

### **3. SCIENTIFIC PROJECTS**

#### **A. POLICY & PROGRAMME EVALUATION**

##### **Completed Studies**

#### **1. Impact Assessment of ICDS Food Fortification in the states of Uttar Pradesh.**

In order to assess the impact of ICDS food fortification, a baseline and end line survey was undertaken in two blocks of the Kanpur Dehat district, UP. The objective was to examine the prevalence of iron and Vitamin-A deficiencies among children aged 6-59 months using clinical and biochemical indicators in intervention as well as control block. In addition, the project also monitored the supplementation programme. The study was supported by WFP

From each of the 2 blocks, 30 clusters were identified and from each 25 children were selected for clinical assessment of Bitot spot and Anemia. On the whole, the total sample size for clinical assessment was 1500 and for 300 cases blood /biochemical test was done. The salient features of the study are as follows:

- There is considerable improvement in the prevalence of any anemia in both the blocks. Though, significant decline in anemia was noticed in intervention block.
- Significant improvement in Vitamin A deficiency among children at the end line stage in both the blocks.
- Significant decline in the incidence of diarrhea in both the blocks.
- The percentage of severely malnourished children reduced significantly in both the blocks from base line to End line.
- In both the blocks, decline in prevalence of clinical signs of Bitot's Spot was observed. However, significant difference was observed in intervention block vis-à-vis control block.

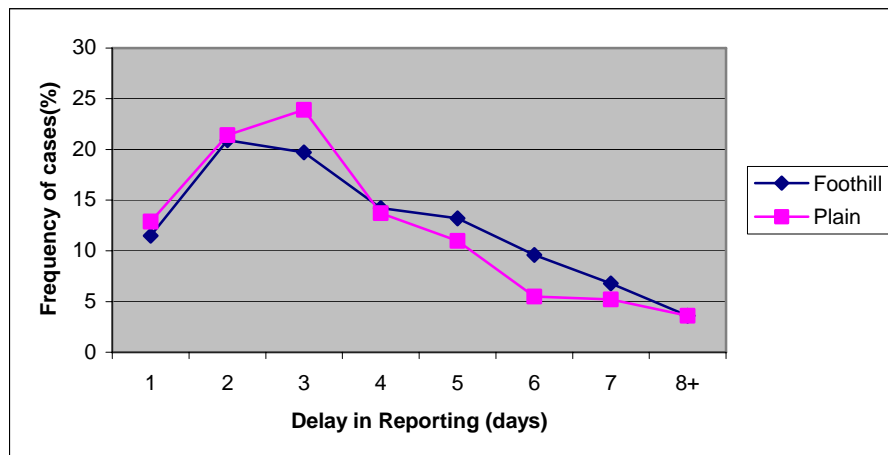
#### **2. A Study on treatment seeking behaviour and reporting pattern of patients to health service centers especially with fever symptom**

The study aimed to understand health/ treatment seeking behaviour of people suffering from fever in two districts of Assam. The fieldwork was undertaken by RMRC, Dibrugarh in the year 2003-05 and data analysis and report writing was done in the Institute. The survey covered 1,989 households who had recently (within 3 months) taken treatment for fever/malaria.

The study found that the patients suffering from fever first approached /consulted Ojha for Tantra & Mantra, Traditional Vaidya, sacrificed birds and performed secret Puja before coming to health centre for treatment. The common symptoms associated with fever were cough and cold (89%), headache (68%), shivering (23%) and vomiting (32%). Though people were aware of malaria symptoms, but they did not consider it important to undertake blood test to confirm the fever; nor

do they understand the need to take early treatment. They also lack adequate knowledge about ways to prevent the spread of malaria. About 40% of the fever cases were observed/treated at home for more than 3 days. During the period, sick patients were given home made medicines (8%), taken to local doctors (6%) and health worker (3%) and about 18% purchased medicines from medical store directly. Delay in reporting to the health center was observed more among households in foothills than those from plains (see the fig 1). The reasons cited for delay in visiting a health centre was difficulty in arranging money for the treatment (37%), lack of transport (15%), not getting leave (5%) and prior commitment of work (22%). While, 36 % of households took fever patients to health centre only when they perceive the condition to be serious. It was the senior family member or males in the household who decided on whether to visit health center or not.

Figure 1: The delay in reporting pattern of household fever cases to health centers.



Indoor patients at government and private hospitals seem to be satisfied (87.7%) with nursing and care. However, 53.4% of patient's reported unsatisfied of medicines supply and this was reported more by patients admitted in the Govt. health centre than private health centre

Strengthening the Govt. health service centers, especially in rural areas like PHC/Community Centers/Sub-Centers needs to be given priority. Initiative to start more health centres with public private partnership can also be encouraged. Regular community health education programs in rural areas could encourage people to seek health services for fever without much delay. The employers, who are mainly tea garden owners, should be encouraged, to provide paid leave to their employee suffering from fever.

## Ongoing Studies

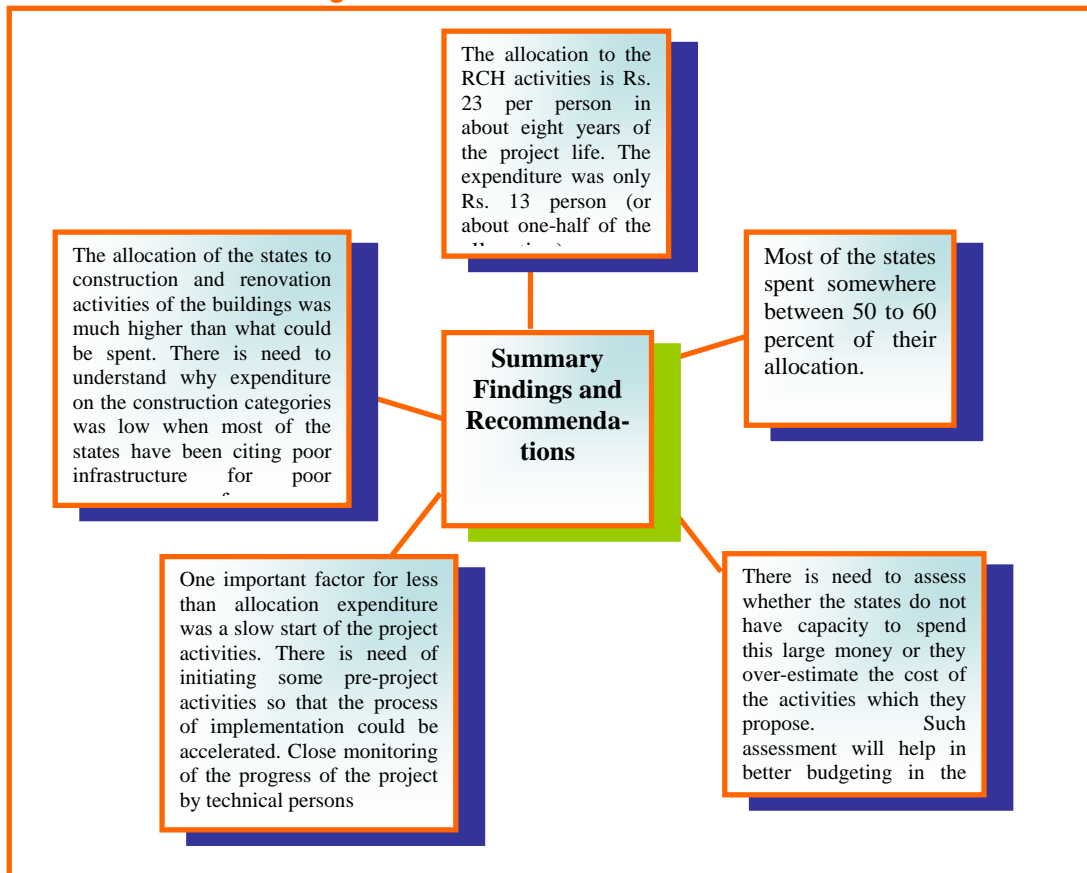
### 3. Impact Assessment of ICDS Food Fortification in the State of Uttarakhand

