of individuals with infection (Mf+ or ICT+) or chronic disease

Insect vectors were collected from all the sampled households. Vectors collected from Cuttack district were *Culex Quinquifasciatus*, *Culex Vishnui*, *Mansonia*, *Anophelines* and *Armigeris* species and those collected from Khurda district belonged to *Culex Quinquifasciatus*, *Culex Vishnui*, *Anophelines* and *Armigeris* species.

**MDA Phase.** In most sites the distributors were assigned to distribute DEC tablets in 70-80 households covering 350-400 population and they could complete drug distribution in around forty percent of the households under their coverage on first day i.e. 11th November. During the mop up days (12-13th November 05) they covered the rest of households.

The drug distributors made no pre MDA visit to the households prior to day of MDA. Time spent in each household by the distributor during drug distribution days was not adequate for explaining the members about Filariasis and MDA programme.. And the distributors could not revisit the population untouched in their first round. Distributors did not persuade the people to swallow the tablets in front of them instead almost all distributors advised the family members to take the tablets after they took food. Only 9.7 percent of the individuals actually swallowed DEC tablets in front of the distributor.

**Post MDA Phase:** The team immediately after mop up round of DEC distribution revisited identified households. The family members were interviewed regarding their perception on performance of MDA, actual consumption of DEC and any encountered side reactions. The information collected was recorded in pre-designed format and the observations are depicted in following tables (Table2 and Table3).



# Other Scientific Activities & Services

Table-2: Post MDA (2005) Observations on Drug coverage and compliance

Parameters	Khurda	Cuttack
Total no. of households under survey	120	126
Households not covered by distributor	9	4
Total population surveyed	987	856
Population received DEC	790 (80)	688 (80.34)
Population reported consumption of DEC	405 (41)	348 (40.57)
Reported under dose intake *	62 (15.4)	56 (16)
Reported over dose intake *	4 (1)	7(2)
Persons reported side reaction to DEC	22 (5.6)	22(6.2)

Figures within the parenthesis indicate the percentage.

\* Revealed from the number of tablets the individuals reported to have swallowed.

## DEC distribution coverage and consumption

DEC tablets were distributed in 95 percent of the households under survey. Household coverage by DEC was lower in urban (86.7%) as compared to rural (96.7%) areas. Reported reasons of not covering these households were; all the family members were not present in the house during the visit or door was closed when the distributor came to those houses. Few (3/246) households also refused to receive the medicines from the distributor.

Table 3: Reasons for non-receipt and non-consumption of DEC

Reasons for non- receipt DEC tablets	Khurda	Cuttack
	(n=197)	(n=168)
A. Refusal to receive DEC tablets	54.8	54.1
Tablets not dispensed to children of 2-5 yrs. of age, elderly, and persons with minor illness or on other medicines	40.1	41.1
Out of station on MDA days	5.0	5.9
B. Reasons for non-consumption of DEC among those received	(n=385)	(n=340)
Fear of side reaction	40.0	42.1
Could not consume due to festival	24.9	23.2
Given reason- As not having filariasis	16.8	20.0
Having other minor illness	21.8	20.8
Taking other medicine	3.8	5.9
Forgotten to take the tablets	5.9	7.9

# Other Scientific Activities & Services



- Figures represent the views given by the individuals either not received or not consumed DEC tablets during MDA expressed in percentage.

Though 95 percent of the households were covered, DEC tablets were not distributed to all the eligible individuals of the covered household. On average 80.5 percent of the sampled population received the drug from their distributor. The major reasons for above non-coverage were: Refusal to accept the tablets distributed to the individuals and tablets not being dispensed to children between 2-5 years of age, persons with minor illnesses and persons receiving other medications.

About half of those received the tablets reported that they have swallowed the tablets. The over all compliance rate among the eligible sampled population was 40.6 percent. In few families the members could not trace out the actual number of tablets left over and not consumed. Many of them reported that tablets were supplied in loose paper covers and they do not have proper storing place and it would have been better if supplied in strips.

