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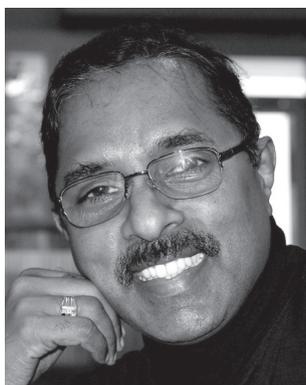
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# Foreword



I am delighted to be part of the editorial team that is presenting before you the first volume of the *Journal of Health Systems*, a new journal that is envisioned to represent research in health systems and policy. The topic of health systems has been increasingly gaining attention in the recent past, as there has been a realization by the global public health agencies and communities that it is impossible to gain the desired momentum in tackling many of the global health challenges without addressing health systems issues.

In many countries that contribute to the major share of the disease burden, be it communicable or non-communicable diseases, health system restraints prevent the efforts of the governments and other partners from reaching the poor, needy and other marginalized sections of the populations.

Control of the three major communicable diseases namely HIV, TB and malaria, that claim the biggest toll of lives lost globally, have been heavily supported by the global momentum that started especially with the emergence of the Global Fund to finance the control of these diseases mainly in countries with high disease burden and fewer resources allocated for the control of these diseases.

The non-communicable diseases have lately been gaining increased attention due to which additional resources are being pledged to control priority diseases. Despite the boosted global efforts and improved financing, the proponents of both communicable and non-communicable disease control programs recognize health systems constraints as the major impediment in the path towards achieving the desired goals in the control of these diseases that constitute the major share of the global disease burden.

We too have been part of the discussions in the global public health forums about the need for a Journal of this kind to focus on the health systems issues and this *Journal of Health Systems* is a modest effort intended to address that demand and fill the gaps

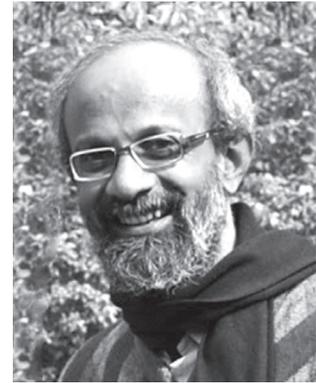
A handwritten signature in black ink, appearing to read 'S. S. Lal'. The signature is written in a cursive style with a horizontal line underneath it.

**Dr. S S Lal**

Advisor, Health Systems Research India Initiative



# Editorial



Health Systems approach calls for a multi-dimensional analysis of health improvement in societies and is holistic unlike a segmented approach which discretely examines factors in isolation. Such a multi-dimensional analysis is a challenging task and requires an interdisciplinary competence. The Journal of Health Systems will strive to develop and facilitate such a competence and will promote critical scholarship in this area.

International and national scholarship with respect to health systems research recognizes new trends which are emerging in different societies and accepts contextual issues predominating analysis of health improvement. The social determinants framework and the reiteration of Health for All and Health in All policies is an indication of such recognition. The way health systems and services are financed, designed, and delivered, the interaction between health services and the people occur in a social context and it continually impinges on the way health services develop in a country. Health services can reinforce preexisting social stratification and also impoverish people. Many features of the health services such as resource allocation, strategies, priority setting, human resources, management, regulation etc. have implications for ensuring equity. In recent times, the implementation of National Health Mission in India invited such a critical scrutiny by public health scholars. The continuing dichotomy in the disease scenario is another area which required recognition of contextual factors.

There are different levels in this analysis. The first level is to consider health (ill-health to be specific) as a problem that needs to be resolved. The purpose is to understand the nature and cause or distribution and determinants of diseases. In other words, the

epidemiology of diseases forms the basis for an understanding at this level. The analysis of health problems in a society requires consideration of not only the growth of productive forces but also the level of inequality in terms of class, caste and other social categories, gender, generational and geographical factors. At the second level, health has to be considered as a need to alleviate the suffering due to health problems. It is here that the analysis of social, psychological and cultural factors is needed. Human beings encounter health problems when they interact with each other in a given social structure, in addition to when they interact with the parasite and the ecological context in which they live and work. The analysis of institutional factors including appropriate financing strategies for optimum impact of health policies have to be considered in this context. Non-accessibility and non-availability of health services to the people have to be explained not only in social, psychological and cultural terms but in terms of the political economy as well. At the third level is the global domain where the focus has to be on the imbalances in the world system which sustains poverty and inequality in individual countries. With regard to health, the influence of global policies in shaping endogenous actions and programs needs to be understood.

The Journal of Health Systems will particularly welcome contributions which can enhance this holistic understanding of health and health services in societies and which can enrich public health both in developing and developed contexts.

