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INDIAN COUNCIL OF
MEDICAL RESEARCH NATIONAL INSTITUTE OF
MEDICAL STATISTICS



ANNUAL REPORT

2018 – 2019



ICMR-NATIONAL INSTITUTE OF MEDICAL STATISTICS

Ansari Nagar

New Delhi

2019

ANNUAL REPORT (1-4-2018 – 31-3-2019)



ICMR-NATIONAL INSTITUTE OF MEDICAL STATISTICS
Department of Health Research
Ministry of Health and Family Welfare
New Delhi
2019

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Director's Desk



It is my pleasure to present the annual report of the ICMR-National Institute of Medical Statistics (NIMS) for the year 2018-19. The essential link between scientific research and its relevance to the programme or policy can be provided by statistics as it makes interpretation authentic and understanding easy. Our Institute has emerged from the vision of the Indian Council of Medical Research (ICMR) to setup a separate institute with expertise in medical statistics, data analytics, mathematical modelling and programme evaluation. This is perhaps one of its own kinds in the country. The thrust areas of the Institute are research, education and dissemination of statistical science. In tune with the changing times the Institute is constantly endeavouring to be at the cutting-edge of medical statistics and hence has transformed from hypothesis testing methods to evidence-based medicine and meta-analysis, from conventional statistics to modern multivariate data analysis and small computational methods to big data analytics.

The Institute is undertaking a number of flagship programmes, of which the Clinical Trials Registry - India (CTRI) is one. CTRI is functioning at the Institute since 2006 facilitating registration of the clinical trials in the country. It has registered over 19000 trials on its portal till now. I am honoured to say that this Institute has been identified by WHO to advise on the establishment of Clinical Trial Registry at Nepal Health Research Council. The Institute has been organising, from time to time, several national and international conferences and workshops to sensitise and capacitate researchers in the registration process.

The Institute continues to act as the nodal agency of NACO for developing national estimates of HIV prevalence and burden in India using various internationally accepted modelling methods.

The National Burden of Disease study sponsored by MoHFW was spearheaded by our Institute and has been successfully completed. A study on comparing methods of assigning causes of death supported by WHO and MoHFW was yet another study with national and international importance undertaken by the Institute. ICMR-NIMS carried out research on marginalised sections of the society through its programmes in tribal areas. The Scientists of the Institute delivered invited talks/lectures at various important scientific events. The director and other senior scientists have been on several scientific committees of national importance both as experts and also in advisory capacity.

I am happy to inform that efforts are underway to expand the activities of the Institute by setting up health economic unit and big data and artificial intelligence centre to analyse large volumes of data, using deep learning and machine learning techniques. As part of its capacity building and dissemination activities, the Institute conducts periodic workshops on the application of different statistical methods and statistical softwares to train various students/researchers/medical personnel from all over the country. Also, summer internships are being offered for M.Sc (statistics) students from different universities across the country.

On behalf of the entire ICMR-NIMS family, I thank the members/experts of the Scientific Advisory Committee (SAC) and Ethics Committee of the Institute for providing invaluable suggestions and guidance to carry out our research activities. We are indebted to Prof. Balram Bhargava, Secretary, Department of Health Research (DHR) & Director General, Indian Council of Medical Research, for his continued generous support, guidance and encouragement.

Completed Projects

I. Burden of Non-Communicable Diseases and Associated Risk Factors for India (BOD-NCD) - Methodology Group

Overall Coordinator: Dr.M.Vishnu Vardhana Rao

Principal Investigator: Dr.Geetha R Menon

Co-Investigators: Dr.Lucky Singh, Dr.Vaitheeswaran, Dr.Srividya Adinarayanan, Dr.VasnaJoshua, Dr.Shahina Begum, Dr.C.Ponnuraja, Dr.Jeetendra Yadav

Study Period: September 2017-January 2019

Financial Support: Indian Council of Medical Research, New Delhi

Budget: Rs. 14 lakhs

Background

The Millennium Development Goals (MDGs) demanded the use of statistics to inform health planning, monitoring and accountability globally. Likewise, the Sustainable Development Goals (the SDGs) also have indicators that require appropriate statistics and innovative analytical methods to aid priority setting in any government. In India the framing of the new National Health Policy 2017(NHP) recognizes the SDGs to be of pivotal importance and has identified seven priority areas outside the health sector which can have an impact on preventing and promoting health viz. air pollution, better solid waste management, water quality, occupational safety, road safety, housing, vector control, and reduction of violence and urban stress. The Indian Government has accorded priority to the health sector. It is committed to track 'Disability Adjusted Life Years (DALY)' Index as a measure of disease burden and 'reduce premature mortality due to Cardio-vascular diseases (CVD), Cancer, Chronic respiratory diseases (CRD) and Diabetes' by 25% by 2025.

ICMR is committed to provide transparent and understandable disease burden estimates to guide priority settings and programme directions. The Ministry of Health and Family Welfare requested ICMR to provide the national and state level disease burden estimates for 2015 as a baseline to meet the requirement of the National Action Plan and Monitoring Framework for prevention and control of NCDs. In this Ministry funded project, we have reported a simple method to generate national burden estimates (NBE) that combines nationally-representative cause of death data from the Registrar General of India Million Death Study (MDS) with United Nations (UN) demographic totals, and the World Health Organization (WHO) published estimates of deaths and disability.

Objectives

The primary objective of the project was to generate evidence-based, valid and comparable national and sub-national estimates of the disease burden and risk factors. The study also

proposed to determine the burden of established risk factors for NCDs and provide country-specific disability weights for major health conditions.

Data and Methodology

Source of data: WHO methods and data sources for country-level causes of death 2000-2015 Department of Information, Evidence and Research WHO, Geneva January 2017.

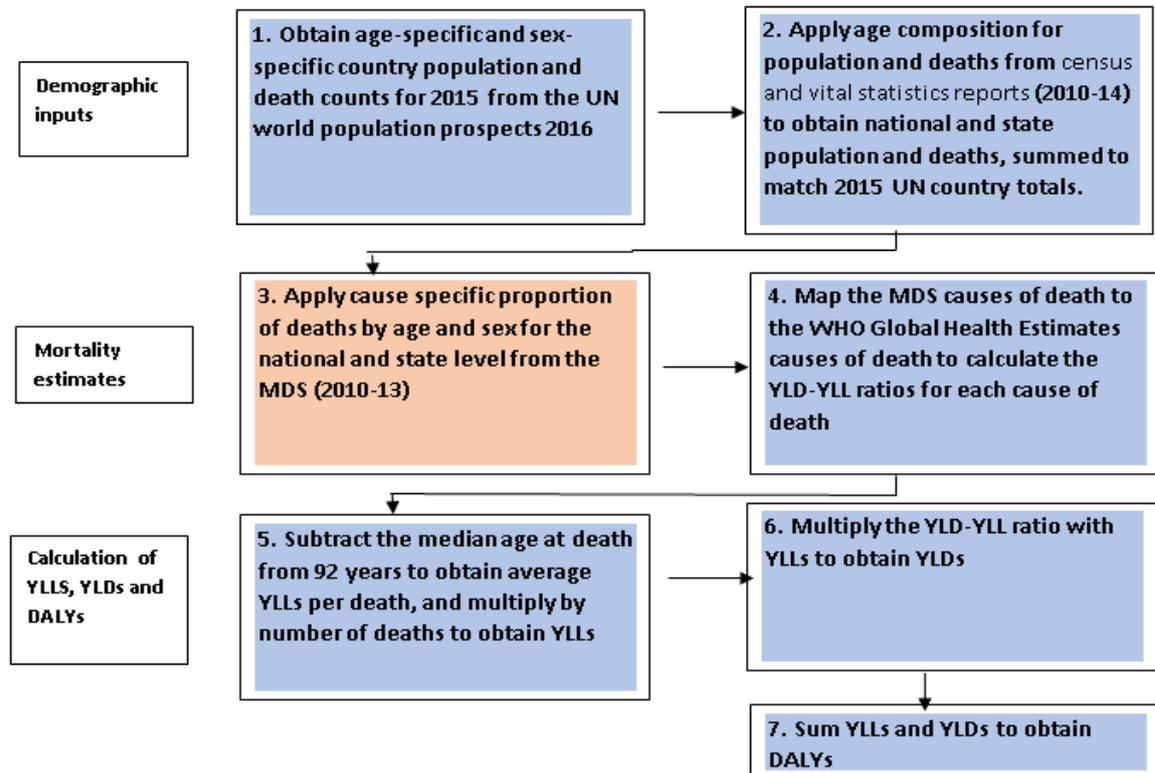
- For deaths, the UN estimated number of deaths (2010-2015) for India was used Source: <https://esa.un.org/unpd/wpp/Download/Standard/Mortality/> (0-4 years from UNIGME).
- Analysis of causes of death for India was based on data from the Sample Registration system (SRS) for the periods 2010-2013. The cause-specific proportion of deaths in each five-year age category from 0 to 79 years and for people aged 80 years and over was weighted by the inverse probability of a household being selected within rural and urban subdivisions of each state to account for the sampling design. National estimates for deaths and mortality rates were based on reweighted urban and rural estimates for India, by age, sex and area.
- The Standard life expectancy used in WHO Global Health estimates obtained from the National Life Expectancy projections 2050: World population Prospects 2012 (UN population Division, 2013). According to this source the standard life expectancy at birth is 92 years.
- The median age at death due to any particular cause has been computed from the Sample Registration System.
- The YLD/YLL ratio for different age groups and disease categories gender wise was used from the GHE 2015 national estimates of YLD (Years Lived with Disability) and YLL (Years of Life Lost) for India.

Factsheets were prepared for the National, Urban-Rural and 19 big states based on their population and number of deaths in 2015. All other states have been pooled together. In the North east, Assam disease burden has been estimated and the remaining states have been clustered as one group for the estimation. The following states estimates have been provided:

- | | |
|---------------------|------------------|
| • Jammu and Kashmir | • Rajasthan |
| • Punjab | • Chhattisgarh |
| • Delhi | • Bihar |
| • Haryana | • Jharkhand |
| • Uttar Pradesh | • Madhya Pradesh |
| • Rajasthan | • Gujarat |
| • Chhattisgarh | • Maharashtra |
| • Bihar | • West Bengal |
| • Jharkhand | • Odisha |

- Madhya Pradesh
- Gujarat
- Jammu and Kashmir
- Punjab
- Delhi
- Haryana
- Uttar Pradesh
- Andhra Pradesh
- Tamil Nadu
- Kerala
- Karnataka
- Assam
- Other North Eastern States
- All remaining states

The NBE method involves seven steps. (Figure below)



Step 1. We obtained age- and sex-specific country population and deaths for 2017 from UN World Population Prospects, deaths and population by state and for rural/urban strata from the Sample Registration System year for 2016 and causes of death information from the RGI-MDS for 2010-2013.

Step 2: We summed the total deaths and adjusted to match the UN total for each age and sex stratum.

Step 3: We applied the cause of death proportions from the MDS for 2010-2013 RGI-MDS cause-specific mortality proportions (weighted by the sampling probability for rural/urban strata for each state) to the above-adjusted death totals to obtain age- and sex-specific number of deaths for each cause. We aggregated the 5-year death and population totals into age groups 0-4, 5-14, 15-29, 30- 49, 50-59, 60-69, 70-79 and 80+.

Step 4: We mapped the MDS classification of International Classification of Diseases (ICD-10) codes to the WHO Global Health Estimates (GHE) classification for India.¹⁹ For each condition, we derived the Years Lived with Disability (YLD) and Years of Life Lost (YLL) YLLs and calculated the YLD/YLL ratio for the specified age groups.

Step 5: We calculated the median age at death for each cause from the MDS and subtracted the median age at death from 92 years (WHO standard life expectancy) and multiplied by the number of deaths from Step 3 to obtain YLLs. Thus the YLL for cause x for the ith age group =

$$YLL_{xi} = (92 - \text{median age at death}_{xi}) * \text{UN adjusted deaths}_{xi}.$$

Step 6 : We multiplied the YLLs by the GHE YLD/YLL ratios to obtain YLDs for each cause by age and sex (YLD= YLL * [YLD/YLL] GHE).

Step 7: The final step was to add YLLs and YLDs together to arrive at DALYs for each cause by age and sex.

Results

The report provides the factsheets of the National, Urban, Rural and Both and 19 big states based on their population and number of deaths in 2015. All other states have been pooled together. In the North East, the Assam disease burden has been estimated and the remaining states have been clustered as one group for the estimation. The following states estimates have been provided: 1. Jammu and Kashmir 2. Punjab 3. Delhi 4. Haryana 5. Uttar Pradesh 6. Rajasthan 7. Chhattisgarh 8. Bihar 9. Jharkhand 10. Madhya Pradesh 11. Gujarat 12. Maharashtra 13. West Bengal 14. Odisha 15. Andhra Pradesh 16. Tamil Nadu 17. Kerala 18. Karnataka 19. Assam 20. Other North Eastern States 21. All remaining states.

In 2015, there were about 9.5 million deaths and 496 million DALYs in India, so that every death equalled about 52 DALYs. About three-quarters of deaths and DALYs occurred in rural areas, and just over half of all DALYs occurred in males. DALYs showed a U-shaped relationship with age, being highest at ages 0-4 years, lowest among older children aged 5-14 years and rising to a peak at ages 70-79 years. Over a third of national DALYs arose from communicable, maternal and perinatal conditions (CMP), but this proportion was over 40% among rural residents and among females. Non-communicable diseases (NCDs) comprised 45% of national DALYs, but a notably higher 54% in urban areas. Injuries were about 11% of DALYs. Ill-defined causes comprised 3% of all DALYs before age 70 years but a higher proportion above age 70 years. NCD and injury DALY rates were higher in males than females.

The conditions which accounted for the top 10 DALYs in the population below 70 years were mostly led by those causing years of life lost, namely perinatal conditions (11% of DALYs), ischemic heart disease (9%), chronic respiratory, diarrhoea and respiratory infections (each at about 5%), cancer (4%), stroke, tuberculosis, road traffic injuries and liver and alcohol-related conditions (each at about 3%). The DALYs for three conditions arose mostly from years of life with a disability: nutritional deficiencies (7% of DALYs), neuropsychiatric conditions (5%) and skin, sense organs and oral conditions (4%), The CMP conditions constituted a far larger

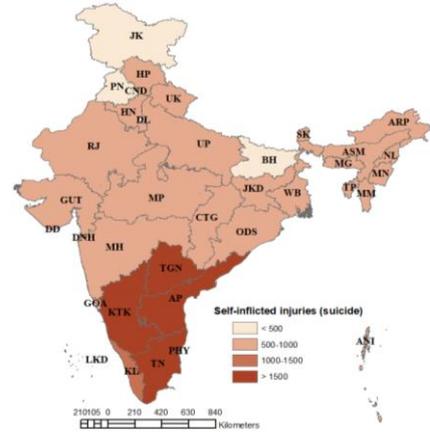
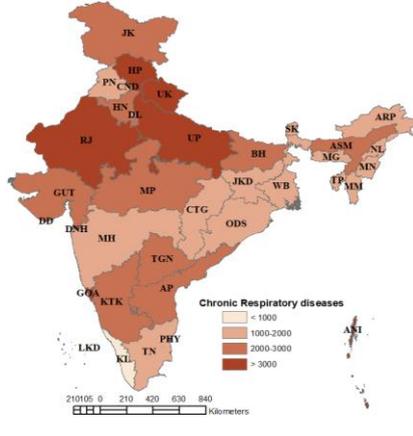
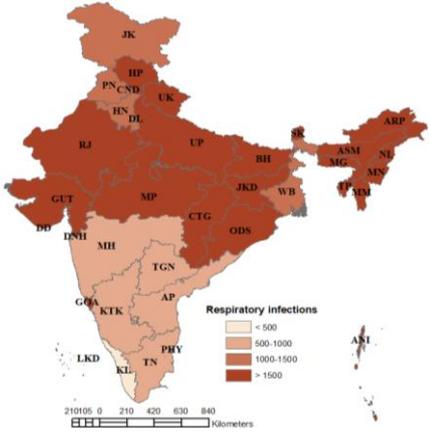
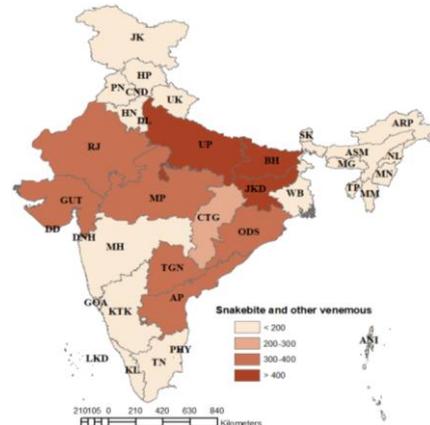
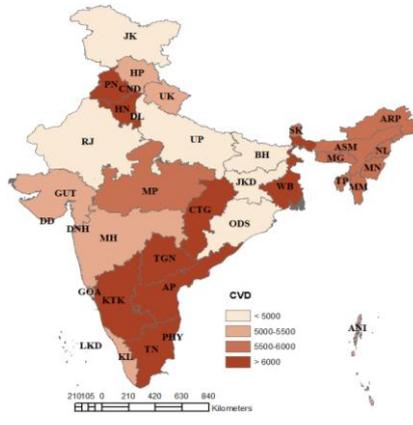
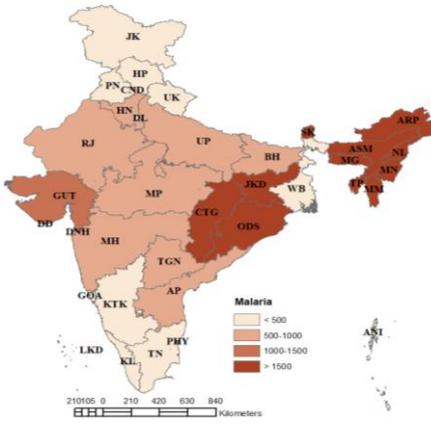
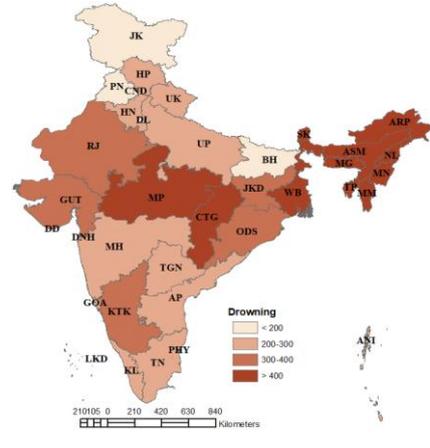
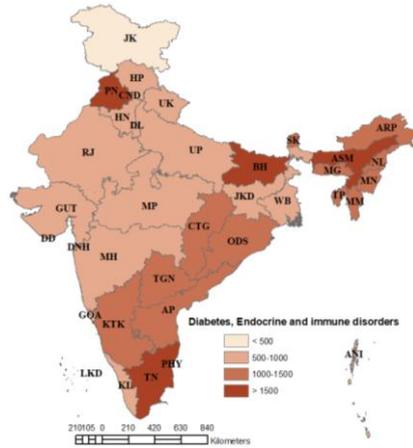
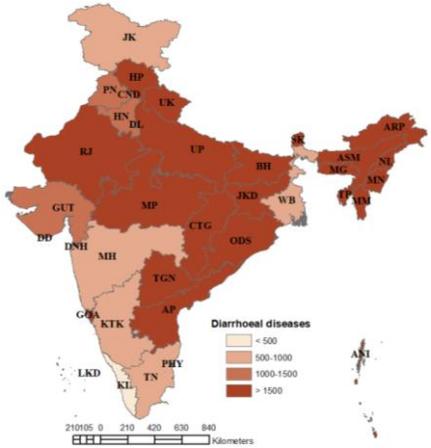
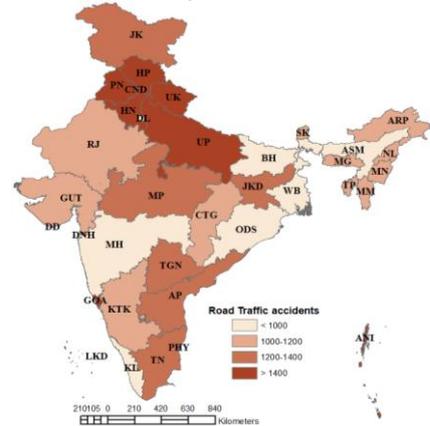
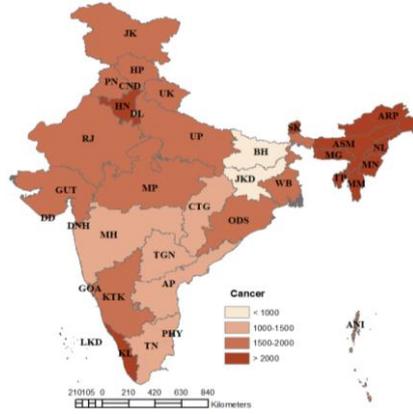
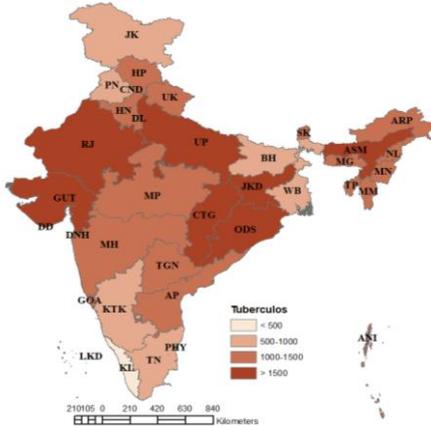
proportion of rural DALYs than urban DALYs. The results of deaths, YLLs, YLDS and DALYs were quite similar when we restricted analyses to below age 70 years.