The objective of the study is to determine the baseline prevalence of iron and Vitamin-A deficiencies among children aged 6-59 months using clinical and biochemical indicators for the state of Uttarakhand. The study proposes to do a baseline survey followed by end line survey in two blocks of Uttarakhand to assess whether ICDS food fortification has been able to reduce prevalence of iron and vitamin A deficiencies. Besides, the study also monitored the supplementation programme. The study was supported by WFP. The baseline survey is completed. At present, analysis of end line dataset is in progress.

### 4. Analysis of data of India's District Level Household Survey (DLHS) under RCH programme finding out the impact of first phase of RCH programme

The objective of the study was to review the RCH Programme and assess the impact of the same. The methodology was to analyze the DLHS data collected during the two phases (1998-1999 and 2002); identify the common districts covered in the two phases; analyze the health status of the country in these two periods based on the indicators. The study is supported by the MOHFW.

#### Schematic diagram on allocation of RCH funds and utilization



The project has finalized the indicators through consultative meetings with experts. An appraisal of the RCH programme inputs was made. Two hundred and seventy nine (279) districts have been identified as common in the two phases. Tabulation plan for the analysis by linking various inputs with the output indicators finalized. The analysis is in progress. First chapter of the report is completed which describes the allocation of funds and resources to different RCH activities and its utilization.

## **5. Integrated Behavioral and Biological Assessment (IBBA) National Highway Segments**

The study is supported by Bill and Melinda Gates foundation. Family Health International (FHI) is providing technical support.

The objectives of the study are as follows:

- Measure trends in key behavioral and biological indicators among the Avahan target groups to provide feedback to programs
- Make available data that will be used for estimating sizes of populations targeted by the project
- Provide selected data for impact modeling

The Key indicators are as follows:

### Behavioural

1. Sexual risk behavior including number and type of sex partners (“commercial”, “regular” & “non-regular”)
2. Condom use with different types of sex partners
3. Other practices related to condom use & safe sex
4. Drug & substance use (including injecting & equipment sharing)
5. Exposure to Avahan & other HIV/AIDS prevention interventions

### Knowledge

6. Knowledge of STIs & STI care-seeking behaviors
7. Knowledge & attitudes toward HIV/AIDS
8. Perception of HIV & STI risk

### Mobility

9. Mobility patterns influencing sexual behavior and risk
10. Biological Indicators
11. STI prevalence
12. HIV prevalence
13. HIV incidence (BED-CEIA validated for Indian sub-type C)

The study population consists of truck drivers/helpers aged 18 years and above who travel more than 800 km on a single trip along the identified national highway corridors. The proposed survey plans to collect data from the drivers waiting at transshipment locations (TSL) where various transport establishments (booking agents/transport companies) have their offices. The sampling methodology has two stages- primary sampling units (PSU) are the transport establishments/brokers/transporters/fleet owners and from these offices truckers would be selected. Time location cluster sampling (TLCS) will be used to sample out of long distance truckers/helpers from PSUs, i.e., the truckers who are operating through the selected brokers. The total sample size sample size of truck drivers is 3000 drivers and 500 helpers.

At present pre-survey assessment of the study is being planned before the execution of sampling framework development and tool for the main survey is undertaken.

## **B. EPIDEMIOLOGY**

### **Completed Studies**

#### **6. Point Prevalence of Tuberculosis among Mw Vaccinated population of Ghatampur, Kanpur**

The study was carried out in collaboration with JALMA, ICMR, Agra, during 2001-03. The study was funded by Department of Biotechnology, Government of India. A brief discussion of the study is as follows:

- A house-to-house survey was carried out 10 to 13 years after vaccine, to identify and subsequently treat cases suffering from pulmonary tuberculosis in the defined population.
- The net target population was 23,261 of which 11,520 were in the vaccinated group and 11,741 were in the placebo-administered group.
- About 74% of the population could be examined and 69 cases of pulmonary tuberculosis patients were identified.
- Twenty-nine cases belonged to vaccinated group while 40 cases were from the placebo-administered group.
- Eighteen cases were new sputum smear positive cases (Category I) of which 5 were from the Mw vaccinated group and 13 were from the placebo-administered group. The protective efficacy for this type of TB patients has been estimated as 62%.
- The rest of the cases, i.e. 51 cases have taken treatment irregularly earlier and belonged to Category II.
- On analyzing the records as well as old history and clinical examination of the defined above population, 137 patients were diagnosed as having suffered from pulmonary tuberculosis during the intervening period of 1992-2001 (53 in the vaccinated group and 84 in the placebo administered group)
- The occurrence of pulmonary tuberculosis was significantly lower in the Mw vaccinated group as compared to placebo-administered group.
- All the patients responded to DOTS, and no case of drug resistant tuberculosis was found in the area.

- It was observed that contacts suffered from leprosy did not suffer from pulmonary tuberculosis and vice-versa.
- Two doses of killed Mw vaccine administered at an interval of 6 months to healthy contacts of index leprosy cases appears to have a prophylactic role in the prevention of pulmonary tuberculosis in the area.

## **7. An exploratory study related with bio-behavioral risk factors associated with cervical cancer**

The objective of the study is to review the risk factors associated with cervical cancer and also review the screening strategies used for the control of the same. Carcinoma of the cervix is one of the leading malignancies in the developing countries including India. The data generated through the National Cancer Registry Program of ICMR shows that breast and cervix cancer accounts for about half of the total cancer in females.

Review of the Risk factors associated with cervical cancer is completed. The work has been published in peer-reviewed journal. The review of the risk factors is based on the data available from the developed countries, which rely mainly on cytology screening on regular basis. The important life styles factors associated with cervical cancer which are amenable to primary prevention strategies such as health education are, early sexual debut, multiple sexual partners, menstrual hygiene and unprotected sex. These factors are essentially conducive to the transmission of an etiological agent; the high-risk type of human papilloma viruses, the more proximal cause in the web of causation. Barrier method of contraception and prophylactic vaccine in future could help to check the transmission of the virus. Role of smoking and oral contraceptives was also examined. Thus, review of literature shows that, till the facilities for mass scale screening are developed in developing countries, the primary prevention approaches could certainly help to check the incidence of the disease.