## Adverse reaction following DEC administration and its management

Side reactions were reported in 6% of population who have consumed the DEC tablets .The reported side reactions were mild and transient requiring no treatment except two individuals who suffered from reactions of moderate severity and were at need of medical attention. They received outpatient's treatment and were relieved within 5 days with analgesics.

## Interpretation and recommendations

The observation from the selected districts has revealed that, though coverage of DEC distribution during MDA days (November 11 –13) was adequate (about 80%), the rate of DEC consumption (around 40 percent of the sampled population) was below the target level of eighty percent. Training and motivation of volunteers can improve the coverage of children and supervised consumption. Adequate IEC are needed for population to make them understand and realise the purpose and importance of MDA in prevention of Filariasis amongst children and for those not affected by disease. Fear of side reaction from the experience of previous year MDA (2004) was observed to be the major cause of non-compliance at study area. Festive days coinciding with the MDA days, confusion in drug dosage as per age both at household and distributor level, poor knowledge of the public about the role of single dose DEC in community for prevention of filariasis & benefits incurred to them and, lack of awareness about side reaction management are among the other major factors responsible for low compliance. Some modifications and suggestions that can be helpful in improving the population acceptance to the programme are given below.



*Morbidity Survey for Filariasis*



# Other Scientific Activities & Services

1. Filariasis elimination awareness workshop with community participation at village level in presence of a medical officer, community leaders, drug distributor and village heads.
2. Distribution of DEC tablets in three strengths is with different colour in individual packs for different individuals in the family to avoid dose confusion at household level.
3. IEC materials should focus on purpose and benefit of MDA, highlighting coverage of paediatrics group: 2-5 years of age for prevention of Filariasis.
4. Training and education to drug distributors and health personnel should be given emphasis.
5. Training to the volunteers selected for drug distribution should be adequate and their activities needs supervision by spot check at supervisory level.
6. Repeated telecasting in attractive form during prime timings of popular TV serials and informative education through popular health serials like KALYANI (Oriya) in local languages. Radio, mike announcement and posters can also motivate rural population.
7. All the stakeholders to be involved in that community including private practitioners, religious leaders and leaders from different caste or group so that community perceives the importance of MDA.

The community needs to be made very clear about the possibility of side reactions, reversibility and mild nature of reaction and how easily they can be treated,

## 2. Malaria Monitoring

This centre undertook monitoring of malaria endemic districts, as requested by NBVDCP, from time to time. The malaria-monitoring programme was carried out from 2003 onwards to till date. The team of Scientists and Technician visited various allocated districts PHCs, Sub-Centres and DDCs & FTDS every month. The monitoring was done to emphasize the EDPT component of the programme. The teams used to visit 2 PHCs that were most endemic for malaria and from each PHC, 2 Sub-centers were monitored, along-with 2 DDC/FTDs at the village level were monitored regularly every month for each of these allocated districts. Till date 8 malaria endemic districts were monitored; in these districts 25 PHC/CHCs, 31 Sub-Centres and 69 DDC / FTDS at village level were monitored upon to improve the functioning of EDPT component The teams used to monitor data on epidemiological parameters of the district every month, and the gaps if any in the programme were discussed with the district health authorities, for district, PHC and village level. In addition to this the DDC/FTD monitoring, Spray & Larvicidal component etc. of the programme is also monitored at the village level as per the guidelines of the NVBDCP. The report thus generated is informed to the Director NVBDCP and intimated to the local Health Programme Officers responsible for malaria

# Other Scientific Activities & Services



control, in the State. During 2002-2006, 2 districts like Sambalpur and Sundergarh were monitored.

## Bed Net Evaluation:

Evaluation of the Bed net use and distribution for the enhancement of the malaria control programme was evaluated by this centre. In this direction three districts were evaluated so far on impact of bed net use and the results reveal that, the acceptability of the net among the people in general has increased. There is a potential of bed net use in this State. The detailed reports of 3 districts surveyed for impact of bed nets were submitted to the Government.

