3. OTHER COMMUNICABLE DISEASES

3.1 Prevalence of pulmonary tuberculosis in tribal population of Madhya Pradesh

The study has been undertaken in collaboration with Tuberculosis Research Center, Chennai to estimate the prevalence of pulmonary tuberculosis in tribal population of Madhya Pradesh. It is a cross sectional sample survey to estimate the prevalence of pulmonary tuberculosis among population ≥ 15 years and prevalence of tuberculosis infection among children aged 1-9 years.

The tuberculin survey was undertaken to estimate the prevalence of infection and Annual Risk of Tuberculosis Infection (ARTI). A representative random sample of villages predominated by tribal population was selected to cover an estimated random sample of 3500 children aged 1-9 years.

The test-read coverage among tribal children was 90%. Among the 4802 children test read, 3062 (64%) children had no BCG scar. The frequency distribution of children by reaction sizes indicated a fair mode at 18 mm in the right hand side of the distribution. By mirror-image technique, the prevalence of infection among children irrespective of scar status was 7.1% (343 of 4802) and ARTI was 1.3%. The corresponding figures for non vaccinated children were 6.8% (209 of 3062) and 1.3% respectively. The disease survey is in progress.



Tuberculin testing

3.2 A Study of markers of Hepatitis B, C and HIV in tribes of Orissa

The study was conducted in *Bondo* tribe of Orissa. The tribe is located in inaccessible, interior areas of Khairput block of Malkangiri district of Orissa. Total population of the tribe is about 5,000 which is distributed in small groups ranging from 50 to 200 individuals in each group.

In all, 457 blood samples were collected from 14 villages. Twenty samples were found positive for hepatitis B (prevalence 4.4%). The prevalence was higher in males (5.3%) as compared to females (3.4%). The prevalence of hepatitis B increases as age increases (Table 3.2.1). All HBsAg negative samples (n=437) were tested for antiHBs antibodies. Sixty four samples (14.6%) were anti HBs positive. Anti HCV antibodies were present in 38 samples (8.3%) and its prevalence was 6.7% in males and 9.9% in females (Table 3.2.2).

Table 3.2.1: Age sex distribution of HBsAg positivity in Bondo tribe

Age group	Males Positive/no. tested (%)	Females Positive/no. tested (%)	Total Positive/no. tested (%)
upto10	0/53 (0)	1/36 (2.8)	1/89 (1.1)
11-20	2/47 (4.3)	2/36 (5.6)	4/83 (4.8)
21-30	2/41 (4.9)	0/30 (0)	2/71 (2.8)
31-40	4/47 (8.5)	3/64 (4.7)	7/111 (6.3)
41-50	3/29 (10.3)	2/51 (3.9)	5/80 (6.3)
51 & above	1/8 (12.5)	0/15 (0)	1/23 (4.3)
Total	12/225 (5.3)	8/232 (3.4)	20/457 (4.4)

Of the nine representative samples processed for HBV genotyping, six were of genotype D while three belonged to genotype A. One sample was positive for HIV-1.

The findings of the study indicate that hepatitis B infection is an important problem in Bondo tribe. Control measures in the form of HBV vaccination and introduction of IEC strategies are necessary among them.

Table 3.2.2: Age Sex distribution of Anti HCV positivity in Bondo tribe

Age group (in years)	Males Positive/no. tested (%)	Females Positive/no. tested (%)	Total Positive/no. tested (%)
Up to10	0/53 (0)	0/36 (0)	0/89 (0)
11-20	4/47 (8.5)	2/36 (5.6)	6/83 (7.2)
21-30	3/41 (7.3)	2/30 (6.7)	5/71 (7)
31-40	3/47 (6.4)	12/64 (18.8)	15/111 (13.5)
41-50	4/29 (13.8)	7/51 (13.7)	11/80 (13.8)
51 & above	1/8 (12.5)	0/15 (0)	1/23 (4.3)
Total	15/225 (6.7)	23/232 (9.9)	38/457 (8.3)

3.3 Epidemiology of viral hepatitis in tribal populations of Orissa, Madhya Pradesh/Chhattisgarh and Jharkhand

A total of 810 blood samples from 5 primitive tribes of Madhya Pradesh and Chhattisgarh were collected. These contain 76 samples from Abujhmaria tribe, 24 from Baiga, 258 from Kamar, 274 from Bharia and 188 samples from Saharia tribe.

Of the 666 samples tested for HBsAg, 41 were positive (6.15%). Out of 28 HBsAg positive, 4 (14.28%) were positive for HBeAg also. Of the 346 samples tested for Anti HBs, 47 (13.58%) were found to be positive. The Anti-HCV antibodies were detected in 51 (11.48%) out of 444 cases. Anti-HAV antibodies were detected in 600 (96.30%) out of 623 cases (table 3.3.1). The study is in progress.

Table 3.3.1: Marker profile of viral hepatitis

Sr. No.	Marker	No. of Tested	No. of Positive (%)
1	HBsAg	666	41 (6.2)
2	Anti-HBs	346	47 (13.6)
3	Anti HCV	444	51 (11.5)
4	Anti-HAV	623	600 (96.3)
5	HBeAg	28	4 (14.3)



Field work in progress

3.4. Impact assessment of the total sanitation on the health of the villagers living in the Nirmal gram as compared to the non-Nirmal gram villages

Government of India has launched a monetary award termed *Nirmal Gram Puraskar* (NGP) to improve sanitation facilities in the villages. To assess the health impact of the NGP award scheme, a case controlled cohort study was undertaken.

Results of the study indicate that both diarrhoeal morbidity and overall worm infestations from stool samples was lower in NGP villages compared to non-NGP (NNGP). However, despite improvements in the health status in the *NGPs*, Hook worm infestation was common (45%), suggesting that despite improved latrine coverage, many *NGPs* are still practicing open defecation resulting in the transmission of hookworms through faeco-oral route. Furthermore, 100% and 70% of groundwater samples in NNGPs and NGPs tested positive for thermotolerant coliforms and *Enterococus faecalis* respectively. The derivation of these organisms was correlated with high sanitary risk derived from animal faeces and improper greywater disposal in the environment of the house. Further analysis of rotavirus in stool samples indicated that there is no difference in the prevalence in both NGP (1/41, 2.38%) and NNGP (2/84, 2.43%) (Table 3.4.1).

The study concluded that despite, a reduced Disability Adjusted Life Year (DALY) there is still considerable concern over the health hazard associated with both poor hygiene practices and unsafe disposal of liquid and animal waste in NGP. To maximize the health benefit of NGP, liquid and animal waste combined with appropriate hygiene promotion must be undertaken.

Table 3.4.1: Status of Parasitological diagnosis of stool samples from Rewa district

Catego ry of villages	Hook worm	*H. nana*	Round worm	*E. vermicularis*	*E. histolytica*	Mixed Infection	Total
Nirmal Grams (n=86)	14 (45.1%)	7 (22.5%)	2 (6.4%)	5 (16.1%)	0 (0%)	3 (9.7%)	31 (36.0%)*
Non Nirmal Grams (n=43)	9 (47.4%)	6 (31.5%)	3 (15.5%)	0 (0%)	1 (5.3%)	0 (0%)	19 (44.2%)*
Total (n=129)	23 (46%)	13 (26%)	5 (10%)	5 (10%)	1 (2%)	3 (6%)	50 (38.7%)

* Statistically not significant, t-0.91, p>0.05



Constructed toilet in NGP village



Field work in progress