Currently, review of the screening strategies is in progress. The aim is to identify appropriate strategies that could be adopted in countries like India where resources are scarce but female susceptible to such cancer is quite large. Hence, alternate strategies need to be examined on the basis of relative efficiency. Hospital based opportunistic screening has been considered as one of the initial approaches that could be adopted. Unaided and aided Visual inspection of the cervix is one of the strategies that could be adopted for the community settings. The procedure has been improved by applying 5% Acetic acid to the cervix and then carrying out visual inspection, the procedure has been termed as VIA. Various studies carried out in different parts of the world have demonstrated that with the application of acetic acid, the specificity improves to about 75%. This could be considered as the optimum strategy in developing countries. It has also been demonstrated that the paramedical workers could be trained to view the cervix. HPV screening has been demonstrated as the most efficient strategy in developed countries, which could be adopted on limited basis in Indian settings. Various methodological issues related with different strategies have been discussed.

## Ongoing Studies

### 8. Integrated Analysis of HIV/AIDS Epidemic in India

This project was taken up with the following objectives:

- To gain comprehensive understanding of the factors that have largest impact on HIV epidemic in India
- To understand the data requirements for using models to estimate the HIV trend and its impact parameters.
- Models to be used for assessing the level of behavior change that has to be achieved in order to get desirable control of the epidemic. Models will also help to understand the care and support needs including treatment for adults and children

UNAIDS has developed new packages like Estimation and Projection Package (EPP), Spectrum and AIDS Impact Models (AIM) that helps to understand the dynamics of HIV/AIDS epidemic. However, the specific data required for using these models effectively are rarely available due to the sensitive nature of the epidemic characteristics. In the absence of reliable information on these parameters, an attempt has been made to incorporate current HIV estimation procedure in the package and study the epidemic spread in STD and ANC population. WHO supports the project.

The study is in progress. The expert group on model based estimation of HIV burden in India suggested to disaggregated estimates at state level and to utilize the data generated at state level more effectively. Capacity building of the state for the use of the models was also mentioned. It was decided that initially four regional Institutes would be capacitated in order to partner with the Institute for implement the activity at state level. Accordingly, a workshop was organized to train scientists from five Institutions, International Institute for Population Sciences, Mumbai for West; National Institute of Epidemiology, Chennai for South; PGI, Chandigarh for North and RMRC, Dibrugarh for East and North East. Capacity building of the states with respect to the estimation of HIV burden will basically concentrate on (a) Indian system of HIV surveillance (b) Areas of small research required with guidelines to improve the surveillance (c) Increase the ownership of data by the states and (d) Quality of surveillance through effective monitoring. At National level NIMS compared the HIV estimate using three approaches and the comparison of models for assumptions used in each and the methodology is in progress.

## C. MODELLING & STATISTICAL COMPUTING

### Completed Studies

### 9. Baseline Information and Projection on Maternal and Child Health Condition in India

The present investigation aimed to study the changes in each of the components of under-five mortality (U5MR) during the period 1978–2002; analyze the factors associated with the apparent stagnation of child mortality rate in India and develop projection scenarios of the Infant Mortality Rate (IMR) and U5MR by

states by the year 2016. The study also examined the impact of utilization of antenatal and natal services on neonatal mortality. The study was partially supported by National Commission on Economics and Health, MOHFW, Govt. of India.

The trend of U5MR in India and its states have declined during the period 1978-2002. However, the pace of decline has not been constant; it has sometimes slowed down or stagnated and at times it has increased. Analysis of two rounds of National Family Health Survey (NFHS-1, NFHS-2) depicted an inverse relationship between child mortality and the socio-economic factors including education of mother and standard of living of the household. Keen observation of child mortality data revealed that the differences in child mortality continued even after controlling the effect of socio-economic status of the household. The differences in child mortality can be attributed to complex set of social, economic and biological factors. In addition, the decline in child mortality could also be a result of programme factors such as public health reforms, access and quality of health care services and community mobilization.

The trend in IMR for the country over the past 25 years revealed that the share of neo-natal mortality has remained more or less constant but an appreciable decline was observed in case of post-neonatal mortality. The decline in post-neonatal mortality may be due to strengthening of antenatal, natal and delivery care interventions. Further, a rapid decline observed in IMR and U5MR during 1980-90 was followed by a period of stagnation from 1993, as it was hovering around 72 per thousand live births. The stagnation indicates that the programmes addressing reduction in child mortality were not effective in reducing the IMR as a large proportion of infants were dying in neonatal stage. Thus, the programmes such as Reproductive and Child Health (RCH) programme, immunization programme and ICDS were not really geared towards capturing infants dying during the neonatal stage. The other reason of IMR stagnation could be inadequate access to health and other types of services among disadvantaged/vulnerable groups.

The study concluded that India would not be able to achieve the set target of 30 IMR by 2010 unless concerted efforts are made to improve the content and quality of RCH services and concentrate on community mobilization strategies. In addition, economic and social reforms should continue along with programme interventions so as to bring about appreciable reduction in IMR and child mortality in the near future.

## **10. Causes of Death by Verbal Autopsy**

The objectives of the study was to first know the socio-economic profile of households that have reported maternal and neonatal deaths in the two states, namely Bihar and Rajasthan and second to assess the probable causes of deaths. The funding was made available by ICMR.

In each of the two states, the study covered urban and rural population on a sample basis. In all, 180 clusters, 49 wards from urban, 131 villages from rural areas were selected. In the selected cluster, information on deaths during reference period (January-December) was collected. Information on possible medical causes of death, including stillbirth was collected using verbal autopsy

through a detailed questionnaire. The questionnaire also had a module on socio economic factors contributing to causes leading to death.

Total population covered in Rajasthan was 3, 25,614. The cause specific analysis, based on ICD-10 classification, revealed that 80 per cent of total deaths were due to four major causes, infectious and parasitic diseases (56%), respiratory disorders (22%), circulatory disorders (13%) and sign and symptoms disorders (10%). It was also observed that infectious and parasitic diseases accounted for 56% of the deaths in the age group of 1-5 years. The common causes of stillbirths were disorders related to short gestation period and low birth weight, ante-partum hemorrhage in the mother, anemia, obstructed labour, premature rupture of membrane etc. The leading causes of neonatal deaths were disorders related to short gestation period followed by pneumonia, tetanus neonatal, birth asphyxia, diarrhoea and gastroenteritis of presumed infection origin and others. The post-neonatal deaths were predominantly result of diarrhoea and gastroenteritis followed by pneumonia, injury, fever and protein energy malnutrition. The causes for maternal deaths were post-partum hemorrhage followed by anemia, and others. Both post-partum hemorrhage and anemia could be easily prevented by proper obstetric care. The study reinforces a need to have emergency obstetric care centers at first referral units, especially in rural areas.