## 2. Assessment of iron deficiency Anaemia among adolescent girls in Orissa

A Study entitled 'Assessment of iron deficiency anaemia among adolescent girls in Orissa' was conducted Khurda, Jajpur and Bargarh districts of Orissa during 2004-2005 as a part of National anaemia control program of "Kishore Shakti Yojna" implemented for adolescent girls in the state.

## 3. Swasthya Mela (Health Camp)

Regional Medical Research Centre, Bhubaneswar was provided a stall for preliminary diagnosis of Sickle cell anaemia as invited by the Chief District Medical Officer, Anugul in the Mega Swasthya Mela-2006 from 11.03.2006 to 13.03.2006 for 3days at Zilla Bhawan Talcher, in the district of Anugul. Mr. B. Murmu RA and Mr. P.G.S. Sethi SRF were deputed for opening a stall at Swasthya Mela at Talcher. In the three days camp A total of 151 samples tested for sickle cell anaemia and NESTROFT (Necked Eye Single Tube Red cell Osmotic Fragility Test). Out of 151 cases, 88 cases were positive for sickle cell anaemia and 17 cases were positive for NESTROFT where as 13 cases of NESTROFT positive cases are also sickle positive. 4 cases are positive for NESTROFT only.



*Malaria Monitoring*

## Caste-Wise Distribution of Sickle Cell Anaemia

Name of the caste	Number of sickle cell positive cases	Percentage (%)
Chasa	32	21.2
Pana	25	16.6
Karana	11	7.3
Gouda	4	2.6
Paika	4	2.6
Dhoba	2	1.3
Keuta	2	1.3
Muslim	2	1.3
Munda	1	0.7
Others	5	3.3
<b>Total</b>	<b>88</b>	<b>58.2</b>



# Other Scientific Activities & Services



RMRC Scientists displaying research activities in 13th National Science Congress at Bhubaneswar from 27th to 30th December 2005 in KIIT Campus.

## RMRC in 13<sup>th</sup> Children's Science Congress at Bhubaneswar.

The 13th Children's Science Congress was held from 27th to 31st December 2005 at Bhubaneswar, which was inaugurated by Honourable President of India Dr. APJ Abdul Kalam. A scientific stall was opened by RMRC, Bhubaneswar from 27th – 30th Dec. 2005 in KIIT Campus. The scientists and researchers of this centre have demonstrated the various techniques, research achievements and activities in the form of posters and Pamphlets in Malaria, Filariasis, Diarrhoea, Haemoglobinopathy and nutrition. The stall was visited by experts and students from various states of the country.

## Networking

**Networking**

**Networking with other ICMR institutes:**

- VCRC – Collaboration & technology transfer on filariasis
- NICED – technology transfer on Diarrheal disorders
- MRC – Collaborative research & technology transfer on Malaria
- NIV – Collaboration on Hepatitis
- NIRRH – Technology transfer on chlamydial diagnostics
- NIN – Collaboration & technology transfer on Nutrition
- IIH – Collaboration and technology transfer on Haemoglobinopathies
- NARI – Planning collaborative research

LOCATION OF BSRB IN INDIA

LINKAGES	
Institutes	Area
<b>International:</b> WHO/TDR, EU, Univ. Toronto (Canada)	Financial Support
<b>National:</b> -DBT, MOH&FW -TIFR, BARC, NII, RGI, IHS	Financial & Training Support, Technology Transfer Collaborative Research
<b>Other ICMR Institutes:</b> -NICED, VCRC, MRC, NIV, NIRRH -NIN, IIH	Interactive Collaborative
<b>Local:</b> State Health Dept. Medical Colleges & Universities, WHO, WFP, UNICEF	Consultancy & Technical support Referral Services