Over 70% of the DALYs at all ages resulted from years of life lost (355/496 million years). YLLs dominated among the 13 CMPs and 7 injuries, with the notable exception of nutritional deficiencies, where YLDs constituted 90% of DALYs from this condition. YLLs also dominated nearly most of the 24 NCDs, including all the cancers and vascular and respiratory diseases. Among NCDs, for three conditions neuropsychiatric, musculoskeletal, and skin, sense organ and oral conditions are largely chronic and contribute for more YLDs than the YLLs. Collectively these three conditions accounted for 42 % of all YLDs and 13% of all DALYs (and hence represent the major sources of uncertainty in the non-fatal component of DALYs)

Communicable Diseases

Non communicable diseases

Injuries



The report has been submitted to the Ministry.

Public Health Impact

The Disease Burden estimates for the national and state level could be used by the state-level authorities for action plans and allocation of resources based on specific disease burden in their state. The data generated from this study could be used by researchers to undertake more in-depth studies health summaries.

II. National Non-communicable Disease Monitoring Survey in India – A Collaborative Project with NCDIR, Bengaluru

Principal Investigator: Dr.H.K.Chaturvedi

Study Period: March 2017 - March 2019

Financial Support: Indian Council of Medical Research, New Delhi

Background

The National Institute of Medical Statistics, New Delhi is one of the collaborative partners with National Centre for Disease Informatics and Research, Bangalore to provide technical support in developing study design, sampling methodology, determination of sample size for survey, random selection of primary sampling units (village in rural and wards in urban), field manual for survey, and also for data collection and analysis.

Objectives

Primary objective

To generate country/national level estimates of key NCD related indicators (risk factors and health system response) identified in the national NCD monitoring framework for the year 2015.

Secondary objective

- To create a central and regional pool of resources (protocols, standard tools, training manuals) to support the conduct of similar surveys at state level.
- To strengthen capacities for monitoring of NCDs at national and sub-national level

Data and Methodology

A multistage cluster sampling design was used for conducting the survey covering age range of 15-69 years, including adolescents between 15-17 years. The sample size required to obtain reliable estimates of NCD related indicators was worked out in order to get the estimates for four subgroups of urban and rural by men and women. A sample of 12,000 households was worked out for coverage of both for all four subgroups of population.

A sample size of 3000 was worked out to provide salt estimation of population through urinary sodium excretion (18-69 years). Out of the total 600 PSUs, the participants were randomly chosen from the selected 150 PSUs (75 urban and 75 rural PSUs). The health facility survey was also conducted simultaneously covering the four strata– rural/urban and Private/public facilities. Thus, a sample of 300 facilities was considered for each stratum i.e., total 1200 in all the four strata (urban/rural and public and private). The survey was completed during the period 2017–18.

Data Analysis

After completion of the survey, ICMR-NCDIR has organized data analysis workshops to carry out the statistical analysis of data. Data analysis plan and method of sampling weights computation was presented and discussed with all the collaborative partners. Final data analysis was carried out jointly by ICMR-NIMS and ICMR-NCDIR. The format of presentation of facts sheets and tables of the report was finalized.

Results

The fact sheets and tables of the report was prepared and finalized incorporating the inputs given by the TAG committee during presentation in the meeting organized by ICMR-NCDIR in the month of August, 2018. The final results of analysis were submitted by ICMR-NIMS to ICMR-NCDIR for compilation and report writing. We have also contributed in writing report especially methodology section and given our inputs for finalization of report. The findings of the study will be released and disseminated after acceptance of the report by the MoHFW, GOI

III. Improvement in the Utilization of Reproductive and Child Health (RCH) Services through Male Participation among the Saharia Tribes in Gwalior District, Madhya Pradesh

Principal Investigator: Dr.Tulsi Adhikari

Co-Investigators: Dr.Atul Juneja, Dr.Saritha Nair, Dr.B.K.Gulati

Study Period: October 16, 2016 - July 15, 2018

Financial Support: Indian Council of Medical Research, New Delhi

Budget: Rs.18 Lakhs

Background

Over the years, there has been a growing consensus among policymakers, program personnel, researchers and health practitioners across the globe that male's involvement has been a key facilitating factor to women's reproductive health. Male involvement in reproductive health is a complex process of social and behavioural change that requires men to play a more responsible role in reproductive health.

Experimentation with many models and, in some cases, their replication has been done with the understanding that the RCH services would reach out to people who are residing in the tribal areas, but these did not bring a remarkable change in the reproductive and child health (RCH) situation, which still remains bleak (DLHS, 2007-8). In this context, the present study aims to have a relook at the factors that prevent or promote people from accessing RCH services in these areas. It is a step towards improving maternal and child health among the marginalized people of the country through male participation.

Objectives

The primary objective of the study is

- Development of behaviour change communication model for improving male involvement in maternal and child health services utilization.

The specific objectives are as under:

- To assess the levels of RCH services utilization and male involvement in RCH services among the Saharia tribes in Gwalior district of Madhya Pradesh.
- To understand the social and cultural barriers and facilitators around male participation in promoting maternal health and institutional deliveries among the Saharia Tribes.
- To develop a Behaviour Change Communication (BCC) Model, for encouraging male participation in maternal care for the tribal population of MP
- To pilot the BCC model in a village for feasibility.

Data and Methodology

It is a cross-sectional study conducted in six villages of two geographically distinct blocks, Ghatgao-Barai, and Dabra in Gwalior district of Madhya Pradesh. The study design is stratified cluster-randomized, two-stage design, blocks were stratified in 3 strata according to a number of households in the block, and from each stratum, one village was selected randomly. Within the selected villages, couple interviews (male and female interviewed separately in isolation), male and female FGDs and Key informant interviews were conducted to assess the RCH utilization, Male involvement in it and barriers and facilitators of male involvement. The couples, who had given birth to a child within 5 years from the date of the interview, were selected for the couple interview. The information collected through, couple interviews, FGDs, and the KII was utilized to develop the Behaviour Change Communication model for improving male participation in RCH services utilization. The BCC model so developed was implemented in one of the villages which were not covered in the couple interviews. The feasibility of the BCC model was assessed for its Acceptability, integration with the current system, and Short period impact of the BCC intervention.

Results

The level of RCH services utilization among the Saharia tribes is very low. Male, in general, were not aware of the ANC/PNC services being provided by the government. Institutional

deliveries were very few. Most of the deliveries are conducted at home only with the help of some elderly women in the village or family. Male participation was negligible in maternal and child health. It was considered women's duty only. Women who visit the health centre for the ANC/PNC services, either go alone or with her mother-in-law or some other women in the house. Men were either busy in earning the livelihood or spending time in unproductive work. So the need was felt to improve the knowledge of men and women both about the importance of RCH services being provided at the health centres. It was also important to make the men aware of their role and responsibility towards his spouse and children. BCC model was developed, piloted in one of the villages, separate from that selected for the couple interviews. Feasibility study of the BCC intervention package in a village showed its acceptability, possible integration with the existing programme and also showed the short-term impact of the intervention

Acceptability

Targeted individuals' reaction to the intervention for improving male involvement

The male members in the village were more vocal in expressing their willingness to take part in the maternal and child health services being provided by the government. The elderly people of the village were of the view that such type of activity was never performed before, in the area and was very much optimistic about the impact of the BCC activity. The intervention would reduce the morbidity and mortality among the mother and child in society. It would also improve the mutual trust and coordination among the couples in the community.

The respondent believed that the proposed community-level activities would change the mindset of the individuals and the community in general about the participation of husband in the maternal and child health activities. The proposed activities would make the environment conducive for male participation. And the male members in the village would no longer feel ashamed to accompany their wife to the hospital for ANC/PNC, immunization and the delivery in the hospital. This would improve the proportion of institutional deliveries and would have a better impact on the health of both mother and child. The nukkad plays under the BCC programme would augment the process of improving male participation in maternal and child health.

The respondent believed that the proposed home visits for couple counselling would help in better handling of the problems and believes of couples individually; resulting in accelerated the process of male participation.

Integration

As per the components of our BCC model, the level of system change required is minimal. The different components of the BCC model require different levels of system change.

1. The awareness rallies and nukkad plays, which is part of the community participation in the behaviour change communication model, does not need much of infrastructure change, just require the commitment from the key persons in the society and the local health workers.

2. The awareness training programme for the eligible males, women group meetings and home visits by the local health workers need the addition of one component viz, male involvement in maternal and child health in the duties of the local health workers and improved level of commitment from them for the success of the BCC model.

3. The component that requires the highest level of change in the existing system is not a component of the BCC model but the required impact of the BCC, i.e., the male involvement itself. In the existing system, in most of the gynecological departments, men (any relatives) are not allowed to enter the ANC clinic. For this impact to take place, the support of state-level health delivery system level a must and needs maximum effort to be made.

Short period impact of the BCC intervention rendered in the CholakiDafai village

The short period impact of the BCC intervention implemented in the village of CholakiDafai village was visible among the couples registered under the awareness programme. The male members in the village were more vocal in expressing their willingness to take part in the maternal and child health services being provided by the government. The elderly people of the village were also in favour of male participation in maternal and child health matters.

Couples seemed to be enthusiastic about the whole idea. They were of the view that such type of activity was never being performed before in the area and were very much optimistic about the impact of the BCC activity. There were concerns regarding the bad habits among the male viz, alcoholism, which in their opinion is going to be one of the barriers in improving the male involvement in MCH services. But there were big number of wise people who were determined to work for the cause and try to motivate as many people as possible to improve the health conditions of mothers and children in the village and thus improve the overall health of the family.

Thus, the BCC model passed the three criteria of feasibility assessment.

Public Health Impact

The study has provided leads to improve male participation in utilisation of RCH facilities among Saharia tribes. Based on the findings of this study a behavioural change communication model (BCC) has been prepared. The MP government has accepted the findings and is willing to upscale this study.

IV. A Study on Gender Inequity in Health Seeking Behaviour among Santhal Tribes of Jharkhand

Principal Investigator: Dr.H.K.Chaturvedi

Co-Investigators: Prof.Amool R. Singh, Former Director, Ranchi Institute of Neuro-Psychiatry & Allied Sciences, Ranchi, Jharkhand

Study Period: July 1, 2016 - June 30, 2018

Financial Support: Indian Council of Medical Research, New Delhi
Budget: Rs.30,46,580/-

Background

Health of the tribal people of Jharkhand is one of the major problems as they live in rural and isolated areas and commonly used traditional method of treatment. The main reason of traditional health practices is being social belief and old practices. It is also due to lack of awareness about the availability and accessibility of health facilities and also hesitation to visit health centres. The tribal health needs special attention because they have distinctive health problems, which are mainly governed by their traditional beliefs, practices and ecological conditions. Gender inequality in health seeking behaviour is also a major concern. The problem is even grave for the females who do not report health issues and hesitate to get treatment. To understand these problems and explore possible solutions for policies to alleviate the health status of Santhal tribes, the project was undertaken to assess gender inequity in health seeking behaviour among Santhal tribes of Jharkhand. The utilization of the health services in Santhal Pargana was also assessed especially nearby the study population.

The main aim of the study was to explore the possible gender inequity in treatment seeking behaviour among the Santhal tribes and assess the utilization of health services. Emphasis of the study was also to draw implications for intervention measures for improvement in health seeking behaviour and gaps in utilization of health services.

Objectives

- To study gender inequity in treatment seeking behaviour among the Santhal tribes and utilization of health services.
- To draw implications for intervention measures for improvement in health seeking behaviour and gaps in utilization of health services.

Data and Methodology

Community based cross sectional study on health seeking behaviour and utilization of health services including gender inequity was conducted in tribal dominated area of Jharkhand State known as Santhal Pargana. In order to capture the required sample size of 900 males and 900 females who have received treatment recently (last 3 months) due to illness, the number of household samples was worked out as 3000 for survey. At first stage, a sample of 100 villages was selected randomly using the method of PPS sampling from the prepared sampling frame of villages, but survey was completed only in 99 villages. In the second stage, 30 households were selected from the house listing of each village using circular systematic sampling. Overall, survey was completed in 2966 households of 99 villages. The general household information and common practices related treatment seeking behaviour after getting illness of anybody in the family was recorded by interviewing head of the household. However, if anybody reported ill in the selected household in the last three months at the time of survey, they were included in the sample to collect specific information related to illness and seeking treatment.

The survey used two types of bilingual questionnaires (Hindi & English) – Household and Individual Questionnaire. The head of the household was interviewed to collect household information such as information of all household members and relationship with head, education of head, religion, type of house with number of rooms, the main source of drinking water, type of toilet facility, main source of lighting, type of cooking fuel, ownership of agricultural land, ownership of durable goods, etc. The basic health seeking information such as type of treatment, institutional delivery of child and ANC facilities, etc. was also collected at the household level.

The individual questionnaire was filled by interviewing the ill family member(s) (adults male or female or mother of sick child or caretaker of sick family member) of household. The individual questionnaire covered information on nature of illness, source of treatment, reporting to health centre and services, health expenditure, etc. Some questions related to women empowerment and violence against women was also asked to the selected ill female respondents.

Results

Household: The general profile of 2966 (2238 Santhal and 728 others) households were recorded and discussed about their standard of living. Source of drinking water, an important component of public health, was recorded as 69.6% of Santhals and 62% other households using Public Tap for drinking water. Hand pump was also used as another source of drinking water by Santhal (16.2%) and other people (15.5%). A very small number of people were using water from Spring/waterfall (1.5% Santhal and 1.4% Others). Firewood was commonly used as fuel for cooking (97.6% of Santhals and 96.5% of others), but the use of LPG was recorded low among them (1.4% of Santhal and 1.8% of other households). The electricity connection at home was recorded among 51.3% of Santhal and 64.4% other households. However, 48.3% Santhal and 35.1% of other households were still using kerosene oil for light. The Govt. has launched a Pradhan Mantri Ujjwala Yojana, a scheme to make the LPG available to women from families for the poor section of our society. This is an important scheme and its implementation may bring radical changes in the consumption of firewood in this region.

As reported by the head of households, they mainly visited to Government (45.7% Santhal and 43.5% others i.e. non-Santhal people), Private (29.3% Santhal and 28.1% others); and traditional (23.3% Santhal and 25.4% others) health service providers for seeking treatment of common illness. But, for major illnesses such as tuberculosis (TB), hypertension (high blood pressure), diabetes, etc., they visited to Government (64.4% Santhal and 63.2% others), Private (33.4% Santhal and 34.6% others), and tradition (2.2% Santhal and 2.1% others) health service providers. For Antenatal Care (ANC), women of the households mostly visited to Government health service providers (Santhal 38.8% and 37% others) and very few visited to Private (Santhal 3.9% and others 5%). High proportion of women were using traditional methods for ANC (Santhal 47.5% and 49.3% others). Institutional delivery (at hospital) was reported low (19.3% Santhal and 23.3% others), but delivery at home was reported very high (72.3% of Santhal and 70.3% of others) among all the household respondents. Health awareness among women of this region may be increased especially for institutional delivery.

Health Seeking Behaviour

Out of 2966 households, health seeking behaviour data collected from 1995 household members (1480 Santhal and 515 others) who had taken treatment from any source during illness in last three months, was analyzed. Out of them, 1092 respondents (839 Santhal and 253 other) reported for general illness and 873 (613 Santhal and 225 others) reported for chronic illness; and 30 individuals reported major injury due to accidents. The type of disease reported in the category of general illness was arthritis & joint pain (26.6%), malaria & Kala-azar (13.5), abdominal pain (12.8%), diarrhea (1.7%), typhoid (3.7%), fever (9.5%), cough & cold (4.1%), headache (13.4%) and others (14.7%). In the category of chronic illness, the type of disease reported was tuberculosis (23.7%), eczema (skin disease) (14.0%), BP and heart disease (9.7%), paralysis (6.7%), filariasis (8.8%) and others (20.4%).

The health seeking behaviour of individual shows that one third of them (34.3% Santhal and 41.5% others) visited to government services; and almost half of them (42.0% Santhal and 36.0% others) visited private health service providers for general illnesses. Traditional source of treatment was used by 22.3% of Santhal and 21.7% of other during illness. For major illnesses, almost half of them (50.1% Santhal and 55.3% others) visited government services; one third of them (33.7% Santhal and 30.2% others) visited private service providers; and 16.2% Santhal and 13.7% others used traditional source of treatment.

Gender Inequality

Gender differences in health seeking behaviour among Santhal was significant for general illness as 39.6% of males and 31.0% of females visited to government service providers; 36.8% males and 45.2% females visited private health service providers; and slightly less than one quarter of male (22.4%) and female (22.2%) respondents used traditional methods for treatment. However, differences for chronic illness was not significant as 50.5% of male and 49.6% of female respondents visited to government service providers; 33.6% male and 33.8% female respondents visited private health service providers; and 15.9% male and 16.7% female respondents used traditional methods for treatment.

Delay in seeking treatment: this is a common behavioural practice among Santhal tribes. Of the 1410 respondents, 33.8% of them delayed \leq 2 days (34.4% of males and 28.7% of females), 33.4% delayed 3 to 5 days (32.6% of males and 34.2% of females), and 32.8% delayed more than 5 days (>5 days) (33.0% of males and 32.5% of females) in seeking treatment. The pattern of delay in seeking treatment between male and female respondents is similar. The possible reason of delay was recorded as about half of them (53.8%) reported that no necessity was felt, and about one fourth (26.8%) of them reported the reason as hospital far away. However, 10.5% of the respondents reported that they were not aware of where to go for treatment. The distance of the nearest health service providers was recorded as majority of them (69.6%) had to travel more than 10 kilometres for seeking treatment from government health services.

Conclusion

There is a need to provide the common health facilities at nearby their villages to minimize the travel time and create awareness to take early treatment. Patients reported to government

health centers expected to get proper care and medication. Treatment cost should be minimal to increase their confidence and utilization of government health services. Further, the ambulance facility at a subsidized rate or free of cost may also be made available for old age and seriously ill people.

There are many cases reported for chronic illness which needs special health check up including specialized medical services and tests for specific diseases. Though there are district level hospitals in each district, but there is a need to open a new specialized hospital or strengthen the district hospitals with all facilities for the treatment of chronic illness. Final project report has been submitted to ICMR.

V. Malaria Elimination and Estimation of Disease Burden in Punjab

A collaborative project with ICMR-National Institute of Malaria Research, New Delhi

Principal Investigator: Dr. H.K. Chaturvedi

Study Period: 2017 - 2019

Financial Support: Indian Council of Medical Research, New Delhi

Background

A collaborative project of ICMR-NIMR and ICMR NIMS and the Institute was involved in this project in protocol development and to provide technical support. Punjab is one of the states which has reported low Annual Parasite Incidence (API ≤ 1) in all the 22 districts for the last five years. There is a gradual decline in malaria cases and incidence of *P.falciparum* over the years. However, the actual burden of disease has not been estimated to strategize malaria elimination in the state. This was a first study for estimation of malaria burden as a step to elimination of malaria. With the approval of the ICMR, a MOU has been signed with the Government of Punjab on 20.5.2016 and field site unit was established at Dhakoli CHC, Zirakpur, District Mohali (Punjab). Preliminary information as a baseline data has been collected from different districts of Punjab. Technical support and advisory to the state government has been envisaged under the joint collaboration so that the aim of malaria elimination in the state may be achieved within the time frame.

Objectives

- To achieve malaria elimination in Punjab with collaborative efforts with State Government
- To estimate the burden of malaria in the state.

Data and Methodology

Assuming the API 0.2 per thousand with permissible error of 20% and 95% confidence interval, the required sample size for estimation of malaria burden was worked out as 9 lakhs. The district wise API reported in 22 districts in the last four years (2012-15) was used for identification of three regions representing high, medium and low API area. Three districts were

selected randomly from each region and sample of three lakhs selected three blocks of selected districts (one lakh population from one block of each district).

Selection of study area

Selection of blocks from districts was based on API of last four years. Accordingly, three group of districts were formed namely 5 districts under high ($API > 0.1$), 9 districts under medium ($0.02 < API < 0.1$) and 8 districts under low ($API < 0.02$). For selection of 3 blocks from 3 different districts from each region, the districts were arranged as per the level of API (in descending order) and then blocks within the districts were arranged in ascending and descending order alternatively. Three Blocks from three districts of each group were selected using PPS sampling from the sampling frame of each three groups. Overall, 9 block PHCs were selected from the sampling frame all the Block PHCs and districts of Punjab state.

For large Blocks (by population), one lakh population was selected giving due importance to sub-centres wise malaria data view of local malaria officials to identify sub-centres having highest incidence of malaria. That sub-centres were selected as the central location for surveillance and required number of sub-centres constituting about one lakh population for surveillance. Further, two urban blocks selected in the study i.e., Amritsar and Ludhiana have very large urban population as compared to the rural blocks. Since ward-wise information on API in these two urban blocks was not available, therefore the selection of study area with approximate one lakh population was made in the peri-urban areas of these two cities with evidence of malaria cases with the help of local officials.