### **Ongoing studies**

#### **11. HIV Estimation and Analytical Study of HIV Sentinel Surveillance Data 2005**

The institute is involved in HIV estimation since 2002 when NACO invited the Institute to Review the HIV estimation methodology and validate the assumptions, provide estimate HIV burden in the country every year based on HIV sentinel surveillance (HSS) data. Since 2002, the Institute along with National Institute of Health and Family Welfare (NIHFW), New Delhi is carrying out independent analysis of HSS data to minimize error. The assumptions on urban-rural and male-female ratio in respect of HIV infection and STD prevalence used for estimation since 1998 had been validated on the basis of sentinel surveillance data and community based survey on STI prevalence in the year 2003. Before the release of HIV Estimates, NACO and ICMR jointly convene a series of meetings with a group of experts consisting of eminent Epidemiologists, Bio-statisticians and experts from international organizations such as WHO, UNAIDS etc.

The population considered from all the risk groups included only the age group 15-49 so that the HIV estimate derived is for the adult population prone to be exposed by high-risk behavior and/or exposed to bridge population. However, the newborn HIV children are also estimated using the information on infected mothers. Following table gives the assumptions that have been used to estimate HIV burden of the country.

### Assumptions used in HIV estimation

STD Prevalence	Assumptions/Epidemic Zone						
		1998-2002			2003-04		
		High	Moderate	Low	High	Moderate	Low
	Urban	10%	7%	5%	6%	6%	6%
Rural	5%	5%	5%	6.3%	5%	5%	
Urban-Rural Differential in HIV prevalence	Assumptions/Epidemic Zone						
		1998-2002			2003-04		
		High	Moderate	Low	High	Moderate	Low
	STD	3:1	3:1	3:1	1:1	1:1	1:1
ANC	8:1	8:1	8:1	2.4:1	2.4:1	2.4:1	
Male-Female Differential in HIV prevalence STD attendees	Assumptions/Epidemic Zone						
		1998-2002			2003-04		
		High	Moderate	Low	High	Moderate	Low
		1.2:1	2:1	3:1	1.2:1	2:1	3:1
Replacement for 'zero' prevalence	Average Prevalence of Low Prevalence States						
		1998-2002	2003	2004	2005		
	STD	1.6	1.61	1.43	1.32		
	ANC	0.5	0.32	0.25	0.169		

In 2005, the total number of sentinel sites was 704, which included 175 STD sites, 268 ANC sites, 30 IDU sites, 18 MSM sites, 83 FSW sites, 126 ANC (rural) and 2 TB sites, 1 Military Recruitment Group (MRG) and 1 Eunuchs site. IDU, MSM and FSW sites include targeted intervention sites. The HIV estimates are derived on the basis of HIV prevalence observed from STD, ANC, IDU, MSM and FSW sites. ANC rural sites are included for studying the epidemic characteristics in rural area. They are not included for estimation as the people from both urban and rural areas are attending usual sentinel sites. The HIV estimates for the year 2005 are based on information available from 532 out of 574 sentinel sites where more than 75% of the sample size was covered. This includes 157 STD sites, 261 ANC sites, 25 IDU sites, 17 MSM sites and 72 FSW sites. The estimated HIV infection for the year 2005 is 5.206 million. In addition, estimate of HIV infected children born to infected mother was 56,787. The annual fluctuations on observed prevalence in high and moderate prevalence states for STD patients and ANC women are shown in charts a to d below.

The HIV epidemic trend in India is analyzed according to the three epidemic zones considering mean and median prevalence for all sites and consistent sites (STD and ANC sites). Table 1 presents the districts in different states that have showed statistically significant changes in HIV prevalence during 1998-2005. The six districts that have showed statistically significant increasing trend in STD are: Gulbarga in Karnataka, Pune and Chandrapur in Maharashtra, Central district of Delhi, Balasore in Orissa and Bardhaman in West Bengal.

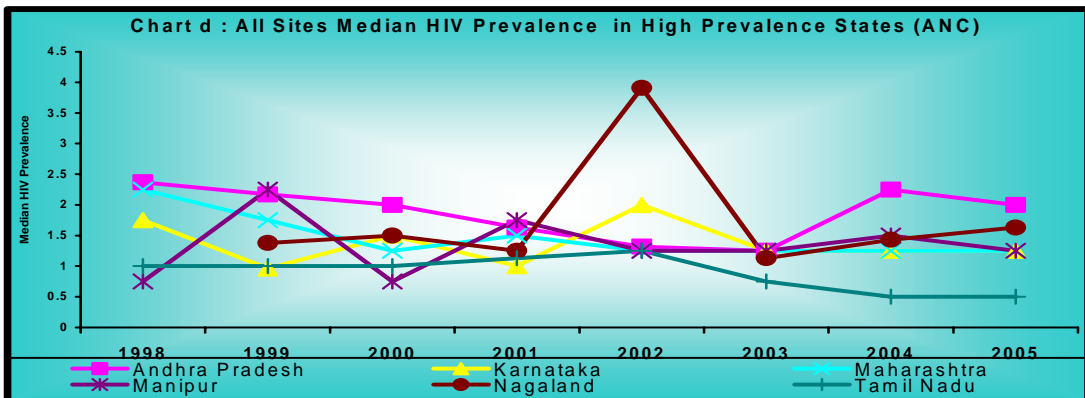
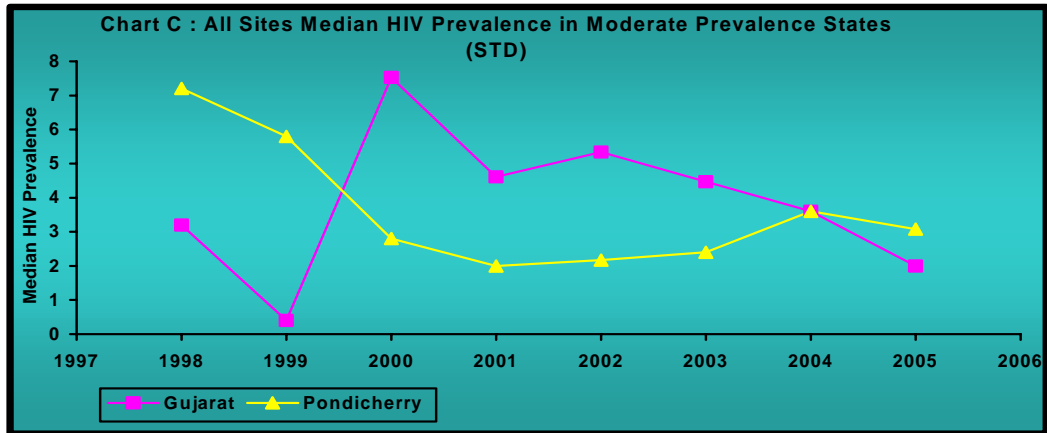
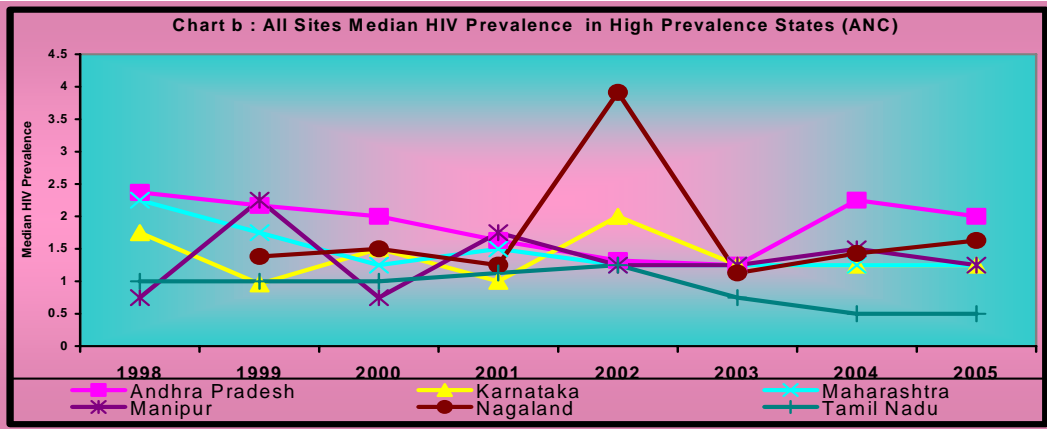
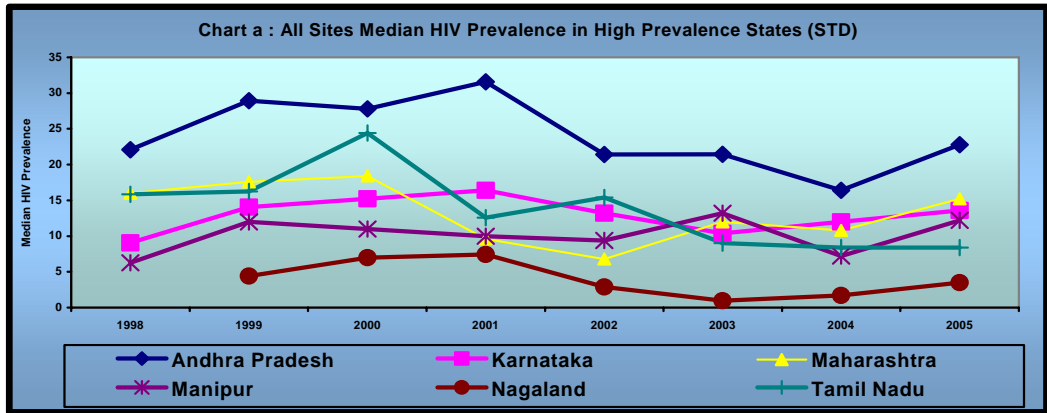