**Kesavan Rajasekharan Nayar**



# Introduction to Journal of Health Systems



I have great pleasure in introducing yet another initiative from Team HSRII, *The Journal of Health Systems*.

*Journal of Health Systems* is a peer-reviewed Journal, with focus on health systems and policy. The Journal will be published once in every three months to begin with. I am very thankful to Prof Dr KR Nayar for accepting our invitation to be the Editor-in-Chief. I am deeply indebted to the members of the Editorial board as well as our advisors.

The first issue of the Journal is a supplement with abstracts of the *First India International Public Health Conference* that HSRII is organizing along with Indian Medical Association and Global Institute of Public Health. This annual conference, IIPHC aims at bringing together leaders, policymakers, practitioners, researchers, academicians, and students of public health and related medical and social spheres from around the world to discuss, deliberate and debate on specific themes of public health importance. IIPHC 2014 is being held on November 6th and 7th, 2014 at Thiruvananthapuram, India. This year's theme is 'Health and Millennium Development Goals- Where do we stand now?'

The supplement contains about fifty abstracts that were selected for presenting at the conference over five tracks, namely Millennium development goals and health systems, Health workforce, Health financing, Governance and regulation and Service provision and delivery

As you may recollect, HSRII won the First Health Systems Global Social Media Awards recently. It was the great support and encouragement extended by our members that enabled us to gather recognition at a global level and we are highly indebted to all our members for their contributions to our humble efforts towards knowledge sharing

I am hopeful that health systems research communities across the globe will receive the Journal with the same enthusiasm. I welcome you all to contribute to the *Journal of Health Systems*

A handwritten signature in black ink, appearing to read 'Dr. FM Shaffi'. The signature is stylized and includes a flourish at the end.

**Dr FM Shaffi**  
Executive Editor



# India International Public Health Conference 2014

Thiruvananthapuram, India  
6 – 7 November 2014

## Track-1: Millennium development goals and health systems

► OP-1-1

ID-34

### Multidimensional poverty and fertility preferences among women in India

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**Background:** Spacing and limiting pregnancies has direct effect on health and well-being of the women.

**Objective:** The differentials in fertility preferences in terms of contraceptive use, desired any additional child, ideal number of child among women was examined by the multidimensional poverty.

**Methods:** The unit level data of India Human Development Survey (IHDS) conducted in 2004-05 covering more than 41,000 households in India was used. The multidimensional poverty was measured using Alkire-Foster method. Five dimensions; health, education, economic, work/employment and household environmental deprivation, and 10 indicators were used in estimating multidimensional poverty.

**Results:** The women who were multidimensional poor were less likely to use any contraception method for spacing or limiting their fertility. The multidimensional poor women also have high desire of having additional children. The multivariate results showed that by controlling a set of demographic and socio-economic

variables, compared to the non-poor women, the odds of using contraception among multidimensional poor women is 0.803 [CI:0.740-0.871] and the odds of desire more child among multidimensional poor women is 1.336 [CI:1.178-1.517].

**Conclusion:** The study found a negative impact of multidimensional poor on reproductive health and fertility preferences of women and thus suggesting to focus among the most disadvantaged women groups.

► OP-1-2

ID-64

### Community-based study of BCG vaccine effect on risk of tuberculosis infection and disease among household contacts in India

**Rachel Culp<sup>1</sup>, Srividya Adinarayanan<sup>2</sup>,  
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**Background:** India is a high TB burden country with incidence of 176 cases per 100,000 in 2012. The Bacillus Calmette-Guérin (BCG) vaccine is used since 1921. In India, it is administered within three days of birth. While BCG vaccine is effective against TB meningitis and miliary TB, efficacy to protect against pulmonary TB is inconclusive. The public health significance of this study is to analyze the effect of the BCG vaccine on LTBI and TB.

**Objective:** The study objective is to estimate the effect of the BCG vaccine on latent tuberculosis infection (LTBI) and tuberculosis (TB) disease among the household contacts in India from a community-based study.

**Methods:** Data was collected from a community over four surveys from 2000-2009 in five blocks of Tiruvallur district in Tamil Nadu, India. Five hundred and two households with at least one culture positive TB case at the baseline were assigned as case households, and 1506 randomly selected households with no TB case present at baseline were selected as control households. The baseline survey in 2000 was followed by three surveys with an interval of 2.5 years to assess the risk of LTBI and TB among the contacts in case and control households.

**Results:** Based on preliminary analysis, the risk of LTBI among BCG vaccinated children was lower compared to non-vaccinated children of 3 years or less in age, in case households, while no difference in risk was observed in control households. The BCG vaccine had no effect on TB disease among adults in both case and control households.