The surveillance of fever/malaria cases was carried for complete 12 months to complete one year from the initiation (July, 2017 to June, 2018) in all the nine selected study areas of districts with the support of state health administration and their staff (health/field worker).

Results

Out of 132537 patients screened for malaria in the target study population of 9 districts, 173 (*Pv*-171; *Pf*-1; Mix-1) cases were found positive for malaria. The Annual Blood Examination Rate (ABER) was 14.4% and slide positivity rate (SPR) was 0.13%.

Estimation of Malaria Morbidity

Malaria disease burden for the Punjab state has been worked out based on one year's surveillance data and cases reported at government/private health facilities. As per study design, the incidence of malaria in this study has been worked out as region specific for high, medium and low endemic areas in the state. We have made a direct estimation of the number of cases based on primary data generated out of this study. The whole state has been divided into three regions indicating high, moderate and low malaria endemic regions with its total population. The malaria cases captured during the surveillance (active and passive) and diagnosed by microscopy, RDT and PCR during period of one year (July 2017 to June 2018) in all the nine-selected study area of different districts of Punjab were recorded and analyzed. Support of state health administration and their staff (health/field worker).

The appropriate weights according to the study design were used to obtain the weighted estimates of annual parasite incidence (API). According to the study design, the weighted estimates of API for all the three regions (high, moderate and low) was calculated and then it was combined to get the estimate of API for the total population of Punjab. The 95% confidence interval of weighted estimates of API was also calculated and it was applied to obtain the estimated number of malaria cases (malaria burden) and its confidence bound/limit for the population of Punjab. Thus, based on the actual number of malaria cases reported from high, moderate and low transmission study area, the number of malaria cases from three regions (high, medium and low) of the state have been estimated. The weighted estimates of state level API were 0.172865 per thousand. The final report has been submitted to ICMR.

Public Health Impact

The malaria burden estimates will be used for planning and program in the state of Punjab.

Ongoing Activities

I. Clinical Trials Registry - India (CTRI) www.ctri.nic.in

Chief Coordinator: Dr.M.Vishnu Vardhana Rao, Director, ICMR-NIMS

Coordinators: Dr.Atul Juneja, Dr.Tulsi Adhikari, Dr.Saurabh Sharma

Study Period: April 2006 - till Date

Financial Support: Intramural activity of NIMS funded by Indian Council of Medical Research, New Delhi

Background and Objective

The Clinical Trials Registry – India (CTRI) is a national online register for registering clinical trials being conducted in India (www.ctri.nic.in). Further, since the CTRI is a Primary Registry of the WHO's International Clinical Trials Registry Platform (ICTRP), it also registers trials being conducted in countries which do not have a Primary Registry of their own.

CTRI was launched on 20th July 2007 by DG ICMR and is managed by the National Institute of Medical Statistics, Indian Council of Medical Research.

The CTRI was established with the following objectives:

- To bring transparency, accountability and accessibility of clinical trials and their data.
- To establish a comprehensive search portal which will also serve as a public record system by registering all clinical trials on health products that are drugs, devices, vaccines, herbal drugs and made available to both public and healthcare professionals in an unbiased, scientific and timely manner.
- To provide an unbiased source of information for reviews, meta-analyses and evidence-based guidelines.
- Increase awareness and accountability of all the participants of the clinical trials.

CTRI registers all types therapeutic area trials, i.e. interventional, observational BA/BE, surgical, lifestyle, devices, Ayurveda, herbal etc. Moreover, as the global mandate is to register trials only prospectively, the CTRI has also moved towards only prospective registration from 1st April 2018.

Data and Methodology

The CTRI, a web application was developed using open source technology i.e., PHP and MYSQL on LINUX platform, is a purely online, voluntary and free of charge portal.

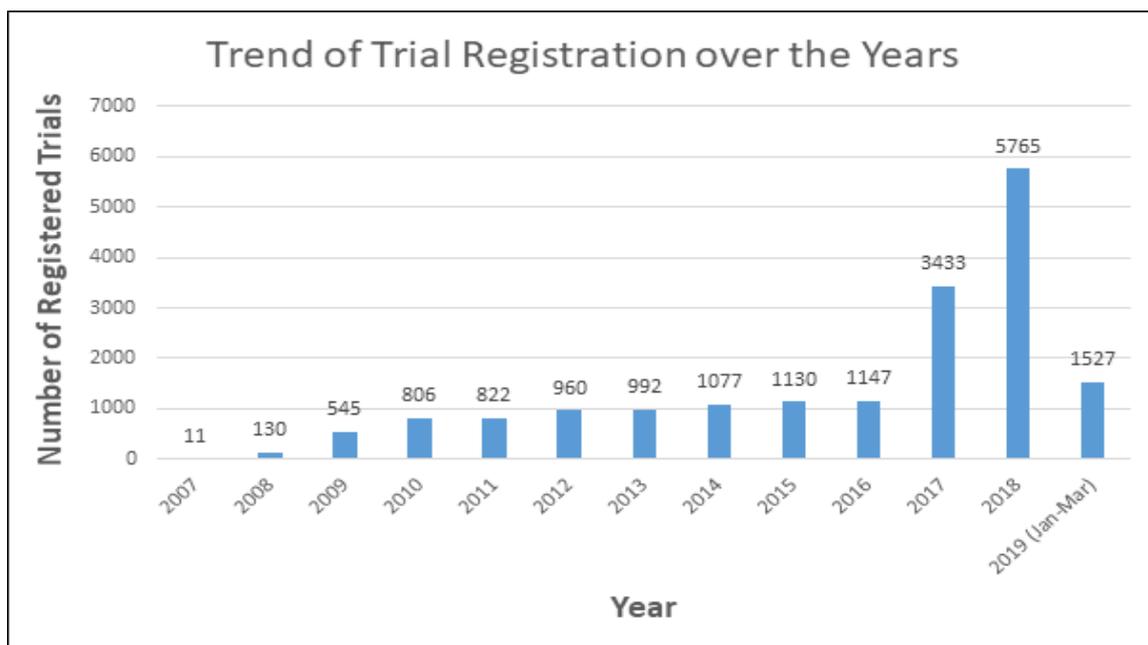
To register their clinical trials, Registrants must first register as users (obtain username and password). The username and password may be obtained by accessing the Home

Page of the CTRI (www.ctri.nic.in) and clicking on NEW APPLICANT and fill the form online and click on Submit button. Registrants may begin to register their trial once they receive a second confirmatory email activating the username and password sent in the first email.

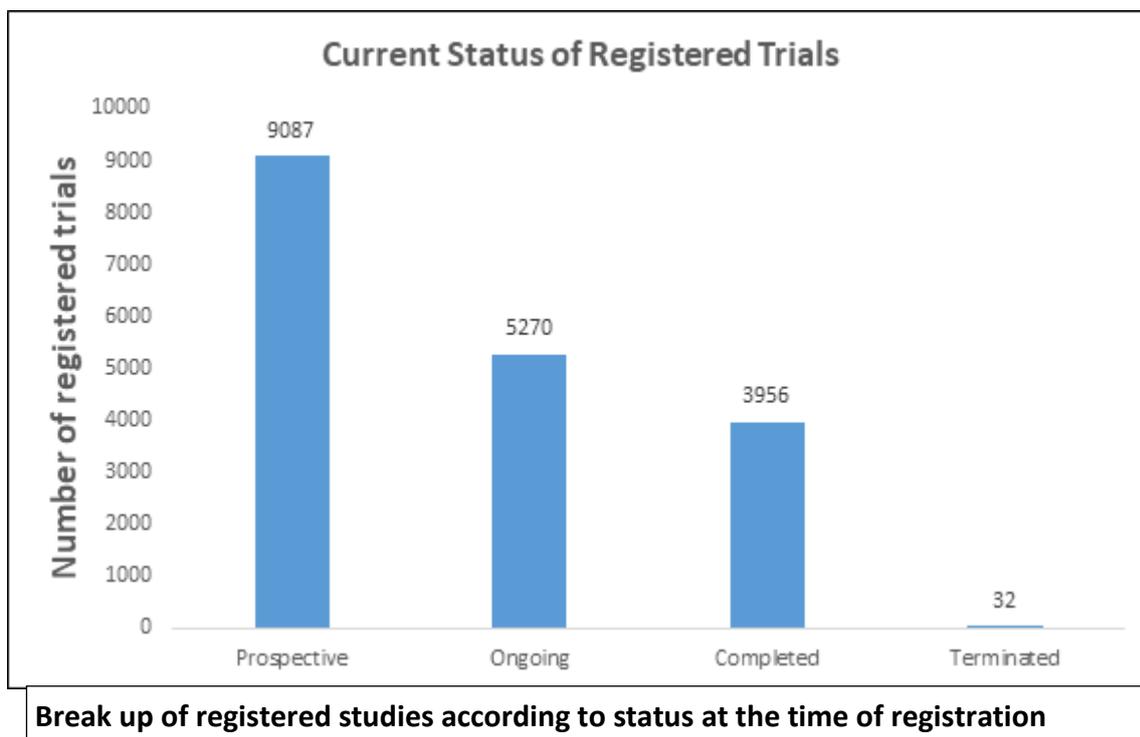
After login to CTRI the Registrants may upload trial data by clicking on “ADD NEW TRIAL”, and filling requisite data set form that appears. The CTRI form which has to be filled online has 8 parts and may be filled in any order at the convenience of the Registrant. The date of first enrolment should be at least 10 days later than the date of trial submission to allow for trial review process and registration. Context information regarding what each field signifies and what information is to be uploaded is available against each data set point. In addition, a prototype filled trial registration data set is available on the Home Page for reference purposes. The trial is available to the CTRI only when the Submit button in Part 8 is clicked. Once a trial is successfully submitted a REF number will be instantly assigned to the trial which is to be quoted in all trial related correspondence. Please note that if a REF number is not assigned, the trial has not been submitted to the CTRI.

Upon submission, the trial is not editable but is viewable. After review by the CTRI scientists, the trial may be sent back in case any modifications or additional information is desired. Verification mails will be sent by CTRI to all mentioned “contact persons.” A trial will be registered upon satisfaction of all clarifications/modifications requested, submission of approval documents [Ethics and DCGI approval (if applicable)] and receipt of confirmation mail from “contact persons”

Once a trial is registered, all details are available in the public domain and any changes (protocol amendments) made to a registered trial are also viewable.



The CTRI has 18345 clinical studies registered (till 31st March 2019 is 18345) and the Year-wise break up of registration is given below:



Following activities were initiated:

- **Prospective Registration:** The CTRI which was accepting ongoing and completed trials for registration has shifted to only prospective registration from 1st April 2018
- **ICD Implementation:** Developed and implemented ICD-10 coding for health condition to have uniform data capture for better data analysis.
- **Results Disclosure:** In the process of developing a software application for collecting and displaying tabulated summary results as per WHO requirements.
- **IPD sharing:** As per requirement of the WHO, a new data set item for individual participant data (IPD) sharing plan in the CTRI is to be incorporated. The format of the same is currently being finalized.
- **WHO Collaborating Centre:** WHO-SEARO is looking to strengthen trial registration in the region and a proposal has been mooted to make CTRI a WHO Collaborating Centre to provide support to Nepal develop their own Registry. In this connection, a delegation of officials from the Nepal Health Research Council (NHRC) who visited ICMR and DHR between 25th and 28th June 2018 also had a one-day meeting with CTRI to understand the administrative, technical, software and logistic support required for the setting up of a similar registry in Nepal. Currently an MOU is under consideration. There is also a proposal for CTRI to help WHO-SEARO in advocating

trial registration to the other 7 SEARO countries which do not have a registry of their own.

Ethics Committee Registration

The Department of Health Research has undertaken to register all ethics committees involved in biomedical and health research and the same has also been notified. In this regard, the CTRI has been entrusted with the task of assisting DHR in setting the system for registering Ethics committee registrations.

Future plans

1. Develop test and implement results disclosure
2. Incorporate data set item pertaining to individual participant data (IPD) sharing plan in the CTRI trial registration data set form
3. To undertake dissemination workshops to enhance awareness and encourage result disclosure
4. CTRI plans to develop distinct data set items for observational BA/BE and post-marketing studies.
5. CTRI plans to utilize CTRI data to strengthen research in traditional medicines.

II. Evaluation of the Impact of Antiretroviral Therapy under National AIDS Control Programme in India (ART-IE)

Principal Investigator: Dr.Damodar Sahu

Co-Investigator: Dr.Saritha Nair

Data Collection: All Technical Officers

Study Period: June 4, 2018 - October 31, 2019

Financial Support: National AIDS Control Organization, New Delhi through ICMR-NARI

Budget: Rs.58,09,202/-

Background

The “Evaluation of Impact of Antiretroviral Therapy under National AIDS Control Programme in India [The ART Impact Evaluation- India Study (ARTIE-India)] is a collaborated study where NARI-ICMR, Pune is lead coordinating unit and NIMS-ICMR is one of the RP – Regional Partner and TP – Technical Partner Institute to implement in Northern region states i.e., Punjab, Haryana, Himachal Pradesh, NCT of Delhi, Uttarakhand, Chandigarh and Uttar Pradesh.

Objectives

- To assess the impact of ART programme on mortality, morbidity, including opportunistic infections profile, hospitalization rates and incidence of TB and quality of life in PLHIV in NACO supported ART Centres in India at National and Regional level.
- To assess the implementation of the ART programme with reference to the clinical and programmatic goals of ART program under NACP.

Data and Methodology

Health data available at ART centres, parent hospitals, NACO and State AIDS Control Societies and any other data available publicly for an impact evaluation will be used.

The study will also directly collect information (through interviews/focused group discussions) and some samples from some selected persons seeking care at selected ART centres. A total of 81 centres would be considered for the study. ICMR-NIMS has been provided the responsibility of 10 centres in the north region that includes, ART centres from Delhi, Uttar Pradesh, Meerut, Haryana, Uttarakhand, Srinagar, Jammu, Srinagar, Chandigarh, Punjab.

Progress

The Core Evaluation Team (CET) and key expert group meeting was held on April 3-4, 2018 to review the project proposal. The following activities were undertaken in the project during the reporting period. MoU and the data confidentiality agreement between ICMR-NIMS and ICMR-NARI was signed on dated May 30, 2018 to implement the IE-ART project in Northern region. Institute Ethics and Scientific Advisory committee approval was obtained. The study investigators participated in all the meetings organised by ICMR-NARI and contributed in the development of study design. Field primary data protocol was prepared by ICMR-NARI and reviewed by regional partners and implemented during data collection. ICMR-NIMS also contributed towards finalisation of sampling plan and tools required for secondary and primary data collection. Recruited project staff Regional coordinator, Investigator, Data entry operator for the study as per the salaries mentioned in approved budget on dated October 5, 12, 2018.

Training of trainers: The study team from different regions received orientation on the project activities and on the methodology at ICMR-National AIDS Research Institute. Tools of data collection were discussed in detail and mock sessions were conducted for tool finalisation. Following this, ART centres in the Northern region were briefed about the project and permission was sought to conduct the different activities as delineated in the project.

Training on quantitative data collection: Training programme was organised in institute for the technical officers and the project team on techniques and procedures to be followed for the collection of secondary and primary data including collecting information

on out of pocket expenditure. Project activities for North India States namely Himachal, Pradesh, Uttar Pradesh, Uttarakhand, Punjab, Haryana, Delhi, Jammu & Kashmir & Chandigarh was initiated following the training. This was followed by training for collection of qualitative data and collection in few selected centres. Monitoring and supervision of secondary data extraction of these ART centres was conducted during November 1, 2018 - March 20, 2019.

Summary of secondary and primary data collection: - Nearly 33398 secondary data across 10 ART centres were extracted and primary data was collected from 664 individuals from 8 ART centres. Qualitative data was collected through 2 FGDs and 6 in-depth interviews from various centres. Data entry was simultaneously carried out from December 1, 2018 - March 31, 2019 and total forms completed were about 34 thousand.

Institute was also given the responsibility of testing the viral load and this specific activity began in the month of March.

III. HIV Sentinel Surveillance 2017: Data Management, Analysis, and Estimation of HIV burden in India and its states

Principal Investigator: Dr.Damodar Sahu

Co-Investigators: Dr.Saritha Nair, Dr.Kh.Jitenkumar Singh, Dr.Anil Kumar

Study Period: April 1, 2018 - March 31, 2020

Financial Support: National AIDS Control Organization, New Delhi

Budget: Rs. 55.16 Lakhs

Background

HIV Estimation has been the cornerstone of the National AIDS Control Programme (NACP). The HIV estimates exercise has been carried out in the country for the last 20 years, since 1998. It is a technically rigorous scientific process led by the National Institute of Medical Statistics (ICMR-NIMS) with the National AIDS Control Organisation (NACO, MoHFW).

Objective

To provide updated information on the status of HIV epidemic in India at national and State/Union Territory (UT) levels, on adult HIV prevalence, annual new infections (HIV incidence), AIDS-related mortality and prevention of mother-to-child transmission (PMTCT) needs.

Data and Methodology

HIV Estimations 2017 used latest Spectrum 5.63 as recommended by UNAIDS. The State/UT models in this round are improved over previous rounds in terms of data inputs,

approach to handling the survey data as well as assumptions of various epidemiological parameters. The improvements included updating of sex/age pattern of incidence using data from the 3rd and 4th rounds of National Family Health Survey. In view of these improvements, results from HIV estimations 2017 are more robust, cannot be compared with previous rounds of estimations and replace all previous estimations on the level and trends of the HIV epidemic as well as programme needs.

India HIV Estimation 2017 technical report was published and is available on NACO and ICMR-NIMS website.

Summary of HIV estimation round 2017: HIV Estimations 2017, the latest round, provide updated information on the status of HIV epidemic in India at national and State/Union Territory (UT) levels, on key indicators: adult HIV prevalence, annual new infections (HIV incidence), AIDS-related mortality and prevention of mother-to-child transmission (PMTCT) needs.

By the end of 2017, there were an estimated 21.40 [15.90 - 28.39] lakh people living with HIV (PLHIV) in India. There was an adult (15-49 years) HIV prevalence of 0.22%. Slightly more than two fifths (42%) of the total estimated PLHIV were females. Around 87.58 [36.45 – 172.90] thousand new HIV infections and 69.11 [29.94 -140.84] thousand AIDS-related deaths occurred in 2017. Meanwhile, an estimated 22,677 [10,927-40,605] pregnant women needed ART to prevent mother-to-child transmission of HIV.

At 2.04% [1.57-2.56], Mizoram had the highest adult HIV prevalence in the country, followed by Manipur at 1.43% [1.17-1.75] and Nagaland at 1.15% [0.92-1.41]. Telangana [0.70%, 0.50- 0.95], Andhra Pradesh [0.63%, 0.47-0.85], Karnataka [0.47%, 0.37-0.63], Goa [0.42%, 0.21-0.79], Maharashtra [0.33%,0.25-0.45] and Delhi [0.30%, 0.18-0.47] were other States/UT with adult HIV prevalence higher than the national average. Tamil Nadu [0.22%, 0.14-0.31] had a point prevalence like the national prevalence. All other States/UT had adult HIV prevalence similar to or lower than the national average. Lowest adult HIV prevalence was in the State of Jammu & Kashmir [0.03%, 0.01-0.07].

With 3.30 lakh [2.531-4.353] PLHIV, Maharashtra had the highest number of PLHIV contributing 15% of total PLHIV in the country. Andhra Pradesh [2.70 lakh, 2.005-3.581], Karnataka [2.47 lakh, 1.914-3.235] and Telangana [2.04 lakh, 1.495-2.773] were the other States with PLHIV estimate number in the range of 2 to 3 lakh. West Bengal [1.44 lakh, 1.038-1.914], Tamil Nadu [1.42 lakh, 0.932-1.975], Uttar Pradesh [1.34 lakh, 1.018-1.776] and Bihar [1.15 lakh, 0.838-1.587] had PLHIV between one and two lakhs. Together, these eight States contribute almost three fourth of the total number of PLHIV in country.

HIV incidence per 1000 uninfected population in 2017 was highest in Mizoram (1.32) followed by Nagaland (0.59) and Manipur (0.58). Telangana, Chandigarh, Delhi, Andaman & Nicobar Islands, Dadra & Nagar Haveli, Andhra Pradesh, Goa, Daman & Diu and Puducherry had HIV incidence per 1000 uninfected population in the range of 0.11-0.26. Haryana, West Bengal, Bihar, Karnataka, Gujarat, Jharkhand, Punjab, Uttarakhand, Chhattisgarh, Meghalaya, Odisha, Arunachal Pradesh, Maharashtra, Tamil Nadu and

Tripura had HIV incidence per 1000 uninfected population in the range of 0.05-0.09. All the other States/UTs had HIV incidence per 1000 uninfected population less than 0.05.

While HIV incidence among the general population is low across States except for a few, it is much higher among HRGs. Within the HRG group, the incidence rate is much higher among IDU than FSW or MSM.

With an estimated 9,324 [4,860-14,768] new HIV infections in 2017, Telangana had the highest number of new annual HIV infections contributing to 11% of total in the country. Bihar was next, contributing 10% of total, followed by West Bengal (10%), Uttar Pradesh (8%), Andhra Pradesh (7%), Maharashtra (7%), Karnataka (6%) and Gujarat (5%). Together, these eight States contributed almost two thirds of all annual new HIV infections in India.