Table 1 Districts with significant changes in Prevalence (1998-2005)

State	District	Risk	Direction of $\bar{P}$	P value
Andhra Pradesh	East Godavari	STD	decreasing	0.0290
Karnatka	Gulbarga	STD	increasing	0.0030
Maharashtra	Pune	STD	increasing	0.0170
	Chandrapur	STD	increasing	0.0100
Tamil Nadu	Salem	STD	decreasing	0.0090
	Chennai	ANC	decreasing	0.016
Gujarat	Banas Kantha	STD	decreasing	0.0130
	Vadodara	STD	decreasing	0.0009
	Rajkot	ANC	decreasing	0.021
Delhi	Central	STD	increasing	0.0210
Madhya Pradesh	Sagar	ANC	increasing	0.047
Orissa	Balasore	STD	increasing	0.0280
Uttar Pradesh	Ghaziabad	STD	decreasing	0.0330
West Bengal	Barddhaman	STD	increasing	0.0480
Pondicherry	Pondicherry	ANC	decreasing	0.024
Kerala	Thrissur	ANC	decreasing	0.023

While, five districts showed statistically significant decreasing trend and they are East Godavari in Andhra Pradesh, Selam in Tamil Nadu, Banaskanta and Vadodara in Gujarat and Ghaziabad in UP.

In case of general population, statistically significant declining trend in HIV prevalence was observed in five districts, viz. Chennai in Tamil Nadu, Rajkot in Gujarat, Sagar in Madhya Pradesh, Thrissur in Kerala and Pondicherry. None of the districts in India showed statistically significant increase in HIV prevalence among general population.

## 12. Estimation of Mortality due to HIV/AIDS

The technical subcommittee for estimation of mortality related to HIV/AIDS constituted by the National Expert committee on AIDS mortality estimation suggested the following activities:

- Estimating excess deaths which could be attributed to AIDS in HIV high prevalence states using SRS age-specific death rates of males and females aged 15-49 using kink regression method.
- Analyze data from the civil registration system particularly under the medical certification of causes of deaths in urban areas from two states for the estimation of mortality related to HIV/AIDS.

- Application of spectrum model for estimating AIDS mortality using the sentinel surveillance data
- Production of a detailed report with comparisons of AIDS deaths estimates using SRS data, surveillance data and spectrum model.

The committee identified National Institute of Health and Family Welfare (NIHFW), New Delhi for estimating excess deaths. For Application of spectrum model the committee identified International Institute for Population Sciences, Mumbai and National Institute for Medical Statistics (NIMS), New Delhi. The Institute was also given the task to prepare a detailed report with comparisons of three methods. The study is undertaken with a grant from UNAIDS.

The study is in progress. The results of the initial analysis carried out for a few states were presented before the experts. The suggestion was to improve the results incorporating additional data available from SAPA data. The SAFA data was reviewed and the information available is not appropriate for estimation.

### **13. Estimation of Orphans and Vulnerable Children (OVC) due to HIV/AIDS**

Adult and child mortality rates have increased substantially in many countries due to HIV/AIDS. Many people who die from AIDS leave behind young children as orphans. More children are orphaned in India from other causes than AIDS, but AIDS orphans face stigma and discrimination. It was, therefore, proposed to Estimate the number of HIV+ children, AIDS and non-AIDS orphans, and maternal, paternal and dual orphans for strategic planning for support to orphans.

### **14. Statistical Modeling of HIV/AIDS Epidemic**

The objectives of the study are as follows

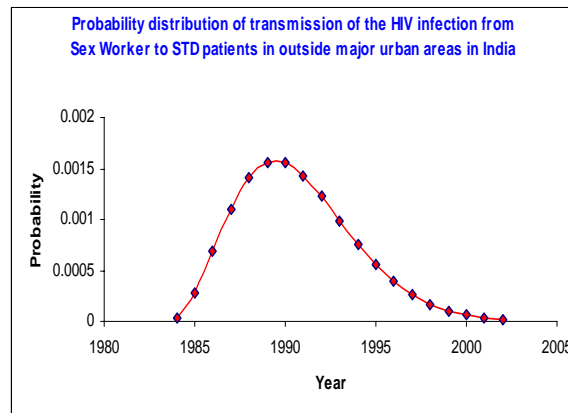
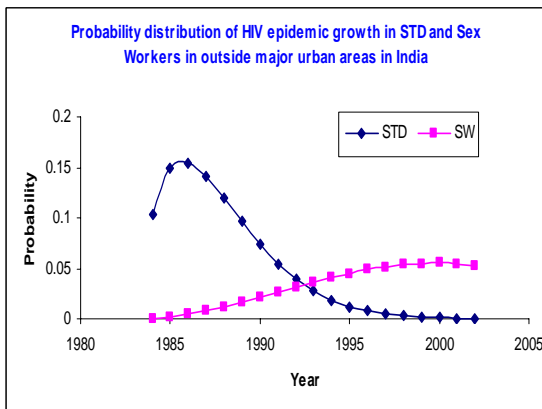
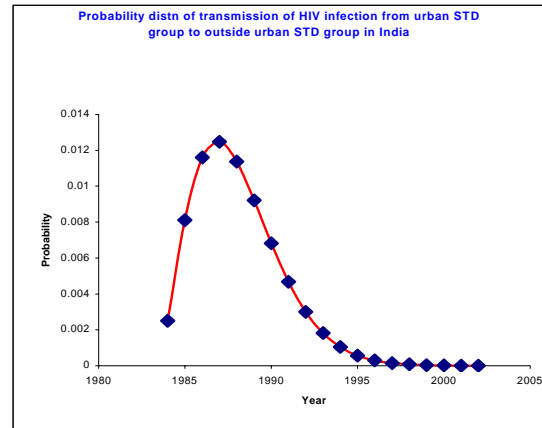
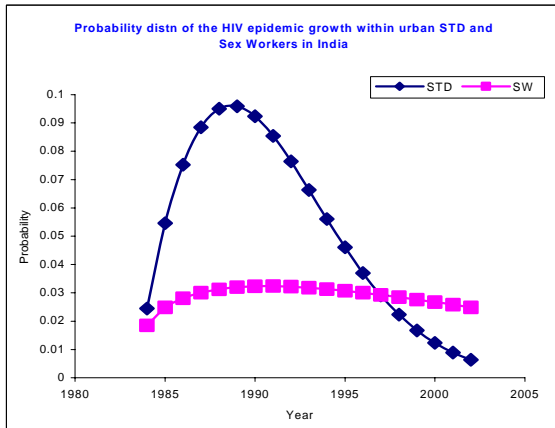
- To derive probability distribution of the time to develop AIDS (incubation distribution) since HIV infection assuming Weibull distribution.
- Estimate the HIV intensities and projection of AIDS cases from reported AIDS cases using EM algorithm.
- Classify the progression of AIDS since HIV infection using simulated CD4+ count and viral load values at the time of seropositivity diagnosis and
- Estimate the HIV transmission rate among different risk groups and project the number of HIV infections in various stages.

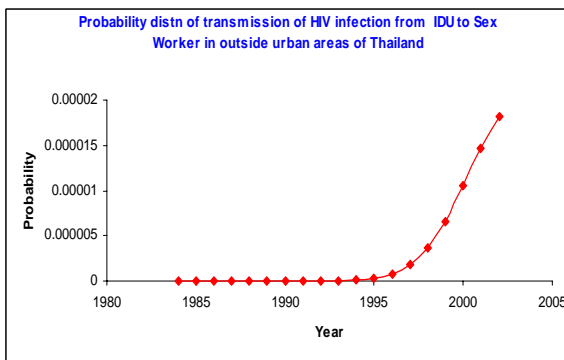
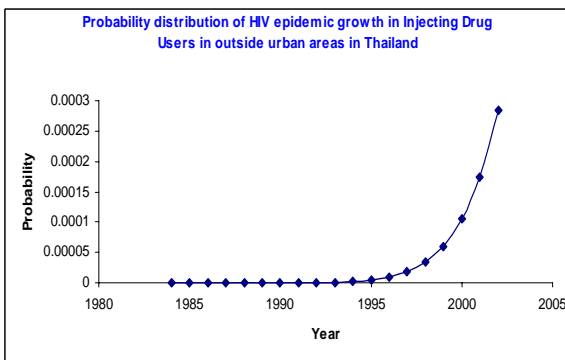
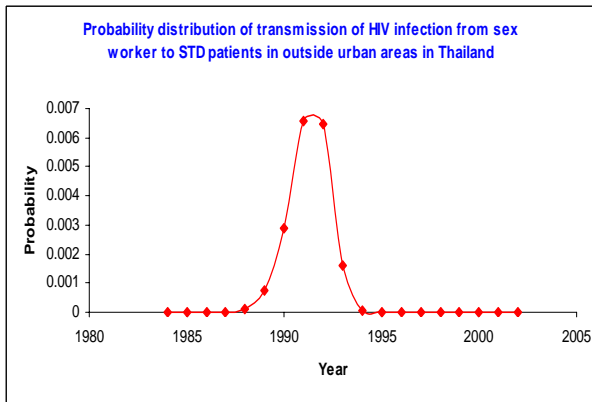
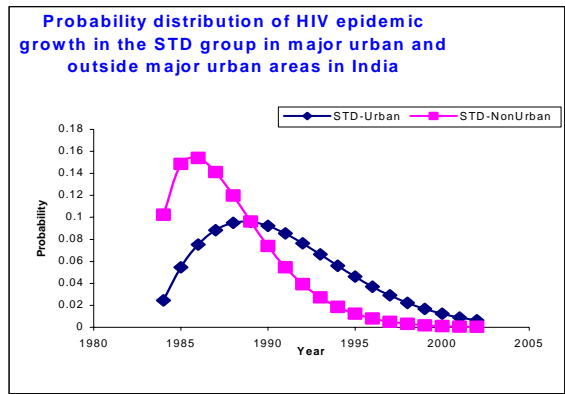
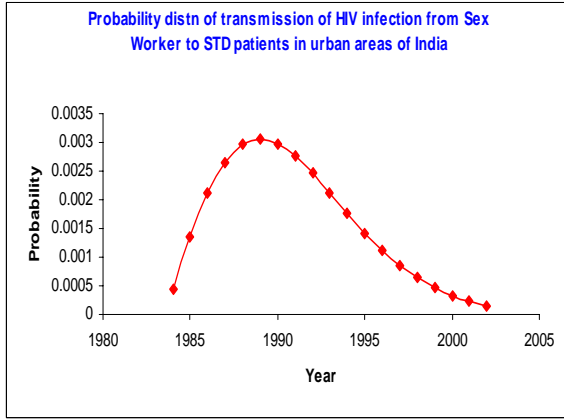
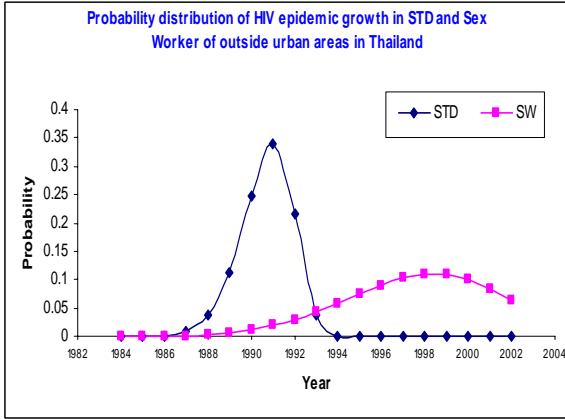
This is a project sanctioned under ICMR Task Force in Statistics.