New HIV infections have peaked in 1995 and then started to decline. An estimated 87.58 thousand [36.45 – 172.90] new HIV infections occurred in 2017, meaning there has been an 85% decline in annual new HIV infections since the peak of the epidemic. However, the pace of decline in new HIV infections has levelled off in recent years. Between 2010 and 2017, new HIV infections have declined by only 27%. The target is to achieve a 75% reduction in new infections by 2020, from the baseline value of 2010.

While the new infections are declining nationally, there are inter-State variations. In five States, viz. Arunachal Pradesh (65%), Assam (37%), Mizoram (18%), Meghalaya (10%) and Uttarakhand (4%), new infections increased in 2017 in comparison to 2010. In the remaining States/UT, new infections are declining. However, there were variations in the level of decline. In the States/UT of Chhattisgarh, Delhi, Jammu & Kashmir, Manipur, and Nagaland, the decline has been 10% or less.

Nationally, around 69.11 thousand [29.94-140.84] PLHIV died of AIDS related causes in 2017. Annual AIDS-related deaths among PLHIV kept on increasing until 2005 and then started to decline. Since the peak, the number of annual AIDS-related deaths have declined by almost 71%. Similar to the national trend, AIDS-related deaths have dropped in all of India's States/UTs after attaining a peak in the period from 2005 to 2010, with the exception of Assam, Bihar, Jharkhand, Haryana, Delhi and Uttarakhand.

India is estimated to have had around 22,677 [10,927-40,605] HIV-positive women who gave birth in 2017 and needed prophylaxis for prevention of mother-to-child transmission (PMTCT) of HIV. State-wise, the PMTCT need was highest in Maharashtra followed by Uttar Pradesh, Bihar, Andhra Pradesh, Karnataka, Telangana, West Bengal, Gujarat, Tamil Nadu and Rajasthan. Together, these 10 States contribute almost three fourth of the total PMTCT need in the country.

HIV Estimations 2017 corroborate the previous rounds in terms of characteristic of the HIV epidemic in India. While the national HIV prevalence and incidence remains low, the epidemic is strong in some geographical regions and population groups. The impact of the programme has been significant but there is no place for complacency.

District level PLHIV Estimation under NACP

A National Working Group was constituted by NACO and two national working group consultation meeting was organized for district level PLHIV estimation methodologies finalization at ICMR-NIMS and list is given below.

August, 2018	The first meeting of the National Working Group (NWG) on District-Level PLHIV estimates organized by ICMR-NIMS, New Delhi
March 29, 2019	The second meeting of the National Working Group (NWG) on District-Level PLHIV estimates organized by ICMR-NIMS at ICMR-NIMS, New Delhi

IV. Comparing Methods of Assigning Causes of Death

Principal Investigator: Dr.S.K.Benara

Co-Investigators: Dr.Atul Juneja, Dr.Saritha Nair, Dr.B.K.Gulati, Dr.Lucky Singh, Dr.Saurabh Sharma

Data collection: Technical Officers

Study Period- April 2016 - November 2019

Financial Support: Ministry of Health and Family Welfare and World Health Organization

Budget: Rs.2,61,73,692

Background

Information on causes of death (CODs) is essential for planning, implementing, monitoring, and evaluating public health interventions at all levels. In the absence of robust information on cause of death through vital registration system, studies suggest that verbal autopsy (VA) could be used to provide useful on the causes of death. The information obtained by VA is assigned causes of death by physician certified verbal autopsy (PCVA) method as a convention. More recently, computer coded verbal autopsy (CCVA) methods have been developed as an alternative approach. In India, PCVA has been used by the Registrar General of India since 1999. The Ministry of Health and Family Welfare (MOHFW) commissioned a research study to assess and compare the validity of different techniques (PCVA and CCVA) for assigning causes of death from WHO harmonised questionnaire, using the medical record based diagnosis for the select hospital deaths as reference values for validation of VA diagnosis for the same deaths from each of the different techniques and to conduct VA and assign COD in select rural areas with the help of existing health infrastructure and recommend the optimum methodology required for routine national VA programme to ascertain causes of death in India. Accordingly, ICMR-National Institute of Medical Statistics, New Delhi designed a study to compare the CODs assigned by PCVA and three CCVA methods (InterVA, InSilico

and Tariff) using medical record-based diagnoses as a reference standard to evaluate the performance and accuracy of each method.

Objectives

- To field test the WHO harmonized VA tool (2016) in Indian context.
- To assess and compare the validity of various causes of death algorithms (PCVA and CCVA-Inter VA, Tariff and InSilico) in assigning causes of death based on the WHO harmonized VA tool (2016).
- To utilise the study findings in recommending the methodology for a routine national VA programme to ascertain causes of death in India.

Methodology

To meet the objectives the study was divided in two arms. The urban was designed to fulfil the first object i.e. to identify the optimal method to assign the cause of death and the second i.e. rural arm to recommend the optimum methodology required for routine national VA programme to ascertain causes of death in India with the existing infrastructure.

Data management and analysis is going on.

V. Quality of Care in Maternal and Newborn Health in Rural India: A Multilevel Modelling

Principal Investigator: Dr.Lucky Singh

Co-Investigator: Dr.Saritha Nair

Assisted by: Mr.Ganesh Prasad Jena

Study Period- 2018-2020

Financial Support: Indian Council of Medical Research, New Delhi

Budget: Rs.12.5 Lakh

Background

Literature review indicates high quality of care in pregnancy and childbirth as one of the service interventions that has potential to impact on the high maternal and child survival. Ensuring high coverage of antenatal, delivery and post-natal care could save millions of early deaths among children. However, studies from developing countries indicate low quality of maternal healthcare services, including lack of trained human resources, inadequate medical equipments and absence of staff along with poor accessibility. Although studies on quality of maternal healthcare services have been carried out elsewhere, there is a paucity of data on the quality of care in India. Moreover, little attempt has been made in Indian context to examining at what extent quality of maternal and newborn health determine early-neonatal mortality. More rigorous examinations of

the quality of care in pregnancy and childbirth needed in order to identify specific problems and develop strategies to improve the neo-natal survival in India. Research community in general and policy makers in particular will be benefited from the study results that would help to revisit the growing need of specific interventions towards Maternal and Newborn Health in India.

Objectives

- To assess the quality of antenatal care (ANC), safe delivery, and post-natal care among the Indian women and
- To ascertain the association between quality of antenatal care, safe delivery, and post-natal care and its effect on early neonatal mortality in India.

Data and Methodology

First, bivariate analyses have been performed to examine the nature of association between quality of care for maternal and new born health, early neonatal mortality and selected background characteristics. To consider the hierarchical structure of the data, the study has employed the following multilevel logistic regression model to examine factors affecting the quality of care for maternal and newborn health and early neo-natal mortality.

$$\ln \left[\frac{p_{icd}}{1 - p_{icd}} \right] = \alpha + x_{icd}\beta + w_{cd}\gamma + z_d\eta + u_{cd} + v_d$$

where,

$\ln \left[\frac{p_{icd}}{1 - p_{icd}} \right]$ is the logit in which p_{icd} is the probability of woman 'i' in community (PSU) 'c' in district 'd' using maternity healthcare services; x_{icd} , w_{cd} , and z_d are vectors of individual/household, community level and district level characteristics; α is a constant, while β , γ , and η are vectors of estimated parameter coefficients; and u_{cd} and v_d are unexplained residual terms at the community level and district level, respectively.

Progress

Analysis is currently ongoing. Results revealed that about 18% of eligible women were devoid of any ANC while more than half (about 59%) received ANC services that did not match the quality mandated by the WHO and Government of India. It was observed that postnatal care delivered by unskilled healthcare personnel were more efficient in saving precious neonatal lives within 24 hours of birth is necessary, especially among the high focus states of the country. Regarding the continuum of care encompassing all the components of maternal and newborn care (Antenatal, Delivery and Postnatal care), major dropouts were noticed in the postnatal care utilized by the newborns while the almost 90% of all women accessing antenatal care utilized quality delivery care services. Age, parity, household wealth status, and proportion of illiteracy in the PSU were observed to have a significant association in the uptake of maternal services. Mother's level of education was observed to be significantly associated with uptake of quality postnatal service by the newborn.

VI. Socioeconomic Inequality in Households Financial Burden Associated with Non-Communicable Diseases in India

Principal Investigator: Dr.Jeetendra Yadav

Co-Investigators: Dr.Geetha R.Menon, Dr.Saritha Nair

Study Period: January 1, 2019 - December 31, 2019

Background

Households use a range of sources such as income, savings, borrowing, using loans or mortgages, and selling assets and livestock to meet OOP health spending. Available evidence rejects the hypothesis of full consumption insurance in the face of major health shocks. The growing burden of NCDs combined with technological innovation and heightened patient, community, and provider expectations pose challenges to the affordability of healthcare for households and governments alike. The large national-level economic impacts are underpinned by adverse economic outcomes for households affected by the disease. Catastrophic health expenditure has been found to occur in more than 60% of some patient populations with non-communicable diseases (NCDs; cancer, cardiovascular disease, and stroke); large variations in such outcomes occur by disease and context. Being uninsured increases the risk of catastrophic health expenditure in patients with non-communicable diseases. Programmes to achieve universal health coverage need to adopt compulsory pre-payment via taxes or national insurance contributions. Cost-effectiveness and the targeting of the poorest groups need to be primary considerations in prioritizing services that are included in insurance programmes to achieve universal health coverage. Addressing the household economic burden of NCDs is an important step in efforts to alleviate global poverty and achieve the UN's Sustainable Development Goals. Poor health is a source of impoverishment among households in low –and middle- income countries (LMICs) and a subject of voluminous literature in recent years.

Objectives

- To study the impact of financial burden due to NCDs on household.
- To determine socio-economic inequality in Out-of-Pocket Health Expenditure, Catastrophic Health Expenditure and hardship health financing due to NCD.
- To assess the extent of iatrogenic poverty due to NCD

Data and Methodology

This study used secondary data (two rounds of NSSO data) of nationwide Consumer Expenditure Surveys for the years 2004 [NSSO 2004 (61st round)], and 2014 [NSSO 2014

(71st round)]. National Sample Survey Organisation is a national organization under the Ministry of Statistics, established in 1950 to regularly conduct surveys and provide useful statistics on socio-economic status of households, demography, health, industries, agriculture, consumer expenditure, etc. The NSSO 60th round, 2004-05 surveys covered 73,868 household and NSSO 71th round, 2014 survey covered 65,932 household

Outcome Measures

This study examines the four-main outcomes namely Out of pocket expenditure, catastrophic health expenditure, Hardship health financing and poverty.

Out of pocket expenditure (OOPE): For Out of pocket expenditure, this study has used direct medical costs (hospital stay, consultation, treatment medicines and procedures, laboratory and other investigation charges), direct non-medical costs (transportation, meals, lodging (for patients and attendants)), and indirect costs (loss of wages for patient and care giver etc.).

Catastrophic health expenditure (CHE): Catastrophic spending on health occurs when a household reduces its basic expenses over a certain period of time, sell assets, or accumulate debts in order to cope with the medical bills of one or more of its members. Since there are no universally accepted cut-off values or thresholds for defining the catastrophic nature of healthcare payments, the catastrophic headcount has been defined here as the percentage of households spending more than a 5-40% of their total consumption expenditure on healthcare.

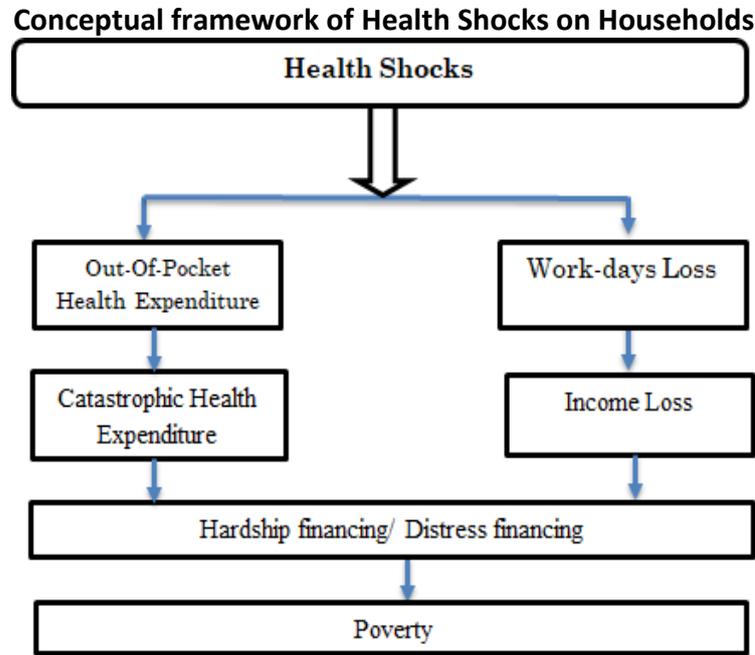
For this study CHE is defined as household health spending exceeding between the two time points at the 5%, 10%, 25% and 40% thresholds of total household consumption expenditure.

Hardship health financing: Hardship health financing is defined as a situation when a household has to borrow money with interest or sell their property/assets to meet its health care expenses.

Poverty: Level of consumption expenditure as defined and estimated by NITIAayog (Planning Commission) is used. To assess the poverty effect of the health care expenditure on households, computed per capita household consumption expenditure (PCHCE) from the gross of the health care expenditure with Planning Commission (2012, Tendulkar Committee) cut-off values of PCHCE eligible for categorization of household below poverty line (BPL) for rural and urban households and then obtained the proportion of households falling below the BPL by rural and urban. The same process of computation of PCHCE and obtaining proportion of households pushed below BPL after spent the health care expenditure by the households from the total household consumption expenditure. Consequently, we found the two sets of distribution of households falling below the BPL, one before health care expenditure and another after spending the health care expenditure. The difference between the two distributions gives the proportion of households which have been pushed to poverty as a consequence of the out-of-pocket health care expenditure.

Statistical Modelling

Descriptive statistics, bivariate estimates, decomposition and multivariable regression models have been performed to examine the levels, association, inequality and factors affecting the household economic burden by the selected socioeconomic characteristics.



Statistical Methods

Descriptive statistics, bivariate estimates, multivariable regression models and decomposition have been performed to examine the levels, association, inequality and factors affecting the household economic burden by the selected socioeconomic characteristics.

Multivariable linear regression analysis for out of pocket expenditure

$$Y^{2004} = \beta_0 + \beta_1 X_{1(2004)} + \beta_n X_{n(2004)} + e_{2004}$$

$$Y^{2014} = \beta_0 + \beta_1 X_{1(2014)} + \beta_n X_{n(2014)} + e_{2014}$$

Where, Y is health expenditure, X is the vector of independent variables, β_0 are the regression coefficients and e is the error term.

Multivariable logistic regression for CHE, Hardship and poverty

$$\ln \left[\frac{pi}{1 - pi} \right]_{2004} = \beta_0 + \beta_1 X_{1(2004)} + \beta_n X_{n(2004)} + e_{2004}$$

$$\ln \left[\frac{pi}{1 - pi} \right]_{2014} = \beta_0 + \beta_1 X_{1(2014)} + \beta_n X_{n(2014)} + e_{2014}$$

where,

π_i = probability of odds ratio

β_0 = constant

β_1 = coefficient

Summary Findings

Results indicated that people from richer strata spent more on treatment than the poor people, since they are capable to pay more for better quality care. But the share of the health expenditure of total household expenditure is much higher among the poorest quintile. As expected, patients from urban areas spent more on treatment because of better accessibility of health care. Patients getting treatment from private hospital spend more, which indicated that the cost of treatment in private hospital is high and also public hospitals charges minimal or sometimes nothing. Further, spending was more among patients in special wards and patient stayed a greater number of days in a hospital. Results also indicated that the expenditure on transportation were high in rural areas and expenditure on medicine was high in urban. Irrespective of time period, educated, urban and male patients spend more as compared to their counterparts for Outpatient care. As expected, patients getting treatment from private hospitals spend more than the patients who took treatment from public hospitals for Outpatient care.

One in every six households faced catastrophic health expenditure at the 40% threshold of total household consumption expenditure irrespective of time periods. Several others previous studies also indicated that the catastrophic health care payment was very high among household, whose any member suffered/suffering from Non- communicable diseases. It is important to note that the CHE due to OOPE increased if patients took the treatment in private hospital in past one decade while patients getting treatment in public hospital decreased in past one decade. This indicates that over a period private hospital treatment costs were increased while treatment costs in public hospitals were decreased. Among all the NCD, the highest incidence of CHE was reported for cancer irrespective of time period and type of health facility and similar finding observed in previous studies.

This study defined hardship financing as a situation when a household has to borrow money with interest or sell their property/assets to meet its health care expenses. This study found that more than half (52.2%) households were facing hardship health financing those who were taking treatment in private hospital and it was substantially higher than in public hospitals (43.6%) in 2004 where hardship financing is reduced after ten years in 2014 but still almost one fourth (24.4%) households were exposed to hardship financing those who took the treatment in private hospitals as compared to 18.4 per cent in public hospitals. A study done by Doorslaer pointed out that near about two thirds of patients had borrowed money from friends or selling their property to meet their health care expenditure during hospitalization. Similar findings showed by another previous study that about two thirds of hospitalized patients (all-India average) had to sell assets or borrow money from friends to pay the treatment cost during treatment in hospital. This study reconfirm that the Cancer patients were reported higher hardship

financing and it was considerably higher among those who sought care in private hospitals as similar findings indicated by previous study.

Almost one in every fifth household and one in every eight households became poorer as a consequence of the OOP for health care for NCD who have taken treatment in private hospital and public hospital respectively. Household living in rural areas seeking treatment in private hospitalization are more likely to push to poverty. It is noted that the OOP expenditure for wealth quintile can be seen highest in the low quintile group. Duration of stay in hospital is one of the main indicators which push the household into the trap of poverty, the longer the stay the higher the OOP expenditure. The patients suffering from cancer are exposed to poverty due to OOP expenditure in both the time period and type of health facility.

VII. Modelling Under-nutrition in Under-Five Year Children, Northeast States, India

Principal Investigator: Dr.Khangembam Jitenkumar Singh
Study Period: January 1, 2019 - December 31, 2019

Background

It is well established that the individual-level characteristics of the child have a significant influence on child malnutrition. However, very few studies have explored the impact of contextual factors on the malnourishment of children. Though well known, what is essential for a thorough understanding of the determinants of malnourishment and therefore for effective policy intervention, is the degree to which the geographical variations in malnutrition are related to the district-level differences, along with the differentials at the village and household level. Thus, the contextual aspect of child malnutrition needs to be explored to understand the process of malnourishment as a whole in the northeast state. The sex of a child is important in the context of discrimination against the girl child in access to intra-household resources particularly food, healthcare and education. The current study will attempt to see the extent of gender difference in the nutritional status of children and its causing factors. If, there is a gender difference in child under-nutrition, then to what extent demographic and socioeconomic factors explain this gap. And, also, it will examine the spatial distribution of child malnutrition and to assess high and low prevalence district/cluster of child malnutrition.

Objectives

- To examine the gender difference in child under-nutrition in Northeast states, and understand the role of factors underlying the difference.
- To examine the spatial distribution of child malnutrition and high and low prevalence district/cluster of child malnutrition.

Data and Methodology

This study utilizes data collected in fourth round of National Family Health Survey (NFHS-4), which was conducted during 2015-2016, it provides information on population, health, and nutrition for India and each state/ Union territory. NFHS-4 conducted under the Stewardship of Ministry of Health and Family Welfare (MoHFW), Government of India, coordinated by the International Institute for Population Sciences, Mumbai. The survey covered a range of health-related issues including child health, maternal, fertility, malaria, reproductive health, infant and child mortality, non-communication diseases and HIV knowledge and provide information on key indicators of all the districts above state and national level and helps to produce reliable estimates of most indicators for rural, urban and total of the districts as a whole. We obtained data for 86 districts of 8 states in north eastern states viz., 27 in Assam, 16 in Arunachal Pradesh, 9 in Manipur, 7 in Meghalaya, 8 in Mizoram, 11 in Nagaland, 4 in Sikkim and 4 in Tripura, respectively. North-eastern states shape file were extracted from India shape file after downloading through Diva GIS, the final feature class had 86 polygons representing each survey district in NFHS-4.

Study Variables

Children's nutritional outcomes will be measured using z-scores of weight-for-height (WHZ), height-for-age (HAZ) and weight-for-age (WAZ).

Anthropometric Measures

- Wasting or thinness (low weight for height) measures weight loss due to starvation and episodes of severe diseases.
- Stunting (low height for age) reflects the continuous failure of growth associated with poor living conditions and recurrent diseases.
- Low weight for height indicates low body mass relative to height due to a shortage of food and energy and is considered as a composite of weight for height & height for age. It captured both chronic and acute malnutrition.

Based on these z-scores, three measures of under-nutrition: wasting, stunting and underweight will be computed and categorized as severe and moderate malnutrition corresponding to below -3SD and between -2SD & -3SD in comparison to NCHS/WHO international reference population.

Explanatory Variables

Household characteristics: Household wealth index, Caste (social status), Religion, Tribal/Non-tribal, Place of residence. Hygienic: Water sources, Toilet sources. Maternal: Mother's education, BMI (kg/m²), Current age, Children ever born, Mother's nutritional knowledge, Mother's personal habits: Mother's smoking, consumed smokeless tobacco

and alcohol. Child's characteristics: Current age, Gender, Birth order. Other's: Father's education, separate kitchen, Type of cooking fuel and Number of family members.

Methodology

Multi-level logistic model

For multilevel regression analysis, dependent variable is overall nutritional status, coded as 1=yes, severely malnourished and 0=No, well-nourished. This dichotomized variable was then used as the dependent variable in the analysis.

$$\text{If } \pi_{ijk} = P(y_{ijk} = 1)$$

then, the three level logistic model can be written as:

$$y_{ijk} = \pi_{ijk} + e_{0ijk}$$

where,

$$\text{logit}(\pi_{ijk}) = \beta_{1jk} + \sum \beta_{ijk} X_{ijk}$$

and where,

$$\beta_{1jk} = \text{constant} + v_{1k} + u_{1jk},$$

$$[v_{1k}] \sim N(0, \Omega_v) \text{ and } [u_{1jk}] \sim N(0, \Omega_u)$$

This model assumed an average probability of severely malnourished status and the contextual factors to vary across communities. Model assessment in terms of variation in the variable is explained by the contextual covariates at three levels with reference to the empty model:

$$y_{ijk} = \pi_{ijk} + e_{0ijk} ; \text{logist}(\pi_{ijk}) = \beta_{0jk} + e_{0ijk}$$

Blinder-Oaxaca decomposition

The aim of the Blinder-Oaxaca decomposition is to explain how much of the difference in mean outcomes across two groups is due to group difference in the levels of explanatory variables, and how much is due to differences in the magnitude of regression coefficients (Oaxaca 1973; Blinder 1973).

The outcome variables of interest in this study are WHZ (wasting), HAZ (stunting) and WAZ (underweight) in comparison with the World Health Organizations reference population. For example, if y_i , outcome variable, is affected by a single variable, x , and we have two groups male and female, then WHZ for the female, and male children are given by equations (1) and (2) respectively

$$y_i^{female} = \beta^{female} x_i + \epsilon_i^{female} \dots \dots \dots (1)$$

$$y_i^{male} = \beta^{male} x_i + \epsilon_i^{male} \dots \dots \dots (2)$$

where, the vector of β parameters include intercepts. Female group are assumed to have a more advantageous regression line (lower score on WHZ) than the male group. Also, female group are assumed to have a higher mean of x . It is assumed that ergogeneity, and thus the conditional expectations of the error terms in equations (1) and 2() are zero. Thus, the male-female gap in mean outcome WHZ, is equal to

$$y^{male} - y^{female} = \beta^{male} x^{male} - \beta^{female} x^{female} \dots \dots \dots (3)$$

where, x^{male} and x^{female} are the vectors of the explanatory (independent) variables at their mean for male and female, respectively. The gap in outcome is the sum of a characteristics effect and a coefficients effect. The overall male-female gap could be decomposed into a gap that is attributable to difference in the level of covariates, x 's and a gap that is attributable to difference in coefficients, β 's as

$$\begin{aligned} y^{male} - y^{female} &= \beta^{female} x^{male} - \beta^{female} x^{female} + \beta^{male} x^{female} - \beta^{female} x^{female} \\ &+ (\beta^{male} x^{male} - \beta^{female} x^{male} - \beta^{male} x^{female} + \beta^{female} x^{female}) \\ &= \Delta x \beta^{female} + \Delta \beta x^{female} + \Delta x \Delta \beta \dots \dots \dots (4) \\ &= E + C + CE \end{aligned}$$

where the overall male-female gap in child malnutrition is comprised of the gap in endowment (E) "endowment effect" and expresses the contribution attributable due to the difference in distribution of the determinant x between male and female, and, gap between coefficient (C) "coefficient effect" and refers to the gap attributable to the difference of effect x between male and female, and the interaction (CE) "interaction effect" and refers to the gap that is explained by the interaction between endowment and coefficient.

Spatial Autocorrelation

The first measure used in this study is global Moran's I , which gives an indication of the overall spatial autocorrelation of a dataset. The second measure is a local indicator of spatial association (LISA) measure of local Moran's I , which indicates the "presence or absence of significant spatial clusters or outliers for each location" in a dataset.

Moran's I statistics:

Moran's I is defined as,

$$I = \frac{N}{\sum_i \sum_j w_{ij}} \frac{\sum_i \sum_j w_{ij} (X_i - \bar{X}) (X_j - \bar{X})}{\sum_i (X_i - \bar{X})^2}$$

where,
 N is the number of spatial units indexed by i and j ; X is the variable of interest; \bar{X} is the mean of X ; and w_{ij} is an element of a matrix of spatial weights.

Local Indicators of Spatial Association (LISA) statistics is defined as

$$I_i = Z_i \sum_j w_{ij} z_j$$

where, observation is, z_j are in deviations from the mean from i^{th} location to j^{th} location and the summation over j such that only neighbouring values $j \in J_i$ are included. And w_{ij} is a spatial weight measuring the nearness of subareas i and j .

Hot Spot Analysis

The Getis-Ord local statistics (G_i^*) is given as

$$G_i^* = \frac{\sum_{j=1}^n w_{i,j} x_j - \bar{X} \sum_{j=1}^n w_{i,j}}{S \sqrt{\frac{[n \sum_{j=1}^n w_{i,j}^2 - (\sum_{j=1}^n w_{i,j})^2]}{n-1}}} \quad (1)$$

where, x_j is the attribute value for feature j , $w_{i,j}$ is the spatial weight between feature i and j , n is equal to the number of feature and

$$\bar{X} = \frac{\sum_{i=1}^n x_j}{n} \quad (2)$$

$$S = \sqrt{\frac{\sum_{j=1}^n x_j^2}{n} - (\bar{X})^2} \quad (3)$$

The G_i^* statistics is a z- score.

Expected outcomes

The expected outcomes of this project are identifying the hot-spot district/cluster/pockets, creation of expanding enclaves of malnutrition free regions and faster progress towards achieving relevant SGD goals.

Progress

Situation of under-nutrition child in India and north eastern states: 38% of Indian children aged <5 year were stunted (or short), 21% were wasted (or thin) and 36% of children in the same age group were underweight (or light) (NFHS-4, 2015-16), overall, girls and boys were about equally undernourished. The Prevalence of stunting increases with a child's age through 18-23 months and decreases slightly thereafter. Children born to mothers, BMI less than 18.5 kg/m² are likely to be stunted, wasted, and underweight. Stunting is higher among children in rural areas (41%) than urban (31%). The prevalence of stunting children aged <5 year is highest in Bihar (48%), Uttar Pradesh (46%), Jharkhand (45%) and Meghalaya (44%). Underweight (48%) and wasting (29%), is highest in Jharkhand.

State	Low height-for-age (Stunted) (% below -2 SD)	Low weight-for-height (Wasted) (% below -2 SD)	Low weight-for-age (Underweight) (% below -2 SD)
Arunachal Pradesh	29.3	17.3	19.4
Assam	36.4	17.0	29.8
Manipur	28.9	6.8	13.8
Meghalaya	43.8	15.3	28.9
Mizoram	28.1	6.1	12.0
Nagaland	28.6	11.3	16.7
Sikkim	29.6	14.2	14.2
Tripura	24.3	16.8	24.1
India	38.4	21.0	35.7

Source: NFHS 4 India report (2015-16)

Table 1. Number of children under five year by states in north eastern states, India, NFHS-4 (2015-16)

States	Number of districts	Number of clusters (PSU)	Number of children
Arunachal Pradesh	16	604	3851
Assam	27	1136	8855
Manipur	9	556	5256
Meghalaya	7	342	3823
Mizoram	8	542	4309
Nagaland	11	533	3825
Sikkim	4	215	898
Tripura	4	315	1188
Total	86	4243	32,005

Invited Talks/Lecture

Speaker and Details of the Lecture

Dr.M.Vishnu Vardhana Rao

Visited Mumbai to delivered Guest Lecture on “Clinical Trials Registry” in the session of “Creation of Health Data Registries, its effective implementation & use” of South Asian College (SAC)-An Affiliate of American College of Clinical Pharmacology” (ACCP) of 11th Annual Conference of Clinical Pharmacology: Contributing to Global Health and Policies” organized with collaboration ICMR-NIRRH at Nehru Centre Anne Besant Road Worli Mumbai, May 2, 2018.

Deliver a Lecture on “Research Process” in the workshop on “Application of Statistical Software in Medical Research” at ICMR-National Institute of Cancer Prevention and Research & WHO FCTC Global Knowledge Hub on Smokeless Tobacco 1-7, Sector-39, Noida-201301, National Capital Region, August 1, 2018.

ICMR-RMRC, Bhubaneswar Workshop: As a Resource Person in the Two-day workshop on “Principles and Practice of Clinical Research” funded by ICMR & Speak on “Study Design” & “Sample Size and Power”, November 13, 2018.

Visited Bhopal to delivered the memorial lecture in the 72nd Annual Conference on “Statistics, Informatics and Engineering Interventions – A Road Map to Transform Indian Agriculture towards Prosperity at ICAR-Central Institute of Agricultural Engineering (CIAE), Nabi Bagh, Berasia Road, Bhopal, Madhya Pradesh, December 13-15, 2018.

Dr.H.K.Chaturvedi

Delivered talks on different topics and participated in discussion to answerer research methodology related to the queries raised by the participants during the workshop on “Statistical Methods in Biomedical Research” at National Institute of Occupational Health (NIOH), Ahmedabad, April 4-6, 2018.

Delivered a talk on report-writing for Evaluation of a programme at National Institute of Public Cooperation and Child Development, New Delhi, October 12, 2018.

Deliver a talk on Sample Size and Sampling Techniques in Evaluation "Training-Cum-Workshop on Designing and Developing Evaluation Research Proposal for Health Programmes/ Schemes Under NHM” held at NIHFWS,

New Delhi, December 3-7, 2018.

Deliver a talk on Survival Analysis "Training-Cum-Workshop on Research Methodology and data analysis using R held at ICMR-NIMS, New Delhi, March 12-14, 2019.

Dr.Damodar Sahu

Resource person for the institute's Summer internship programme for Postgraduate student in Statistics of Kurukshetra University, Kurukshetra at ICMR-NIMS, June 4-15, 2018.

Delivered lecture on Data Analysis using Statistical Software for Health and Demographic research in the training workshop organized by NIHFWS, during Sept 10-14, 2018 at NIHFWS, September 12, 2018.

Delivered lecture on sampling techniques in Health Research BIOMER 2018 – Bio-statistical Methods in Medical research organized by NIMS-ICMR, December 4-7, 2018.

Invited as resource person for training workshop on size estimation of PLHIV at district Level in three north-east states, Manipur, Nagaland & Mizoram at Redisson Blu Hotel Guwahati organized by FHI360, New Delhi, February 11-12, 2019.

Delivered lecture on survival analysis in Statistical methods in health data analytics using R organized by NIMS_ICMR, March 12-15, 2019.

Dr.Tulsi Adhikari

Delivered a lecture on Probability Distribution and Statistical test of Hypothesis and Logistic Regression Analysis in the Summer Training Programme for the M.Sc. (Statistics) Students, Dept. of Statistics, Kurukshetra University, Babasaheb, June 4-15, 2018.

Delivered a lecture on "Data management: Creating and importing data files SPSS for scientists from RMRC Dibrugarh", September 3-5, 2018.

Delivered a lecture on "Determination of Sample Size for various study designs" in the Workshop on "Bio-statistical Methods in Medical Research" Venue: ICMR-NIMS Conference hall, December 4-7, 2018.

Delivered a lecture on "Determination of Sample Size for various study designs" in the Workshop on "Statistical Methods in Health Data Analytics using R" Venue: ICMR-NIMS Conference hall, March 12-15, 2019.

Dr.Geetha R.Menon

Delivered a lecture on Systematic Reviews and Meta-analysis at the International Institute of Population Sciences, Mumbai, October 17, 2018.

Delivered lectures on Systematic Reviews and Meta-analysis and Observational study designs in the workshop on Bio-statistical Methods in Medical Research in ICMR-NIMS, December 4-5, 2018.

Invited as a guest speaker in AIIMS Oregon Health and Science University Joint Symposium on Oral Health to deliver a talk on "Systematic Review in Public Health", December 12, 2018.

Delivered a lecture on Logistic regression in the workshop on Statistical Methods in Health Data Analytics using R at ICMR-NIMS, March 13, 2019.

Dr. Atul Juneja

Delivered a lecture on Validity and Reliability at the workshop of on data analysis at Prem Institute of Medical Sciences, Panipat, May 10, 2018.

Delivered a lecture on Sample size to the final year students of M.Sc. (Statistics) students of Kurukshetra University during the summer training conducted by ICMR-NIMS, June 5, 2018.

Delivered a lecture on Testing of Hypothesis to the scientists of RMRC Dibrugarh at ICMR-NIMS New Delhi, September 4, 2018.

Delivered a talk on CTRI to faculty and students of Manipal Academy of Health Sciences Manipal through a video call, September 7, 2018.

Delivered a lecture on Designing the study tool during a collaborative workshop on Survey Research Methodology in collaboration with IASDS Lucknow at ICMR-NIMS New Delhi, October 8, 2018.

Delivered lecture on Sampling Techniques to the functionaries of NGO at NIPCCD New Delhi, October 10, 2018.

Delivered a talk on Statistical Considerations in peer Review during a workshop on Peer Review of Scientific Articles organized by Dept. of Paediatric Surgery Maulana Azad Medical College New Delhi, November 11, 2018.

Delivered a talk on CTRI to faculty and students of the Manipal Academy of Health Sciences Manipal through a video call, November 21, 2018.

Presented CTRI to the participants of the workshop on Bio-statistical Methods conducted by ICMR-NIMS New Delhi, December 4-7, 2018.

Presented CTRI during an orientation program for PG students on Research Methodology at All India Institute of Ayurveda, New Delhi, January 23, 2019.

Delivered a talk on Design of Studies and Clinical Trials during a symposium on Biostatistics organized by the Department of Statistics Punjab University Chandigarh, March 12, 2019.

Presented CTRI to the participants of the workshop on Statistical Methods in

health data analytics (13 March 2019) conducted by ICMR-NIMS New Delhi, March 12-15, 2019.

Dr.Saritha Nair

Delivered lecture on “Qualitative Research in Public Health” during the Capacity Building in survey research methodology workshop, October 9, 2018.

Delivered lecture on “Introduction to Qualitative Study design” during workshop on “Bio-statistical Methods in Medical Research” organized by ICMR-NIMS, December 7, 2018.

Resource person for “Workshop on introduction to qualitative methods” organised by ICMR-RMRC Bhubaneswar, December 13, 2018.

Delivered a lecture on ‘Introduction to Demography’ to MPH students at RMRC Bhubaneswar, December 14, 2018.

Dr.Lucky Singh

Delivered lectures in the “Summer Training Workshop” for M.Sc. (Statistics/Biostatistics) students of Dept. of Statistics, Kurukshetra University, Haryana, University of Delhi, New Delhi and International Institute for Population Sciences (IIPS), Mumbai during organized by ICMR-NIMS, New Delhi, June 4-15, 2018.

Delivered lectures in the capacity training programme on “Statistical Data Analysis using SPSS” organized by ICMR-NIMS, New Delhi, September 4-6, 2018.

Delivered lecture on “Random Variables and Probability Distribution” at ICMR-NIMS on December 6, 2018 during workshop on “Bio-statistical Methods in Medical Research” organized by ICMR-NIMS, New Delhi, December 4-7, 2018.

Delivered lecture on “Logistic regression” at ICMR-NIMS on during workshop on “Statistical Methods in Health Data Analytics using R” from March 12-15, 2019 organized by ICMR-NIMS, New Delhi, March 13, 2019.

Dr.Saurabh Sharma

Delivered lectures in the “Summer Training Workshop” for M.Sc. (Statistics/Biostatistics) students of Dept. of Statistics, Kurukshetra University, Haryana, University of Delhi, New Delhi and International Institute for Population Sciences (IIPS), Mumbai during organized by ICMR-NIMS, New Delhi, June 4-15, 2018.

Trained Auxillary Nurse Midwife (ANMs) and Medical Officers on verbal autopsy and Physician certified verbal autopsy during the five-day training workshops at Nuh (Haryana), June 11-15, 2018.

Conducted one day reorientation training programme of Auxillary Nurse Midwife (ANMs) and Medical Officers on verbal autopsy and Physician certified verbal autopsy at Udaipur Rajasthan, November 18-19, 2018.

Delivered lecture on “Epidemiological Measures” at ICMR-NIMS on December 6, 2018 during workshop on “Bio-statistical Methods in Medical Research” organized by ICMR-NIMS, New Delhi, December 4-7, 2018.

Trained Auxillary Nurse Midwife (ANMs) and Medical Officers on verbal autopsy and Physician certified verbal autopsy during the five-day training workshop at Nalanda and Gaya (Bihar), December 17-25, 2018.

Trained Senior residents on Physician certified verbal autopsy during the PCVA Training Workshop of the study entitled “Comparing Methods of Assigning Causes of Death”, for 11 Medical Officers, ICMR-NIMS, New Delhi, January 11, 2019.

Organised workshop at ICMR-NIMS on during workshop on “Statistical Methods in Health Data Analytics using R” from March 12-15, 2019 organized by ICMR-NIMS, New Delhi.

Scientific Meetings/Conferences/Training/Workshops

Title of the Meeting

Dr.M.Vishnu Vardhana Rao

Third Meeting of the Working Group on NSS 75th Round (July 2017-June 2018 under the Chairmanship of Prof. R.Radhakrishna, Chairman and Honorary Prof., CESS for finalising Tabulation Plan and Estimation Procedures of NSS 75th Round at Centre for Economics and Social Studies (CESS), Hyderabad, April 4, 2018.

Consultation (with stakeholders from the public and private research organizations, global health sector institutions and Govt. departments) on 'Clinical Trials' at G. Parthasarathi Conf. Hall, RIS, India Habitat Centre, Lodhi Road, New Delhi, April 7, 2018.

Technical Advisory Committee Meeting of the Project of MOHFW, GOI "Comparing Methods for Assigning Causes of Death" at Conference Hall, ICMR-NIMS, April 10, 2018.

ICMR Hqrs.-NIMS Workshop on Equity Considerations in Cost-Effectiveness Analysis at AIIMS, Ansari Nagar, New Delhi, April 12, 2018.

Meeting of the Project of MOHFW, GOI "Comparing Methods for Assigning Causes of Death by Verbal Autopsy" at ICMR-NIMS, April 12, 2018.

NIN- RDA Core Committee Meeting at ICMR Conference Hall. New Delhi, April 19, 2018.

Visited Hyderabad for attending the Meeting of ICMR-ICSSR project on Development, Validation and Dissemination of Comprehensive Healthy Eating and Living Index (CHELI) on data analysis at NIN Hyderabad. (Visit period from April 19-23, 2018), April 20, 2018.

Participated in the Birth Anniversary of Bharat Ratna Dr. B.R. Ambedkar in the ICMR Conference Hall, New Delhi. (The Occasion will be graced by Shri Ramdas Athwale, Hon'ble Minister of State for Social Justice and Empowerment, Govt. of India, New Delhi, April 25, 2018.

Release of WHO FCTC Global Knowledge Hub on Smokeless Tobacco book on "Global Smokeless Tobacco Control Policies and their Implementation" at ICMR-NICPR by Padam Shri Prof. Balram Bhargava, DG,ICMR & Secretary, DHR, MOHFW, April 25, 2018.

Meeting with the Director & CTRI Team with WHO personnel at ICMR-NIMS, April 26, 2018.

As an Expert Member for the Meeting on Health Account Scheme at ICMR, New Delhi, May 3, 2018.

First One Health Summit in India that will converge stakeholders across industry, policy and academia. CSFD is a joint initiative of Cornell University and Sathguru (<http://www.cornellsathgurufoundation.org>) in Hyatt Regency, New Delhi, May 4, 2018.

Attended Monitoring-cum-Expert Committee of ICMR Task Force Study titled "Evaluation of prevalence, regional phenotypic variation, co-modalities among Indian women with polycystic ovary syndrome (PCOS): A Multicenter study across India." at ICMR, May 12, 2018.

Meeting of Directors/Directors-in-Charge of ICMR at ICMR Hqrs. New Delhi, May 16-17, 2018.

5th meeting of the National Core Group on Elimination of Mother to Child Transmission (EMTCT) of National AIDS Control Organisation (NACO), MOHFW, Chanderlok Building, New Delhi at Hotel The Royal Plaza, 19 Ashoka Road, New Delhi, May 21, 2018.

Expert Group Meeting to consider projects under Medical Innovation Scheme at Committee Room, ICMR Hqrs. Office, New Delhi, May 22, 2018.

3rd Meeting of the Sub-Committee on IDD Surveys under National Iodine Deficiency Disorders Control Programme (NIDDCP) under the Chairmanship of Dr. G.S. Toteja, Sc.'G' & Head (Nutrition), ICMR Hqrs. & Director, ICMR-Desert Medicine Research Centre, at Tuberculosis Association of India Building (1st Floor), 3 Red Cross Road, Near Parliament House, New Delhi-110001, May 25, 2018.