The probability distribution of incubation period and time to develop AIDS infection has been developed as part of the exploratory research on HIV/AIDS. Further, models have been developed to study the transmission rates between risk groups and spread from urban to rural areas in different countries.

## The epidemic growth within each risk group and between risk groups in India and Thailand

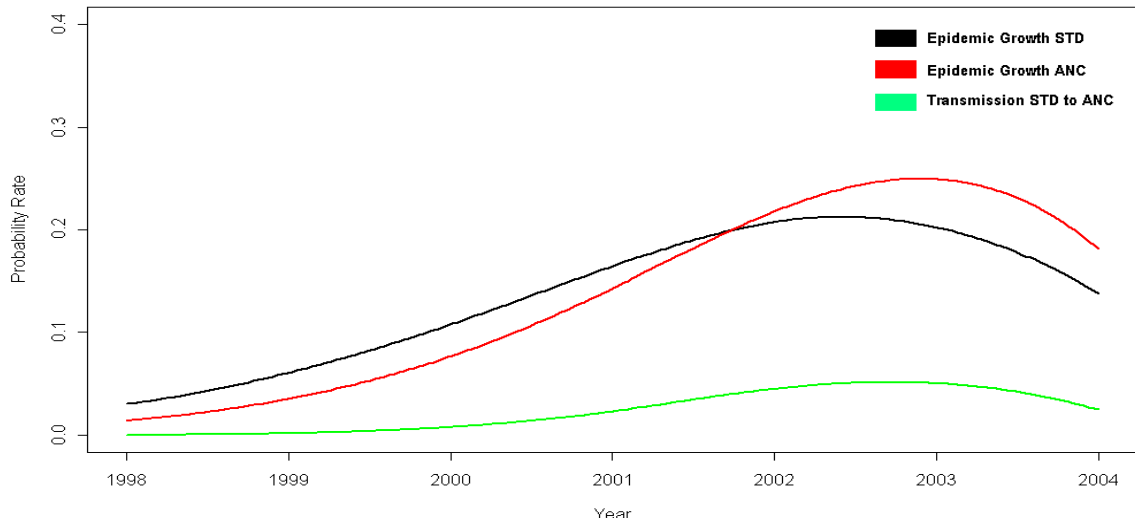
Log-normal, Weibull, Exponential and Gamma distributions have been tried to estimate expected growth rate within the risk groups. Weibull distribution fitted best for most of the risk groups. However, shape parameter is less than 1 the Weibull model does not fit well. The growth curve and transmission has also been studied using regression approach. The comparative interpretation is in progress. Following charts shows the growth of the epidemic within place of residence and risk groups and transmission of the infection between groups.



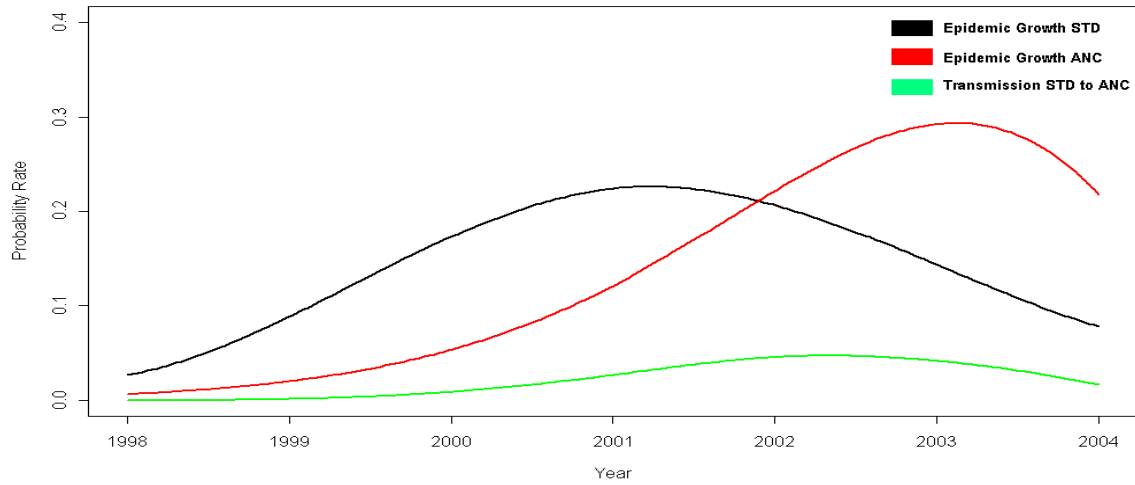


HIV sentinel surveillance data has also been used to study the spread of the epidemic from high-risk population to general population in four high epidemic states. Some of the results are shown in the following charts.

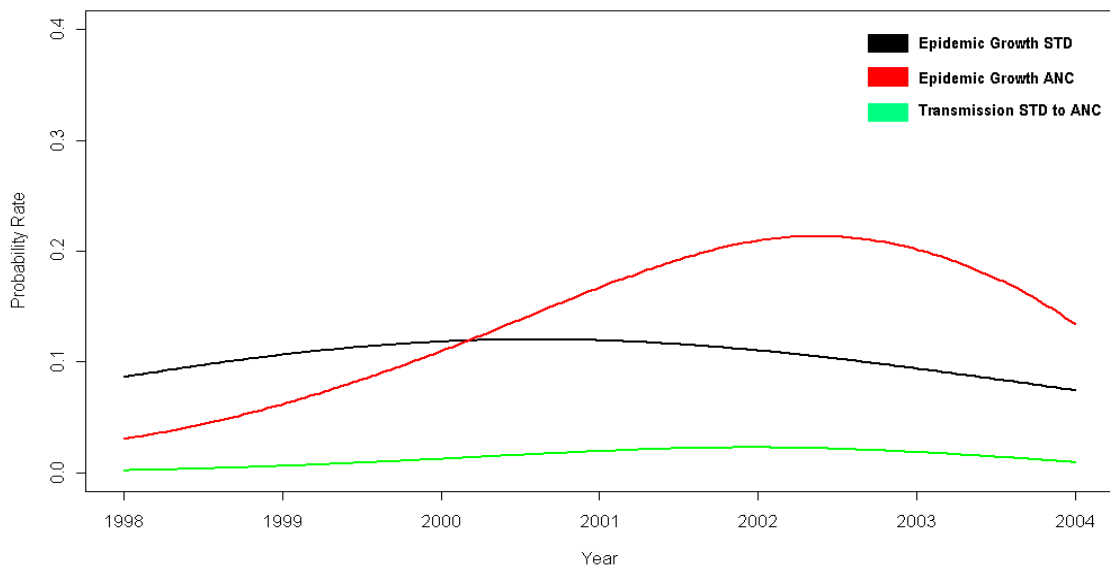
**Andhra Pradesh: Epidemic Growth of ANC and STD & Transmission Rate From STD to ANC**