Capacity Building Workshop on Programme Monitoring & Evaluation Under the National AIDS Control Programme at Centre of Excellence of HIV/AIDS, Maulana Azad Medical College (MAMC), New Delhi, June 4-8, 2018.

Director's Meeting at ICMR, New Delhi, June 16-18, 2018.

Meeting with the visit of Nepal Health Research Council (NHRC) officials to ICMR and DHR sponsored by WHO-SEARO, June 25-28, 2018.

To Chair the Interview Selection Panel for the post of Technical Assistant (Biostatistics) under the ICMR-ITRC funded Project in the Walk-in-Interviews at Div. Of ECD, ICMR, New Delhi, July 3, 2018.

Visited Hyderabad, as a Chairman for the Interview Committee for conducting Interview to the qualified candidates for recruitment of staff on temporary basis at National Animal Resource Facility for Bio-Medical Research (NARF), Hyderabad, July 10, 2018.

Ethics Committee Meeting of ICMR-NIMS, July 17, 2018.

Attended Workshop for review and planning for next round of Surveillance Activities of HSS 2018-19 at AIIMS, New Delhi, July 17-18, 2018.

A bid was uploaded on GeM Portal to purchase the MS Office and Window-10 for office use. ICMR Meeting to examine the technical specification of MS Office and Window-10 for official use at ICMR-NIMS Conference Hall, ICMR-NIMS, July 23, 2018.

Meeting to review the progress of the “Validation Study on Assigning causes of Death” under the Chairmanship of DG (Statistics), MOHFW in Committee Room No.406-AWing, Nirman Bhawan, New Delhi, July 25, 2018.

Meeting held under the Chairmanship of DG (Statistics) MoHFW and subsequent meetings under the Chairmanship of CD(Statistics) to review the progress of the Validation Study on Assigning Causes of Death” at Nirman Bhawan, New Delhi, July 25, 2018.

4th Training Advisory committee (TAC) held at CDSA, Translational Health Science & Technology Institute, Dept. Of Biotechnology, THSTI, DBT, GOI, Faridabad, July 25, 2018.

Attended “National Viral Hepatitis Control Program” launched by the Hon’ble Minister for HFW at Vigyan Bhawan, New Delhi, July 28, 2018.

The first meeting of the Project Management Committee of National Family Health Survey (NFHS-5) under the Chairmanship of AS & MD (NHM) and Co-Chairmanship of DG (Statistics) in Committee Room, Nirman Bhawan, New Delhi, July 31, 2018.

Research Methodology Workshop of Bio-medical Research for young and middle level faculty members/researchers working in the medical colleges and health research institutions in Conf. Hall, ICMR, New Delhi, August 6-8, 2018.

ICMR-WHO Nipah therapeutics protocol development meeting at Imperial Hotel, Janpath Lane, New Delhi, August 7-8, 2018.

First Meeting of the Working Group for district level PLHIV Estimation under NACP at ICMR-NIMS, August 14, 2018.

Visited Bengaluru to attend the Meeting of National Technical Working Group on NCD Survey of National NCD Monitoring Survey (NNMS) at NCDIR, Bengaluru to review and discuss the factsheet under preparation and final report preparation, August 16, 2018.

Visited Hyderabad for attending the project meeting entitled “Development, Validation and Dissemination of Comprehensive Healthy Eating and Living Index (CHELI) for Adolescents”, August 20, 2018.

Meeting under the chair of DG, ICMR at DG Office for Data sharing of India State Level Disease Burden Initiative (SLDBI) to decide who can take lead in different areas based on strength and facilities of the respective institutions/technical division at ICMR, August 21, 2018.

As a Member ICMR Expert Advisory Committee Meeting for Information Technology Facility Management at ICMR, August 27, 2018.

Meeting of the Screening Committee for finalization of screening of applications for the post of Addl.D.G./Scientist 'H' in ICMR Hqrs, August 29, 2018.

Annual Meeting of the Project Advisory Committee for the Task force study titled "Screening and Early Detection of Cervical Oral and Breast Cancer, A demonstration project in Tata Tea Garden, Dibrugarh, Assam. At AIIMS, Centre for Dental Education and Research, New Delhi, September 4, 2018.

WHO Verbal Autopsy Working Group and Technical Meeting on Mortality Analysis with Verbal Autopsy" during September 10-14, 2018 at Washington D.C., USA.

2nd Core Committee Meeting on "Establishing ICMR-Research Data Platform (IRDP)" at Room No.301 Conf. Hall, ICMR, September 28, 2018.

Celebration of 43rd Foundation Day of ICMR-NIMS at ICMR Conference Hall followed by a Special Talk on "Back to the Future with Bayes: Probabilities in a World of Uncertainties" by Prof.K.Srikant Reddy, President, PHFI, Gurugram, Haryana. Prof.Balram Bhargava, Secretary, DHR & DG, ICMR will preside over the function, October 4, 2018.

As a Panellist on Developing Efficiency in Clinical Trials in Global, Regional and National Settings – in 2nd World Conference on Access to medical Products-Achieving the SDGs 2030 with the collaboration of MOHFW &WHO at New Delhi, October 10, 2018.

Visited Bhopal to attend the 9th Foundation Day and got Guest of Honour in the 9th Foundation Day of ICMR-NIREH at ICMR-NIREH, Bhopal, October 11, 2018.

Brain Storming Meeting for Road Map on Pharmacogenomics and Personalized Therapy in India at ICMR Hqrs., New Delhi, October 16, 2018.

Project Review Meeting of BOD Project at ICMR-NIOP, New Delhi, October 30, 2018.

BIRAC Meeting- BT/ki-Data0353/06/18 - In-Person Presentation before 'ki 'Technical Advisory Group (TAG) of Grand Challenges India call on 'knowledge integration (ki) Data Challenges for Maternal and Child Health at BIRAC Office, First Floor, MTNL Building, CGO Complex, Lodhi Road-1100033, New Delhi, November 1, 2018.

Visited Bangalore for attending the 36th Annual Conference of Indian Society for Medical Statistics (ISMS) Conference at Bangalore (NIMHANS) and delivered an invited talk, November 1-3, 2018.

Attended the meeting of Setting up of an office in DHR for registration of ethics committees for biomedical and health research under the Chairmanship of Joint Secretary Shri V.K.Gauba- at DHR, Indian Red Cross Society" Building, 1, Red Cross Road, New Delhi. New Delhi, November 5, 2018.

Meeting of the Sub Group 1 of the Expert Committee Meeting on Enhancing Resource Investment in Health under the Chairmanship of Prof.Balram Bhargava, Secretary DHR &DG, ICMR at ICMR, November 6, 2018.

ICMR-Expert Group meeting to discuss researchable areas in traditional medicine in board room, first floor, ICMR headquarter, New Delhi, November 12, 2018.

The unveiling function of the ICMR branding guidelines at Conference Hall, Room No. 301, ICMR Headquarters. Secretary DHR & DG, ICMR will preside over the function, November 15, 2018.

As an Expert and stakeholder for meeting for endorsement of TruNATMtB and Rif test for their introduction and use in programmatic conditions at Conference Hall, ICMR, Ansari Nagar, New Delhi, November 16, 2018.

Scientific Advisory Committee Meeting (SAC) of ICMR-NIMS at ICMR-NIMS, November 29, 2018.

25th Scientific Advisory Group (SAG) Meeting of Div. Of ECD at ICMR Hqrs., New Delhi, December 1-2, 2018.

58th Meeting of Scientific Advisory Board (SAB) of ICMR at ICMR, December 4, 2018.

ECHO India Immersion Event- to provide you an opportunity to interact with our global ECHO community and learn about how the ECHO model works. At Surya Hotel, New Delhi, December 5-7, 2018.

Attended the Feedback meeting to assess the current systems and identify opportunities to improve the post-mortem system, namely areas impacting the quality of cause of death data at Quorum Hall, Lalit Hotel, near Barakhamba Police station, Connaught Place, New Delhi, December 12, 2018.

Visited Hyderabad to attend the International Conference including inaugural and valedictory event of completion of the Centenary celebration of the Institute at NIN Hyderabad, December 14-15, 2018.

Project meeting at ICMR-ICSSR funded project titled "Development, Validation and Dissemination of Comprehensive Healthy Eating and Living Index (CHELI) for Adolescents" at NIN, Hyderabad, December 17-18, 2018.

Chairman of the Second meeting to discuss modalities of cataloguing of DBS samples received under NFHS-4 held in Conference Hall, ICMR-NIMS, New Delhi, December 24, 2018.

Training on implementation of TSA at ICMR-NIMS Conference Hall, ICMR Headquarters, January 3, 2019.

Central Sector Schemes on establishment of Multi-Disciplinary Research Units and Model Rural Health Research Units – Review of performance. Venue of the meeting at DHR Office, I.R.C.S. Building, Red Cross Road, New Delhi & ICMR HQs, ICMR, January 8-9, 2019.

Attended the Meeting for review of performance of Multi-Disciplinary Research Units and Model Rural Health Research Units at DHR Office, I.R.C.S. Building, Red Cross Road, New Delhi, January 28-29, 2019.

Ist Meeting of the International Organizing Committee (IOC) for the 29th International Population Conference, Hyderabad 2021 at 'We the Peoples' Conference Room, UN House, Lodhi Estate, New Delhi, January 29, 2019.

ICMR Technical Group Meeting on National Virtual Centre for Clinical Pharmacology (NVCCP) under Chairmanship of Dr.V.P.Kamboj at ICMR Hqrs, February 1, 2019.

Attended meeting with the CDAC personnel to chalk out the plan of introducing the software in CTRI from SUGAM portal relating to ethical committees' registrations in biomedical research at DHR at 2nd Floor, IRCS Building, 1, Red Cross Road, New Delhi, February 7, 2019.

ICMR Meeting to examine the technical specification of MS Office and for purchasing of Software at ICMR, February 7, 2019.

Official Launch of IndiCleft Tool by ICMR in collaboration with Centre for Dentra Education & Research, AIIMS, New Delhi at Conf. Hall, ICMR, February 14, 2019.

"Invitation as a Faculty for a Refresher Program on Research Methodology" at PDUNIPPD, New Delhi for delivering a guest lecture on "Steps in Research Process" at Pt. Deendayal Upadhyaya National Institute for Persons with Physical Disabilities (Divyangjan), Deptt. of Empowerment of Persons with Disabilities (Divyangjan), Ministry of Social Justice & Empowerment, 4-Vishnu Digamber Marg, New Delhi-2, February 20, 2019.

Meeting regarding the Development of software for registration of ethics committees for biomedical and health research at MoHFW (DHR), IRCS Building, Red Cross Road, New Delhi, February 20, 2019.

Meeting under the Chairmanship of DGHS to review the progress of NHRR Census along with Quality Checks and Validation of Data Collected by the IQVIA Team in the Resource Centre, Nirman Bhawan, New Delhi, February 22, 2019.

Attended the Global Conference on Reproductive Health with Focus on Occupational, Environmental and Lifestyle Factors & 29th Annual Meeting of the Indian Society for the Study of Reproduction and Fertility organised by AIIMS & ISSRF at JNU convention Center, JNU, New Delhi, February 22, 2019.

National Science Day Celebrations by Department of Science & Technology, GOI, Padma Shri Prof. K. Vijay Raghavan, Principal Scientific Adviser, GOI will deliver the National Science Day Lecture & Prof. Ashutosh Sharma, Secretary, DST will preside Programme in Convention Centre, Auditorium – 1, Jawaharlal Nehru University, New Delhi, February 28, 2019.

Regional Meeting on HIV Estimation Software and data requirement training held at Bangkok, Thailand organised by UNAIDS, Lodhi Estate, New Delhi, March 4-6, 2019.

ICMR-NIMS Ethics Committee Meeting at Director's Room, ICMR-NIMS, March 7, 2019.

42nd Annual Day of NIHFWS at NIHFWS Lawns, Munirka, New Delhi, March 9, 2019.

National Technical working Group Meeting to review the Mission mode project proposal on "National Disease Burden Unit" at ICMR-NIMS, March 14, 2019.

National Workshop on IDD Survey Methodology under National Iodine Deficiency Disorders Control Programme (NIDDCP) at ICMR Hqrs. New Delhi, March 18-19, 2019.

ICMR Symposium on "Gandhi and Health@150" to commemorate the 150th birth Anniversary of Mahatma Gandhi at ICMR related to Health following Gandhian principles at ICMR HQrs., New Delhi, March 25-26, 2019.

Signing ceremony of the ICMR-AU MoU to formalize the India Africa synergistic partnership and ensure optimal utilization of resources towards the activities proposed under the health Science Platform, a MoU has been developed between the ICMR and African Union (AU) at ICMR HQrs. New Delhi, March 27, 2019.

Second Meeting of the National Working Group for District Level PLHIV estimation under NACP at ICMR-NIMS Conference Hall, New Delhi, March 29, 2019.

Dr.H.K.Chaturvedi

Attended the sixth meeting of Technical Expert Committee (TEC) for strengthening of Quality Control Testing of Immunodiagnostic Kit Laboratory held on at National Institute of Biologicals, NOIDA, April 4, 2018.

Invited as Senior Faculty and Course Director for three days Workshop on “Statistical Methods in Biomedical Research” organized jointly by ICMR-NIMS and NIOH at National Institute of Occupational Health (NIOH), Ahmadabad, April 4-6, 2018.

Attended one day workshop on Equity Considerations in Cost-Effectiveness Analysis on Convergence Block, All India Institute of Medical Sciences (AIIMS), New Delhi, April 12, 2018.

Invited as Expert member and presented the study on “Estimation of Malaria Burden in Punjab” in the Regional Review Meeting on Malaria and other Vector Borne Diseases, organized by NVBDCP and WHO in Chandigarh, June 6-7, 2018.

Attended 26th meeting of School Research Committee as Ph.D. Supervisor at GGSIP University, Sector-16c, Dwarka, New Delhi, June 29, 2018.

Attended National NCD Monitoring Survey Meeting of Principal Investigators of NCDIR (Bengaluru), AIIMS (New Delhi) and ICMR-NIMS (New Delhi) at the National Institute of Medical Statistics, New Delhi, July 11, 2018.

Selection Committee meeting for the post of Research Officer (Statistics) & SRF in the project “HIV Surveillance & Estimation”, July 24, 2018.

Attended Condemnation Board Meeting of ICMR at ICMR-NIMS, New Delhi, July 25, 2018.

Attended Ethics Committee Meeting of ICMR-National Institute of Medical Statistics, New Delhi at ICMR-NIMS, July 27, 2018.

Attended meeting for data analysis and finalization of disease burden project report at ICMR-NIMR field unit, Chandigarh, September 6-8, 2018.

Attended the workshop on “Infectious Disease Modelling” organized by ICMR-NIE at Chennai from November 13-15, 2018.

Attended 27th meeting of School Research Committee as Ph.D. Supervisor at GGSIP University, Sector-16c, Dwarka, New Delhi, January 28, 2019.

Seventh meeting of Technical Expert Committee (TEC) for strengthening of Quality Control Testing of Immunodiagnostic Kit Laboratory at National Institute of Biologicals, February 20, 2019.

Attended as special invitee the protocol review committee meeting of ICMR. Reviewed the project protocol “Clinical Trial on Prevention of Disability in Persons Affected with Leprosy through Homeopathy”, March 5, 2019.

Dr.Damodar Sahu

Participated in the first meeting of the core Evaluation Team for the Impact Evaluation of ART Programme under NACP [ART-IE India], April 3-4, 2018 organized by ICMR- NARI at NARI, Pune, April 4, 2018.

Participated in workshop on Introduction to Systematic Reviews for Prevalence and Incidence Studies at ICMR-NIMS Conference Room by Dr Denny John adjunct faculty ICMR-NIMS organized by ICMR-NIMS, New Delhi, April 20, 2018.

Participated confidential workshop on UGC NET organized by CBSE, at UGC-NET UNIT Central Board of Secondary Education, Third Floor, H-149,Sector-63, Noida, Uttar Pradesh, May 29, 2018.

Attended IV Prof. PP Talwar Oration Award delivered by Prof. V.K. Paul, Member (Health), NITIAayog at ICMR, Delhi organized by ICMR-NIMS, New Delhi, June 5, 2018.

Participated review meeting on the Impact Evaluation of ART-India study [IE-ART-India] at NACO, New Delhi, June 8, 2018.

Participate confidential workshop on UGC NET organized by CBSE, at UGC-NET UNIT Central Board of Secondary Education, Third Floor,H-149,Sector-63, Noida, U.P, June 11, 2018.

Participated meeting on DBS sample of NFHS-4 to ICMR-NIMR, New Delhi at ICMR-NIMS, New Delhi, June 12, 2018.

Attended ICMR-NIMS Institute's Ethics committee meeting and presented ARTIE project proposal for approval, July 17, 2018.

Participated in the Preparatory Meeting for the Next Round of Surveillance Activities at Dr.Ramalingaswami Board Room, AIIMS, New Delhi organized by NACO and Department of SPM, AIIMS, New Delhi, July 17-18, 2018.

Participated Zoom video conference call with partners of ARTIE projects with ICMR-NARI to review progress of the project, July 25, 2018.

Participated as one of the subject experts of the team constituted for revision of syllabus of Population Studies subject at NET Bureau, University Grand Commission, South Campus of University of Delhi, New Delhi, July 26-27, 2018. Participated in meeting on research group committee (RGS) to discuss research projects on dried blood spot (DBS) sample of NFHS-4, conference hall,

ICMR, New Delhi, September 4, 2018.

Delivered lecture in the training course on Data Analysis using Statistical Software for Health and Demographic research during Sept 10-14, 2018 at NIHFWD, New Delhi, September 12, 2018.

Attended releasing ceremony of HIV Estimation 2017 report at Hotel Lalit, New Delhi organized by NACO, September 14, 2018.

Participated Training of Trainers (ToT) for implementation of ART Impact Evaluation study at ICMR-NARI, Pune, October 23-25, 2018.

Attended meeting of Technical Resource group on HIV Surveillance and Estimation at Committee room, NACO Delhi, October 30, 2018.

Visited the ART Centre, Dr.Susheela Tiwari Memorial Hospital, Haldwani, Nanital, Uttarakhand to initiate and train local person as intern/others to be engaged for data extraction, December 6-7, 2018.

Attended 16th Annual conference of the Indian association for Social Sciences and Health (IASSH) in collaboration with CSRD, JNU at JNU, New Delhi, December 10-12, 2018.

Visited the ART Centre in Dr. RP Medical College, Tanda, Kangra, Himachal Pradesh to initiate and train local person to be engage for secondary data extraction, December 12-14, 2018.

Invited as expert member for consultation workshop on prepare compendium at NIT, Rourkela, Odisha, December 21-22, 2018.

Visited the ART Centre, PGIMS (Pandit Bhagawat Dayal Sharma Post Graduate Institute of Medical Sciences), Rotak, Haryana on dated 28-12-2018 for supervision and interact with ART centre official for primary data collection, December 28, 2018.

Visited ART Centre, Dr. RP Medical College, Tanda, Kangra, HP to initiate primary data collection and supervision of secondary data extraction in connection with ARTIE project, January 7-9, 2019.

Attend as a supervisor for Ph.D student in the SRC meeting at GGSIP university, Dwarka, New Delhi, January 28, 2019.

Visited Jammu as a central team member of HIV Surveillance for Supervision and Monitoring of the Sentinel sites ongoing 16th round of HSS ANC in the state of Jammu and Kashmir supported by the National Institute of Surveillance, AIIMS, Delhi, January 29-31, 2019.

Invited as a resource person for the confidential workshop for paper setting for UGC at National Testing Agency, Sector 62 Noida, February 20-22, 2019.

Attend experience sharing meeting on learning of training workshop on New version of Spectrum at NACO, organized by NACO, New Delhi, March 29, 2019.

Dr. Tulsi Adhikari

Meeting with Prof Ramesh Aggarwal regarding the designing of Results Disclosure of Clinical Trials, April 9, 2018.

NIH-ICMR Workshop on Clinical Research, Sheraton Hyderabad, April 16-21, 2018.

Workshop on systematic review in prevalence & incidence studies, ICMR-NIMS, New Delhi, April 20, 2018.

Seminar on "Recent Developments in Food Science and Technology for Better Nutrition" organized by ILSI-India, at Hotel Le Meridien New Delhi, April 27, 2018.

"Health Accounting Scheme- Empowering people for health care through Multi-Sector Coordination - An Operational evaluation" as the expert member for meeting at Room no 301, ICMR conference room, ICMR Hqrs, May 3, 2018.

Meeting with DG ICMR to apprise about the activities in CTRI, May 27, 2018.
Meeting with DG ICMR, Director THSTI and CTRI team regarding CTRI, July 9, 2018.

Attended lecture by Dr. Jugal Kishore Prof of Community Medicine on happiness and mental health during Hindi Divas organized at ICMR-NIMS, September 27, 2018.

ICMR-NIMS Foundation Day Oration by Prof.K.Srinath Reddy, President, Public Health Foundation of India, New Delhi on "Back to the future with Bayes: Probabilities in a world of uncertainties"; ICMR Hqrs., New Delhi, October 4, 2018.

Meeting with Principal Secretary Tribal Affairs Govt. Of MP regarding the project on Saharia Tribes at Bhopal, October 9, 2018.

Meeting with JS DHR regarding the issues on Ethical Committee registration, November 5, 2018.

Participated in the Health Technology Acceleration and commercialization workshop in Goa, November 11-16, 2018.

Meeting with JS DHR and CDEC team regarding the development of software for

the Registration of Ethics Committee for Non-Regulatory Trials, February 7, 2019.

Symposium on Gandhi and Health@150 at ICMR New Delhi, March 24-25, 2019.

Dr. Atul Juneja

Meeting with Prof Ramesh Aggarwal regarding the designing of Results Disclosure of Clinical Trials, April 9, 2018.

TAC Meeting of COD Project, April 10, 2018.

Presentation of Clinical Trial Registration to WHO group led by Dr. GB Nair, April 26, 2018.

Attended Directors Meeting along with the Director ICMR-NIMS, May 16, 2018.

Meeting with DG ICMR to apprise about the activities in CTRI, May 27, 2018.

DNB Committee Meeting of BL Kapoor Memorial Hospital New Delhi, June 18, 2018.

Presentation of CTRI to NHRC team from Nepal during their visit to ICMR-NIMS, June 26, 2018.

Meeting with DG and Director THSTI regarding the future course of action for CTRI at ICMR New Delhi, July 9, 2018.

Internal Scrutiny Committee Meeting of CCRAS as a member at CCRAS New Delhi, July 30, 2018.

Attended the meeting of CPCB New Delhi as the nominated member for a case referred by Hon NGT on remediation of Mercury at Kodiakanal, August 27, 2018.

Attended the meeting of CPCB New Delhi as the nominated member for a case referred by Hon NGT on remediation of Mercury at Kodiakanal, September 12-24, 2018.

DNB Committee Meeting of BL Kapoor Memorial Hospital New Delhi, August 8, 2018.

DNB Committee Meeting of Jaipur Golden Hospital New Delhi, August 22, 2018.

Held meeting with Deputy Commissioner Tribal Affairs Govt. of MP at Gwalior in connection with the planning of workshop for the dissemination of results of study of Saharia Tribes taken by ICMR-NIMS, September 20, 2018.

Attended lecture by Dr. Jugal Kishore Prof of Community Medicine on happiness

and mental health during Hindi Divas organised at ICMR-NIMS, September 27, 2018.

Awarded first prize for debate competition (Street Food right or Wrong) held on Hindi Divas celebration at ICMR-NIMS, September 27, 2018.

Meeting with Principal Secretary Tribal Affairs Govt. Of MP regarding the project on Saharia Tribes at Bhopal, October 9, 2018.

Presented the paper on CTRI findings and chaired a session at 36 Annual Conference of ISMS held at NIMHANS Bengaluru, November 1-3, 2018.

Meeting with JS DHR regarding the issues on Ethical Committee registration, November 5, 2018.

Presented a project proposal on Leveraging Traditional Medicine before expert Committee at ICMR, November 12, 2018.

Meeting with Dr.Pradhan at DCGI office regarding Ethics Committee Registration by DHR for Non Regulatory studies, November 14, 2018.

Meeting with DDG CCRAS regarding the formulation of the project on Traditional Medicine as a collaborative study at CCRAS, December 12, 2018.

Ethics Committee Meeting of Jaipur Golden Hospital New Delhi, December 18-29, 2018: January 5-8, 2019.

DNB Research Committee Meeting at BL Kapoor Memorial Hospital New Delhi, January 10, 2019.

Delivered invited talk on CTRI –ICD10 Complaint at 21st Annual Conference of Statistics and Computer Application at SV Agricultural University Tirupati, January 29-31, 2019.

Meeting on Analysis issues for the study on Dental Implant at Maulana Azad Institute of Dental Sciences New Delhi, February 6, 2019.

Meeting with JS DHR and CDEC team regarding the development of software for the Registration of Ethics Committee for Non-Regulatory Trials, February 7, 2019.

Meeting with DG CCRH in connection with the recruitment for the post of Statistical Assistant at CCRH New Delhi, March 18, 2019.

Presentation of results of the RCH project on Saharia Tribes to the Department of Health Govt. of MP Bhopal. The meeting was presided by Chief Secretary Govt. of MP, March 23, 2019.

Dr. Geetha R. Menon

Co-organised a workshop on Equity Considerations in Cost-Effectiveness Analysis held at All India Institute of Medical Sciences (AIIMS), New Delhi, April 12, 2018.

Meeting to discuss the protocol on 'National Registry for Traumatic Injury-a pilot study' under the Chairmanship of Dr. A.K. Gadpayle, Nirman Bhawan New Delhi, April 18, 2018.

National Technical Working Group meeting for the project on Burden of Non-Communicable Diseases and associated risk factors, May 10, 2018.

Meeting in Nirman Bhawan with JS Dr. Gayathri Mishra on Trauma registry, June 13, 2018.

ICMR-CGHR meeting on Air pollution and mortality in India at ICMR, New Delhi, September 18, 2018.

National Consultation on air pollution and health during at Hotel Le Meridien, New Delhi, October 3-5, 2018.

Technical Advisory Committee meeting for the project on National Burden of disease and associated risk factors – Methodology group, October 30, 2018.

Participated in the Health Technology Acceleration and commercialization workshop in Goa, November 11-16, 2018.

Scientific Advisory Committee meeting on ICMR-NIMS, November 29, 2018.

Review meeting for discussion on the progress and finalization of the draft report and paper on Air pollution and CRDs mortality estimates (PM 2.5) at ICMR, New Delhi, December 13, 2018.

Technical Advisory Committee meeting at NIHFW, January 11, 2019.

Meeting with RGI to discuss collaborative studies on the cause of death, February 14, 2019.

National Technical Working Group meeting for the project on Burden of Non-Communicable Diseases and associated risk factors, March 14, 2019.

Symposium on Gandhi and Health@150 at ICMR New Delhi, March 24-25, 2019.

Dr.Saritha Nair

Attended core evaluation team meeting of ART project at ICMR-NARI, Pune, April 3-4, 2018.

Attended the crisis management Workshop at ICMR-NIOH Ahmedabad, organized by the ICMR and Global Health Strategies, New Delhi, April 26-27, 2018.

Briefing meeting of ART IE project at NACO, New Delhi, June 8, 2018.

Attended the P.P. Talwar oration on "Health Research in the Ayushman Bharat Era" by Prof. Vinod K. Paul, June 14, 2018.

Attended the review meeting of the project "Validating methods assigning Causes of Death" at the department of Statistics, MoHFW, July 25, 2018.

Attended the first national working group meeting of District level HIV estimates, ICMR-NIMS, August 14, 2018.

Attended the research group committee meeting on setting research agenda for use of DBS data from NFHS-4 at ICMR, September 4, 2018.

Attended the core group committee meeting on NFHS-4 at ICMR, September 11, 2018

Attended the Institute Foundation Day lecture by Prof K Srinath Reddy on 'Back to the future with Bayes: Probabilities in a world of uncertainties, October 4, 2018.

Attended the Training of Trainers meeting for implementation of ART Impact Evaluation study at ICMR-NARI, Pune, October 23-25, 2018.

Attended the meeting on Cataloguing of NFHS-4 dried blood spot by using software developed by M/s Keystack Pvt Lt organized by ICMR- National Institute of Malaria Research at ICMR-NIMS, December 24, 2018.

Attended the Legal Review Meeting of MCCD deaths at Lalit Hotel, New Delhi organized by CDC and BMC Mumbai, December 12, 2018.

Dr.B.K.Gulati

Workshop on Equity consideration and cost-effectiveness analysis, AIIMS, New Delhi, April 12, 2018.

Post Technical Advisory Committee meeting of the study entitled "Comparing Methods of Assigning Causes of Death", ICMR-NIMS, New Delhi, April 12, 2018.

Training workshop on GIS, ICMR-NIMS, New Delhi, April 19, 2018.

Workshop on systematic review in prevalence & incidence studies, ICMR-NIMS, New Delhi, April 20, 2018.

Training workshop on R, ICMR-NIMS, New Delhi, May 18, 2018.

Training workshop on R, ICMR-NIMS, New Delhi, May 31, 2018.

Visited CHC, Nuh, Mewat along with COD team and had a discussion with Senior Medical Officer and other officials of the CHC regarding initiation of COD survey, Nuh, June 5, 2018.

4th Prof.P.P.Talwar Oration by Prof.Vinod K.Paul, Member National Institution for Transforming India, NITI Aayog, on “Health Research in Ayushman Bharat Era”, ICMR Hqrs., New Delhi, June 6, 2018.

National Statistics Day, ICMR-NIMS, New Delhi, June 29, 2018.

Workshop on Electronic Platform for Training and Learning (Eprtal), ICMR-NIMS, New Delhi, August 28, 2018.

Three Days Capacity Training Programme on Statistical Data Analysis Using SPSS, ICMR-NIMS, New Delhi, September 4-6, 2018.

Hindi Diwas lecture by Dr.Jugal Kishore on Depression (Avsard), ICMR-NIMS, New Delhi, September 27, 2018.

Visited CHC, Nuh, Mewat along with COD team in connection with COD survey, Nuh, October 8, 2018.

Workshop on Mathematical Modelling of Infectious Diseases, ICMR-National Institute of Epidemiology, Chennai, November 12-15, 2018.

Meeting of the Scientific Advisory Committee, ICMR-NIMS, New Delhi, November 29, 2018.

PCVA Training Workshop of the study entitled “Comparing Methods of Assigning Causes of Death”, for 11 Medical Officers, ICMR-NIMS, New Delhi, January 11, 2019.

Meeting to disseminate the findings of the study entitled “Improvement in the Utilization of RCH Services through Male Participation among the Saharia Tribes in Gwalior District, Madhya Pradesh”, RCVN Naronha Academy of Administration, Bhopal, March 23, 2019.

Symposium on Gandhi & Health @ 150 ICMR-NGM Joint Initiative, ICMR Hqrs., New Delhi, March 25-26, 2019.

Dr.Kh.Jitenkumar Singh

Health Economics Evaluation by Denny John at ICMR-NIMS, April 12, 2018.

Training workshop on GIS, ICMR-NIMS, New Delhi, April 19, 2018.

Attended workshop on “Explaining how to do a meta-analysis of prevalence studies”, ICMR-NIMS, April 20, 2018.

Hands-on session on Logistic regression and Survival data analysis using R during the Workshop on Statistical Modelling using Health Data organized by Department of Biostatistics, Swami Rama Himalayan University, Dehradun, May 10-11, 2018.

Hands-on session on Graphic with ggplot2 using R to all technical staff of ICMR-NIMS, New Delhi, May 19, 2018.

Hands-on session on introduction to GIS using Quantum GIS to all technical staff of ICMR-NIMS, New Delhi, May 31, 2018.

4th Prof.P.P.Talwar Oration by Prof.Vinod K.Paul, Member National Institution for Transforming India, NITIAayog, on “Health Research in Ayushman Bharat Era”, ICMR Hqrs., New Delhi, June 6, 2018.

National Statistics Day, ICMR-NIMS, New Delhi, June 29, 2018.

Attended TOT for UNICEF Coverage Evaluation Survey (CES) organized by NIHFWS, Munirka, New Delhi, August 6-7, 2018.

Attended the first national working group meeting of District level HIV estimates, ICMR-NIMS, August 14, 2018.

Coordinate Workshop on 3 Days Capacity Training Programme on Statistical Data Analysis using SPSS at ICMR-NIMS, New Delhi, September 4-6, 2018.

Hindi Diwas lecture by Dr.Jugal Kishore on mental health, ICMR-NIMS, New Delhi, September 27, 2018.

Attended the Institute Foundation Day lecture by Prof K Srinath Reddy on ‘Back to the future with Bayes: Probabilities in a world of uncertainties, October 4, 2018.

Delivered Hands-on session on Statistical data analysis using R during Training Programme on Capacity Building in Survey Research Methodology organized jointly by ICMR-NIMS and IASDS, Lucknow at ICMR-NIMS, New Delhi, October 8-10, 2018.

Scientific Advisory Committee meeting, ICMR-NIMS, November 29, 2018.

Delivered Hands-on session on Statistical data analysis using R during workshop on 'Bio-statistical Methods in Medical Research' organized by ICMR-NIMS, December 6-7, 2018.

Attended India-UK Networking Partnership Workshop on "Meeting the Challenges of TB Research Priorities in India", during February 11-12, 2019 at ICMR, New Delhi. The meeting was jointly organized by ICMR-National Institute for Research in Tuberculosis (NIRT), Chennai and University College London, UK. (Nominated by the Director, ICMR-NIMS to attend the workshop), February 11-12, 2019.

Symposium on Gandhi and Health@150 at ICMR New Delhi, March 24-25, 2019.

Dr. Lucky Singh

Technical Advisory Committee (TAC) Meeting of the study entitled "Comparing Methods of Assigning Causes of Death", was held on April 10, 2018 at ICMR-NIMS, New Delhi, April 10, 2018.

Attended workshop on "Equity Considerations in Cost-Effectiveness Analysis" on 12th April 2018 at Convergence Block, All India Institute of Medical Sciences (AIIMS), New Delhi. This workshop was jointly organized by Research Methodology Unit, ICMR and ICMR-NIMS, April 12, 2018.

Attended workshop on "Explaining how to do a meta-analysis of prevalence studies" at ICMR-NIMS on 20th April 2018. This workshop was organized by ICMR-NIMS, New Delhi, April 20, 2018.

Meeting of National Technical Working Group (NTWG) for the project entitled "Burden of Non- Communicable Diseases and associated Risk Factors for India (BOD-NCD)" held on May 10, 2018 at ICMR, New Delhi, May 10, 2018.

Attended Non-communicable Diseases webinar on July 17, 2018 to share their results, some key accomplishments, learnings and insights from the work undertaken in expanding access to care and treatment for hypertension and diabetes in Shimla and Udaipur organized by Health Rise funded by Medtronic Foundation, implemented by Abt Associates, July 17, 2018.

Project Advisory Committee Meeting on ICMR Task Force study on "Screening and early detection of cervical, breast and oral cancer in Dibrugarh, Assam: a demonstration project in TATA Tea gardens" at ICMR, New Delhi, September 4, 2018.

Attended meeting of ICMR Task Force study on "Capacity building through HRRCs and teaching institutes to operationalize government guidelines for screening of common cancers (oral, breast and cervical) on September 27, 2018

at ICMR, New Delhi.

Attended India-UK Networking Partnership Workshop on “Meeting the Challenges of TB Research Priorities in India”, during February 11-12, 2019 at ICMR, New Delhi. The meeting was jointly organized by ICMR-National Institute for Research in Tuberculosis (NIRT), Chennai and University College London, UK. (Nominated by the Director, ICMR-NIMS to attend the workshop).

Attended Symposium on “Gandhi and Health@150” to commemorate the 150th birth Anniversary of Mahatma Gandhi on March 25-26, 2019 at ICMR, March 25-26, 2019.

Dr.Saurabh Sharma

Technical Advisory Committee (TAC) Meeting of the study entitled “Comparing Methods of Assigning Causes of Death”, ICMR-NIMS, New Delhi, April 10, 2018.

Attended the review meeting of the project “Validating methods assigning Causes of Death” at the Department of Statistics, MoHFW, July 25, 2018.

Attended Symposium on “Gandhi and Health@150” to commemorate the 150th birth Anniversary of Mahatma Gandhi on March 25-26, 2019, ICMR Hqrs., March 25-26, 2019.

Dr.Jeetendra Yadav

Workshop on “Equity Considerations in Cost-Effectiveness Analysis”, Convergence Block, All India Institute of Medical Sciences (AIIMS), New Delhi, April 10, 2018.

Workshop on “Explaining how to do a meta-analysis of prevalence studies”, ICMR-NIMS, April 20, 2018.

Meeting of National Technical Working Group (NTWG) for the project entitled “Burden of Non- Communicable Diseases and associated Risk Factors for India (BOD-NCD)”, ICMR, New Delhi, May 10, 2018.

Meeting in Nirmal Bhavan with JS Dr. Gayathri Mishra on Trauma registry, June 13, 2018.

Technical Advisory Committee meeting for the project on National Burden of disease and associated risk factors – Methodology group, October 30, 2018.

Training on “Introduction to Economic Evaluation in Health Technology Assessment (HTA)-Training course 2” on Decision analytic modelling for economic evaluations in HTA at DHR Delhi, October 29-November 3, 2018.

National Technical Working Group meeting for the project on Burden of Non-

Communicable Diseases and associated risk factors, March 14, 2019.

Workshop entitled “Introduction to R and Spatial Data Analysis”, International Institute of Population Sciences, Mumbai, August 20-25, 2019.

Paper Presentation in Conferences

September 18-20, 2018	Dr.B.K.Gulati presented a paper entitled “Understanding the transition of certain infectious and parasitic diseases in urban population of India” at the 39 th Annual Conference of the Indian Association for the Study of Population (IASP), Banaras Hindu University, Varanasi (U.P.)
September, 18-20 2018.	Dr.Jeetendra Yadav presented a paper entitled “Out of pocket expenditure on tuberculosis in India: Do households face hardship financing: at the “Thirty Ninth Annual Conference of IASP, Banaras Hindu University, Varanasi.
December, 10-12, 2018.	Dr.Jeetendra Yadav presented a paper entitled “Infant Breastfeeding Practices and Its Associated Factors in Low and High Infant Mortality Rates in States of India: Evidence based on a recent cross-sectional survey at the “IASSH 16th Annual Conference, Jawaharlal Nehru University (JNU), New Delhi

Academic Activities

Dr.H.K.Chaturvedi

June 23, 2018 Presentation of the Ph.D work of Ms Poornima Suryanath Singh on “Geospatial mapping of Dengue cases in Delhi to study clustering and the socio-demographic and environmental correlates” to School Research Committee of IP University

Dr.Damodar Sahu

January 26, 2019 Presentation of Progress Report of Mr.Sanjeev Kumar, Ph.D. Scholar, 2015 batch in twenty-third meeting of school research committee (SRC) at GGS IP University, Dwarka, New Delhi

Presentation of Synopsis of proposed Ph.D work by Mr. Sarvesh in twenty-third meeting of school research committee (SRC) of university school of medicine and para-medical health sciences, at GGS IP University, New Delhi

January 28, 2019 Presentation of the Ph.D work of Ms Poornima Suryanath Singh on “Geospatial mapping of Dengue cases in Delhi to study clustering and the socio-demographic and environmental correlates”

March 19, 2019 Conducted Ph.D. viva voce of Ms Priyanka Namdevrao Yadav at CSRD, School of Social Science, JNU, New Delhi

December, 2018 to March, 2019 A total of 100 proposals (each scientist) of Short-Term Studentship online proposals, STS-2019 were reviewed (Dr.Ajit Mukherji, Dr.Tulsi Adhikari, Dr.Atul Juneja, Dr.Geetha Menon, Dr.Kh.Jitenkumar Singh, Dr.B.K.Gulati, Dr.Lucky Singh, Dr.Saurabh Sharma)

Dr.Lucky Singh

December 7-9, 2018 Resource Person for “Multi-Level Modelling (Using STATA)” during Pre-Conference Workshop on “Advanced Methods in Large-scale Data Analysis” in the 16th Annual Conference of Indian Association for Social Sciences and Health (IASSH) in collaboration with Centre for the Study of Regional Development, Jawaharlal Nehru University (JNU), New Delhi.

December 10-12,
2018

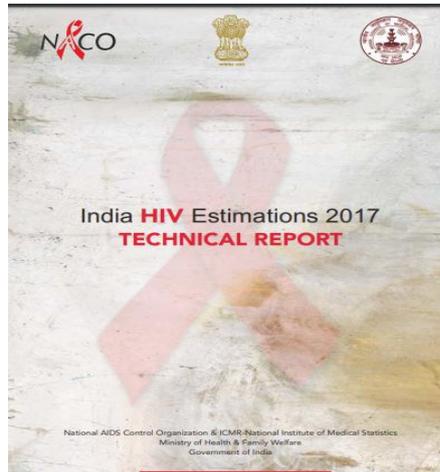
Co-Chaired Technical Session: “Morbidity and Mortality” on 11th December 2018 in the 16th Annual Conference of Indian Association for Social Sciences and Health (IASSH) in collaboration with Centre for the Study of Regional Development, Jawaharlal Nehru University (JNU), New Delhi.