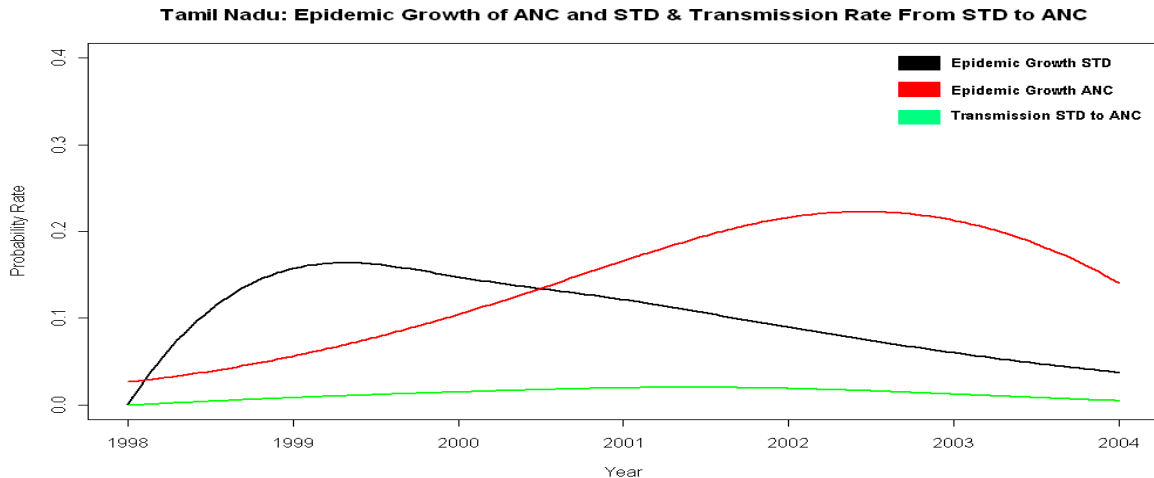


**Karnataka: Epidemic Growth of ANC and STD & Transmission Rate From STD to ANC**



**Maharastra: Epidemic Growth of ANC and STD & Transmission Rate From STD to ANC**





Number of HIV positive individuals in India has been estimated to be over 5 million since 2003 wherein crude estimate of infected new born children ranges between 55-60 thousand. For effective implementation of the prevention, care and support of the HIV/AIDS, the planners and policy makers require estimates of several parameters such as treatment cost, number of infected mothers and children, infrastructure requirement etc. Modelling is the major tool to estimate the impact parameters of HIV/AIDS and the resource requirement for support and care. India being vast in area and diverse in its socio-cultural and epidemiological characteristics, micro level capacity building is required to achieve state/regional level estimates which in turn will help achieving micro level planning for care and support of HIV/AIDS children and adults.

The institute will be comparing different models for HIV estimation and also build capacity at state level to use model based estimation methods to derive state level estimates of HIV burden, mortality and other impact parameters of HIV epidemic.

UNICEF has granted funds to estimate children in need of ART for India and also to build capacity at state level to use the methods, derive state level estimates and generate data required for model input at state level.

The objectives of the study are to develop National estimates of children in need of ARV treatment, build capacity at state level to generate state specific estimates, review the results and develop advocacy strategy for policy makers through expert group meetings and build capacity of the institute in mathematical modelling of infectious diseases through participation in the short course on 'Epidemiology of Infectious Diseases' at Imperial College, London.

## **D. INFORMATION/ DATA MANAGEMENT**

### **Ongoing Studies**

#### **15. Health Sector Policy Reform Options Database (HS-PROD)**

The objective of the study is to develop an online database ([www.prod-india.com](http://www.prod-india.com)) of Indian good practices and innovations in health services management. The website is a property of Central Bureau of Health Intelligence (CBHI), Ministry of Health and Family Welfare (MOHFW). Since 2005, the Institute is working in collaboration with CBHI for the development of the website. The work entails increasing the number of entries in the website and advocating use of the website. European Commission Technical Assistance (ECTA) provides the technical support. The funds were made available by European Commission's sector Investment programme. The task included identifying the initiatives/reforms by scanning of Newspapers, websites, reports, contacting programme implementers and making a field visit. Thereafter, collated information was put in a standard format and shared with state officials for concurrence. Once the entry is completed it internally circulated before sending them for approval to Project Management Group members. Once approved by PMG, the entries are uploaded on the websites.

During the reporting period, following activities have been undertaken:

- a. Prepared the project activity plan and guidelines to review the progress;
- b. Appointed 2 Research Consultants who were given one month orientation training on development of HS-PROD by ECTA, New Delhi.
- c. CBHI constituted PROD Management Group (PMG) for reviewing the entries and monitoring the progress. The institute made presentation on its progress to the PMG.
- d. The Institute organized internal meeting of HS-PROD working group (NIMS, CBHI and ECTA) every month to monitor the progress.
- e. The website contains 134 entries of which 46 have been uploaded by the Institute in between May 2005-March 2006.
- f. 3 regional partnership workshops on HS-PROD were organized for capacity building of state health officials including those overseeing National Rural Health Mission (NHRM), officials of CBHI state units and non-government organizations.
- g. HS-PROD website was demonstrated at following forums:
  - o Field visit to Rajasthan (September 19<sup>th</sup> to October 3, 2005)
    - Directorate of Health Services.
    - CARE Rajasthan.
    - State Institute of Health and Family Welfare, Jaipur.
    - Indian Institute of Health Management Research, Jaipur.
  - o National Workshop on Public-Private Partnership in the Health Sector in India, organized by NIHFWS, New Delhi during 28-30 November 2005.

Preparations are being made to increase the number of entries in the website.

## **16. Infrastructure and Capacity Building for Clinical Trial Registration**

The institute has submitted a proposal to Department of Science and Technology (DST) for funding of National Clinical Trial Registry. DST has approved the project.

## **17. Development of Health Research Information System**

The aim of the project is to develop a Health Research Information System for NIMS.

Progress of the study

The prototype system software has been successfully installed. Onsite training of the software is going on. The Beta version would be installed after the successful completion of the software.

## **E. OTHERS**

### **Completed studies**

## **18. Study on Job Satisfaction Level among ICMR Scientists**

The study aims to examine the level of job satisfaction of ICMR scientists, in various institutes of Indian Council of Medical Research. In order to sustain high quality research and the growth of the organization, it is important to ensure that the scientists and the other supporting staff are satisfied with working environment, including facilities available to carry out their work and recognition of their efforts. The study intends to apprise the management about the contextual work environment of the scientific staff of ICMR spread across the country.

The survey work related to the study has been completed. The consultant and one of the coordinators of the study personally visited all the Institutes under ICMR except Port Blair. The response rate was around 85 %.