Statistical Consultancy

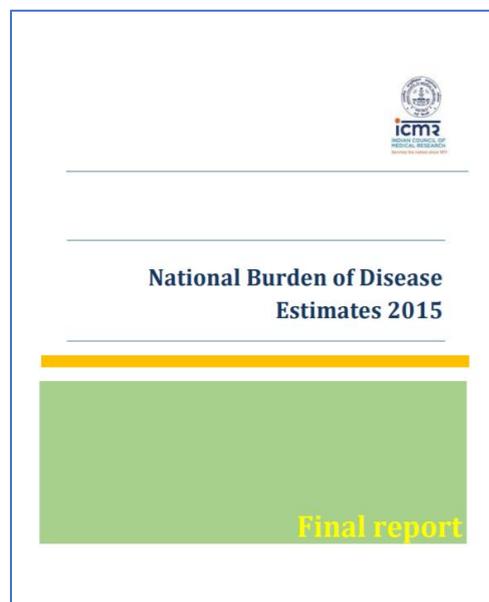
Name of the Scientist	Name of the Institute to whom consultancy was provided
Dr.Tulsi Adhikari	Provided statistical consultancy to ICMR HQ studies faculty, students of AIIMS, Safdarjung Hospital, Institute of Home Economics, Delhi University, Lady Hardinge Medical College.
Dr.Atul Juneja	<p>Member of DNB committee of BL Kapoor Memorial Hospital New Delhi. Reviewed the research proposals of 35 DNB students.</p> <p>Member of DNB Committee of Jaipur Golden Hospital New Delhi. Reviewed the research proposals of 25 students from statistical point of view.</p> <p>Advised Central Council for Research in Ayurvedic Sciences and Central Council for Research in Homoeopathy in their research projects from statistical point of view.</p> <p>Nominated member from ICMR for expert panel of Central Pollution Control Board constituted on the directions of Hon National Green Tribunal for an expert opinion on site specific target levels for remediation of mercury contaminated soil at Kodaikanal, Tamil Nadu.</p> <p>Member of Internal Scrutiny Committee of CCRAS, Ministry of AYUSH, New Delhi</p>

Published Reports

1. India HIV Estimates 2017 - Technical report (2018)



2. National Burden of Diseases 2015: National and State level factsheets. ICMR technical report submitted to the Ministry of Health and Family Welfare.



Publications

1. **Vardhana Rao** MV, Maulik M, Gupta J, Panchal Y, **Juneja A**, **Adhikari T**, Pandey A. Clinical Trials Registry – India: An overview and new developments. *Indian J Pharmacol* 2018; 50:208-11.
2. Munikumar M., Divya T., Rao M.V.V., 2018. Identification of novel modulators against TLR4-MD-2 complex: in silico approach. *The Journal for Endocrinology and Metabolism. Photon* 107 (2018) 222-236
3. **Juneja A**, **Adhikari T**. Clinical trials waiver in India-some considerations. *Indian J Pharmacol*2018;50:97DOI: 10.4103/ijp.IJP_540_17
4. Bhutia E., Kumar D., Kundal M., Kishore S., **Juneja A**. Atypical Articular Presentations in Indian Children With Rheumatic Fever. 2018 *Heart Lung and Circulation*; 27 (2): 199-204.
5. Singh, Ruchi; Suri, Jagdish C; Sharma, Renuka; Suri, Tejas; **Adhikari, Tulsi**; Sleep Pattern of Adolescents in a School in Delhi, India: Impact on their Mood and Academic Performance. *The Indian Journal of Pediatrics*. 2018. 85(10). Pp 841-8.
6. Jangpangi, Dev Singh; Singh, Anubhuti; Rawat, Jagdish; **Adhikari, Tulsi**;A Comparison Of Clinical Profile And Prevalence Of Comorbidities Among Biomass And Tobacco smoke-induced COPD Patients At A Tertiary Care Centre In North India. *Hypertension*. 2018. 15(3.47)
7. Suri, Jyotsna; Suri, Jagdish Chander; Arora, Renu; Gupta, Megha; **Adhikari, Tulsi**; The Impact of Sleep-Disordered Breathing on Severity of Pregnancy-Induced Hypertension and Feto-Maternal Outcomes. *The Journal of Obstetrics and Gynecology of India*. 2018. Pp.1-11.
8. Malik, Richa; Puri, Seema; **Adhikari, Tulsi**; Double burden of malnutrition among mother-child DYADS in urban poor settings in India. *Indian Journal of Community Health*. 2018. 30(2), pp. 139-144.
9. Amit Agrawal, AmeySavardekar, Mitasha Singh, Ranabir Pal, Dhaval P Shukla, Andres M Rubiano, Virendra D Sinha, **Geetha R Menon**, Sagar Galwankar, Luis Rafael Moscote-Salazar, Prashant Bhandarkar, Ashok Munivenkatappa, Ugan Meena, Amit Chakrabarty. Pattern of reporting and practices for the management of traumatic brain injury: An overview of published literature from India. *Neurol India*. 2018 Jul-Aug;66(4):976-1002. doi: 10.4103/0028-3886.237027.
10. A Baluja, A Ghosh, R Pal, **GR Menon**, S Bhoi, SC Galwankar, A Singh et al. Occupational profile of taxi drivers from three metropolitan cities in India. *International Journal of Academic Medicine* 2018 4 (2), 119-123.
11. P Bhati, JAMoiz, **GR Menon**, ME Hussain. Modulation of cardiac autonomic control by resistance training in human participants. *Clin Auton Res* (2019) 29: 121. <https://doi.org/10.1007/s10286-018-0574-3>
12. P Bhati, JA Moiz, **GR Menon**, ME Hussain. Does resistance training modulate cardiac autonomic control? A systematic review and meta-analysis. *Clin Auton Res*. 2019 Feb;29(1):75-103. doi: 10.1007/s10286-018-0558-3. Epub 2018 Aug 23.
13. SA Fadel, C BBoschi-Pinto, S YU, LM Reynales-Shigematsu, **Geetha R Menon**, Leslie Newcombe, Kathleen L Strong, Qiqi Wang, Prabhat Jha Trends in cause-specific mortality among children aged 5-14 years from 2005 to 2016 in India, China, Brazil and

- Mexico: an analysis of nationally representative mortality studies Lancet. 2019 Mar 16;393(10176):1119-1127. doi: 10.1016/S0140-6736(19)30220-X. Epub 2019 Mar 12.
14. Benjamin KC Wong, Shaza A Fadel, Shally Awasthi, Ajay Khera, Rajesh Kumar, **Geetha Menon**, Prabhat Jha The impact of measles immunization campaigns in India using a nationally representative sample of 27000 child deaths. *Elife*. 2019 Mar 5;8. pii: e43290. doi: 10.7554/eLife.43290.
 15. **Gulati BK**. Understanding the structural changes in causes of death and age pattern of mortality in urban population of Tamil Nadu. *IER Journal of Health and Demography* October 2018, Vol. 4, No. 1; 1-14.
 16. Shakya HB, Dasgupta A, Ghule M, Battala M, Saggurti N, Donta B, **Nair S**, Silverman J, Raj A. Spousal discordance on reports of contraceptive communication, contraceptive use, and ideal family size in rural India: a cross-sectional study. *BMC women's health*. 2018 Dec;18(1): 147.IF:1.80
 17. Dasgupta A, Saggurti N, Ghule M, Reed E, Donta B, Battala M, **Nair S**, Ritter J, Gajanan V, Silverman J, Raj A. Associations between intimate partner violence and married women's condom and other contraceptive use in rural India. *Sexual health*. 2018 Jul 26. IF:1.246
 18. Dasgupta A, Raj A, **Nair S**, Naik D, Saggurti N, Donta B, Silverman JG. Assessing the relationship between intimate partner violence, externally-decided pregnancy and unintended pregnancies among women in slum communities in Mumbai, India. *BMJ Sex Reprod Health*. 2018 Jun 18:jfprhc-2017. IF:2.02
 19. Schensul JJ, Begum S, **Nair S**, Oncken C. Challenges in Indian Women's Readiness to Quit Smokeless Tobacco Use. *Asian Pacific journal of cancer prevention: APJCP*. 2018;19(6):1561. IF:1.5.
 20. Dasgupta A, Silverman J, Saggurti N, Ghule M, Donta B, Battala M, **Nair S**, Gajanan V, Raj A. Understanding Men's Elevated Alcohol Use, Gender Equity Ideologies, and Intimate Partner Violence Among Married Couples in Rural India. *American journal of men's health*. 2018 May;1557988318775844. IF:1.234
 21. **Kh. Jitenkumar Singh, Sunita Sharma, Subhash Gautam and Jeetendra Yadav** (2019). Childhood mortality among scheduled tribes and scheduled castes in northeast states, India: Evidence from national family health survey – 4 (2015-16), *International Journal of Current Research*, Vol. 11, Issue, 01, pp.804-809, January 2019.
 22. **Kh. Jitenkumar Singh** (2019). Prevalence of Exclusive Breastfeeding Practices and Associated Factors among Mothers in North Eastern Region, India: A Cross-sectional Study. *Health and Healthcare in Indian Subcontinent Special Focus on North East India*. Eds. by Utpal Kumar De and Premanada Bharati. Concept Publishing Company Pvt. Ltd, New Delhi. Page no. 282-306.
 23. **Jeetendra Yadav**, ShaziyaAllarakha. Differentials in Health Care Seeking Behaviour and Health Care Expenditure among Diabetes Mellitus Patients in India, *Demography India* ISSN: 0970-454X Special Issue (2018), pp: 81-90.
 24. **Singh, L.**, Goel, R., Rai, R. K., & Singh, P. K. (2019). Socioeconomic inequality in functional deficiencies and chronic diseases among older Indian adults: a sex-stratified cross-sectional decomposition analysis. *BMJ Open*, 9(2), e022787.
 25. Singh, P.K., Rai, R.K., Singh, S., & **Singh, L.** (2018). Rising caesarean births in India: a growing concern. *Economic & Political Weekly*, 53(26-27): 22-24.
 26. Sanjeev Singh, **Damodar Sahu**, Ashish Agrawal, Meeta Dhaval Vashi, (2018) Ensuring Childhood vaccination among slums dwellers under the National Immunization Program

- in India- Challenges and opportunities. Preventive Medicine; doi:10.1016/j.ymed.2018.04.002; www.elsevier.com/locate/ypmed; IF: 3.483.
27. Gunjika Misra, **Damodar Sahu**, Umenthala S. Reddy and Saritha Nair (2018) Correlates of HIV prevalence among female sex workers in four north and east Indian States: finding of a national bio-behavioural survey, International Journal of STD & AIDS, 0(0), 1-11. IF: 1.494.
 28. Sanjeev Singh, **Damodar Sahu**, Ashish Agarwal Meeta Dhaval Vashi, (2019) Barriers and opportunities for improving childhood immunization coverage in slums: A qualitative study, Preventive Medicine Reports 14 (2019) 100858. SRJ IF 0.906.
 29. Anita Pal, **Jeetendra Yadav**, Sunita, **Kh. Jitenkumar Singh** (2018). Factors associated with unmet need for family planning in Bihar, India: a spatial and multilevel analysis. International Journal of Reproduction, Contraception, Obstetrics and Gynecology Pal A et al. *Int J Reprod Contracept Obstet Gynecol*. 2018 Sep;7(9):3638-3645.
 30. Dr. Neeta Kumar, Dr. Neeru Gupta, **Dr Tulsi Adhikari**, Dr Nidhi Tiwari, Dr K. K Ganguly, Dr Charu Kohli, **Dr JitenKh**, Dr. Peter Nabam (2018). Digital Diary Tool Under Health Account Assessment For Community Participation And Action: An Implementation Experience From Rural, Urban And Tribal Field Sites In India. International Journal of Health Systems and Implementation Research-2018, Vol. 2(2).
 31. Madhusudan JV, **JeetendraYadav**, **Kh. Jitenkumar Singh** & Utpal Dhar Das (2018). Prevalence and Determinants of Anemia among School going Children in Meghalaya. Demography India (2018), Vol. 47, Issue: 1, pp: 38-46.

Contribution in Books

Bavaskar Y, Gohel M, Srivastava A, **Sharma S**, Yatnatti SK. Physical Activity, Exercise, and Health. IAPSM Textbook of Community Medicine. Published by Jaypee Brothers March 2019. ISBN 9789352709946.

Journal Articles Reviewed

Name of the Scientist	Journal
Dr.M.Vishnu Vardhana Rao	Indian Journal of Medical Research (IJMR), Statistics in Medicine
DrH.K.Chaturvedi	Indian Journal of Medical Research (IJMR), International Health (INHE), American Journal of Public Health, BMC Journal of Infectious Disease, Plos ONE
Dr.Damodar Sahu	Indian Journal of Medical Research (IJMR), Indian Journal of Community Medicine, Demography India
Dr.Atul Juneja	Indian Journal Medical Research, Indian Journal Medical Sciences, Asia -Pacific Journal of Cancer prevention, Indian Journal of Cancer, Journal of Clinical and Diagnostic Research
Dr.Tulsi Adhikari	Indian Journal Medical Research
Dr.Geetha R.Menon	Indian Journal Medical Research, Indian Journal of Thoracic and Cardiovascular surgery,
Dr.Lucky Singh	Clinical Epidemiology and Global Health – Elsevier Sexual & Reproductive Healthcare - Elsevier

Capacity Building Workshops

Sr. No.	Title of the workshop
	Statistical Methods in Biomedical Research organized jointly by ICMR-NIMS and ICMR- National Institute of Occupational Health at ICMR-NIOH, Ahmedabad, April 4-6, 2018.
	Workshop on Equity Considerations in Cost-Effectiveness Analysis held at the All India Institute of Medical Sciences (AIIMS), New Delhi, April 12, 2018.
	Introduction to Systematic Reviews for Prevalence and Incidence Studies at ICMR-NIMS, April 20, 2018.
	Application of Statistical Methods in Health Research for M.Sc. (Statistics) Students of Dept. of Statistics, Kurukshetra University, Kurukshetra; IIPS, Mumbai, Delhi University, Banaras Hindu University, Varanasi; Amity University, NOIDA, June 4, 2018.
	<p style="text-align: center;">Workshop on Survey Research Methodology, October 8-10, 2018</p> 
	Training workshop on Secondary data extraction for field investigators under ARTIE project organized by ICMR-NIMS, New Delhi at ICMR-NIMS, November 1-2, 2018.
	<p>Training workshop on Quantitative surveys instruments (PDCT 0-5) for field investigators for ARTIE under NACP project for Northern region at ICMR-NIMS, New Delhi, November 19-20 & 22, 2018.</p> <p>Workshop on Bio statistical Methods in Medical Research, December 4-7, 2018.</p>



Training workshop on Qualitative research methods for the ART Impact Evaluation Study staff at ICMR-NIMS, December 20-21, 2018.

Workshop on “Statistical Methods in Health Data Analytics using R at ICMR-NIMS, March 12-15, 2019.



Award

Dr.Geetha R.Menon	Awarded the Queen Elizabeth Scholar Award, 2018 from Dalla Lana School of Public Health, University of Toronto
Dr.Lucky Singh	Dr. T. V. K. Satyanarayana memorial award for Best Poster Paper (2018) for the paper titled “Unveiling the contemporary portrait of maternal health: analysis of NFHS4 to identify the adequacy of Antenatal Care among Indian women”, at the 16th Annual Conference of Indian Association for Social Sciences and Health (IASSH) in collaboration with Centre for the Study of Regional Development, Jawaharlal Nehru University (JNU), New Delhi during December 10-12, 2018.
Dr.Lucky Singh	Received full scholarship to participate in the “4th Asian Population Association (APA) Conference, held during July 10-14, 2018, Shanghai University, Shanghai, China.

Foreign Visits

Sl.No.	Name and title
1.	<p>Dr.M.Vishnu Vardhana Rao, Director, ICMR-NIMS attended “WHO Verbal Autopsy Working Group and Technical Meeting on Mortality Analysis with Verbal Autopsy” at Washington, DC, USA, September 10-14, 2018.</p> 
2.	<p>Dr.M.Vishnu Vardhana Rao, Director, ICMR-NIMS attended Regional meeting on HIV Estimations Software and data requirement training in Bangkok, Thailand, March 4-6, 2019.</p> 

3.	Dr.Damodar Sahu Participated in the training workshop on HIV Estimates and Projections 2019 at Bangkok, organized by UNAIDS Regional Support Team Asia-Pacific Office, Bangkok, Thailand, March 4-6, 2019.
4.	<p>Dr.Geetha R.Menon Attended the SAVE scholarship programme in CGHR Toronto, June 17-August 24, 2018.</p> 
5.	Dr.Saritha Nair Presented poster entitled, “Intervention to increase contraceptive use among women in a low-income community in Mumbai “at the Fifth International Conference on Family Planning, Kigali, Rwanda with financial support from ICMR, November 12-15, 2018.
6.	Dr.Saritha Nair Attended two short courses on (i) Economic Evaluation and (ii) Economic Analysis of Health Policies, at the London School of Hygiene and Tropical Medicine, United Kingdom, January 14-March 29, 2019.
7.	Dr.Lucky Singh presented the paper entitled “Individual and socioeconomic determinants of quality of antenatal care in India: A cross-sectional study” presented at the “4 th Asian Population Association (APA) Conference held at Shanghai University, Shanghai, China, July 10-14, 2018.

Other Activities

- The Institute invited Prof.Vinod K.Paul, Member National Institution for Transforming India, NITI Aayog to deliver a talk on “Health Research in Ayushman Bharat Era” on the occasion of Prof PP Talwar Oration on June 6th 2018.



- The Institute invited Dr.Padam Singh to deliver a talk on “Significance: Statistical and/or Clinical” on the occasion of National Statistics Day on 29th June 2018

Yoga Day was celebrated at the Institute.



- The Institute invited Dr.Jugal Kishore, Professor of Community Medicine, Vardhman Mahavir Medical College to deliver a talk on "Avsadh (Hindi)" on September 28, 2018 on Hindi day.



- On the occasion of 43rd Foundation day of the Institute on October 4, 2018 Prof.K.Srinath Reddy, President, Public Health Foundation of India was invited to deliver a special talk on "Back to the Future with Bayes: Probabilities in a World of Uncertainties"



Members of the Institute Ethics Committee

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|----|--|------------------|
| 1. | Prof.S.D.Seth, Ex-Advisor, Clinical Trial Registry-India, Ansari Nagar, New Delhi-110029. | Chairman |
| 2. | Dr.Sudesh Nangia, UGC Faculty Recharge Programme, Old CRS Building, JNU, New Campus, New Delhi-110067. | Member |
| 3. | Dr.Sanghamitra Acharya, Director, Indian Institute of Dalit Studies, D-II/1, Road No.-4, Andrews Ganj, New Delhi-49. | Member |
| 4. | Dr.Shashi Kant, Professor, Centre for Community Medicine, AIIMS, New Delhi 110029. | Member |
| 5. | Dr.G.C.Shukla, Advocate, Supreme Court of India, New Delhi. | Member |
| 6. | Prof.Arvind Pandey, Ex-Director, ICMR-NIMS, Ansari Nagar, New Delhi. | Member |
| 7. | Dr.S.K.Benara, Scientist 'F', National Institute of Medical Statistics, Ansari Nagar, New Delhi-110029. | Member Secretary |

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4. Dr.Ajit Mukherji, Scientist 'F'
5. Mr.Ajit Mathur, Scientist 'F'
6. Dr.S.K.Benara, Scientist 'F'
7. Dr.Anil Kumar, Scientist 'F'
8. Dr.Damodar Sahu, Scientist 'F'
9. Dr.Tulsi Adhikhari, Scientist 'E'
10. Dr.Atul Juneja, Scientist 'E'
11. Dr.Geetha R. Menon, Scientist 'E'
12. Dr.Saritha Nair, Scientist 'E'
13. Dr.Kh.Jiten Kumar Singh, Scientist 'D'
14. Dr.B.K.Gulati, Scientist 'D'
15. Dr.Lucky Singh, Scientist 'C'
16. Mr.Bhagirath Lal, Scientist 'B'
17. Dr.Saurabh Sharma, Scientist 'B'

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2. Mr.Rajendra Singh, Principal Technical Officer
3. Mr.S.K.Bara, Sr. Technical Officer (3)
4. Mr.Shiv Kumar, Sr. Technical Officer (3)
5. Mr.Gurmeet Singh Rana, Sr. Tech. Officer (3)
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8. Mr.Subhash Gautam, Sr. Tech. Officer (2)
9. Mr.Ajay Kumar, Sr. Tech. Officer (2)
10. Mr.Charan Singh, Sr. Tech. Officer (2)
11. Ms.Sunita, Sr. Tech. Officer (2)
12. Mr.Prashant Tapase, Sr. Tech. Officer (2) [Transferred from ICMR-NIRRH, Mumbai w.e.f.4-1-19]
13. Ms.Madhu Mehra, Tech. Officer (C)
14. Ms.Prabila Toppo, Tech. Officer (C)
15. Ms.Kapil Gautam, Tech. Officer (C)
16. Dr.Jeetendra Yadav, Tech. Officer (B)
17. Ms.Geeta Sharma, Sr. Technician-III [Superannuated w.e.f. 31-10-2018]
18. Ms.Indira Rani, Sr. Technician-III
19. Mr.Yatendra Kumar, Tech. Officer (A)
20. Mr.Ashpinder Kaur, Tech. Officer (A)
21. Mr.Ganesh Prasad Jena, Tech. Officer (A)
22. Mr.Thandi Mal, Tech. Officer (A)
23. Mr. Raj Kumar Yadav, Sr. Technician - II

ADMINISTRATIVE

1. Ms.Neha Govind, Accounts Officer
2. Ms.Usha Gulati, PS
3. Ms.Raj Kala, Section Officer (Accounts)
4. Mr.Balraj Sharma, Section Officer (Admn.) [Superannuated w.e.f. 31-10-2018]
5. Ms.Shalini Bhatia, Assistant
6. Mr.Mukesh Kumar Kaushik, Assistant/SO (I/C) Accounts
7. Ms.Kusum Luthra, Assistant/SO (I/C) Admn.
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