**Conclusion:** Preliminary results suggest that BCG vaccine has a protective effect among children of 3 years or less in age against LTBI. The public health implication of this study is to continue BCG vaccination program in India.

► OP-1-3

ID-128

### Knowledge and attitude of Indian urban women towards prevention of cervical cancer

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**Background:** The three most common causes of deaths due to cancer among Indian women are cervical cancer (17.1%), stomach cancer (14.1%), and breast cancer (10.2%). Currently there is very scarce literature available in India regarding women's awareness and acceptance about cervical cancer prevention methods.

**Objectives:** To assess the knowledge regarding cervical cancer and its two key prevention methods – Screening and HPV vaccine and attitude towards practicing these methods, among urban Indian women.

**Methods:** A pre-tested, structured, multiple choice questionnaire was used. A total of 423 set of responses were collected from three categories of urban women - college going girls, employed women and fulltime housewives.

**Results:** Twenty-six percent of the respondents could identify the correct symptoms that a patient with cervical cancer may show. Twenty-seven percent of the respondents said that they have heard about a Pap smear test. Of all women who had taken a pap test, 33 percent were self-prescribed. Fifty-two percent do not know anything about a vaccine to prevent cervical cancer. Thirty-two percent would like to take a vaccine as a preventive measure against cervical cancer and 30 percent were willing to pay up to INR 1000 for such a vaccine.

**Conclusions:** The knowledge regarding cervical cancer, screening for cervical cancer and HPV vaccination is poor. However, there is a favourable decision making & attitudinal environment regarding screening, moderate paying capacity and positive perceptions about the preventive vaccination (HPV) among the studied population. The findings from this study point towards the need for vigorous information, education and communication campaigns for raising awareness on cervical cancer prevention methods. This should be supplemented with establishing centres that provide screening and vaccination for cervical cancers, both in public and private settings.

► OP-1-4

ID-69

### Post-National Rural Health Mission (NRHM) Infant and Young Child Feeding practices (IYCF) in a high-focus and non-high focus states in India: Experience from Uttar Pradesh and Karnataka

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**Background:** Appropriate Infant and Young Child Feeding practices could save the lives of 1,500,000 lives of under-five children annually across the world. Inappropriate IYCF practices lead to malnutrition, which is associated with two-third of under-five child mortality. Therefore under NRHM initiative in 2005, Government of India has given due importance to IYCF practices to achieve MDG-4 with emphasis on states with poor health indicators.

**Objective:** This study focuses on achievement in IYCF practices after implementation of NRHM in selected high focus and not high focus states.

**Methods:** Select IYCF practice indicators from various studies and surveys were analysed for two Indian states namely Uttar Pradesh (UP) and Karnataka considering availability of published data and representation of NRHM high focus and non-high focus states.

**Results:** Exclusive breast feeding practice was decreased between NFHS-I(1992) & NFHS-III(2005), both in UP (65.5% to 58%) and Karnataka (60.3% to 51.3%) with higher rate of decline in UP(14%) than Karnataka(11%). Similar trend was seen during DLHS-II (2003) &III (2007) in both states but with reduced estimates than NFHS. Studies and surveys during post-NRHM period suggest mixed results in UP (range 5.3%-72.2%) and in Karnataka (49.8%-77.5%).

Considering DLHS-II & III, increase in breast feeding practices within one hour of birth was found both in UP (7.8% vs 15.4%) & Karnataka (40.4% vs. 46.9%). Post-NRHM studies and survey indicated higher estimates in both states (UP-15% -79.3%; Karnataka 25%-65.9%). Similar trend was observed in post-NRHM studies for appropriate weaning practices in these states with better outcomes in UP than Karnataka.

**Conclusion:** IYCF practices except exclusive breast-feeding are improving following NRHM implementation and better results were seen in UP than Karnataka. As early weaning practices contrast exclusive breast-feeding until six months, such practices need to be clearly spelt out in guidelines and stressed during training.

► OP-1-5

ID-62

## Progress of Millennium Development Goal-4 in Kerala based on district level household and facility survey

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**Background:** Millennium development goals are a set of numerical & time-bound targets to measure achievements in human and social development laid down by the United Nations Organization. MDG-4 aims to reduce child mortality. The key indicators are under-five mortality, infant mortality rate and

proportion of 1-year-old children immunized against measles. Though Kerala is one of the developed states in India, certain districts in Kerala have shown poor performance in achieving these indicators especially Kasaragod.

**Objectives:** 1. To find out the progress made towards MDG-4 in Kerala 2. To find out the factors which delay the progress of MDG-4 with special emphasis on Kasaragod district in Kerala

**Methods:** Data of neonatal mortality rate, infant mortality rate and under-five mortality rate have taken from sample registration system of 2007 and 2012. Comparison had done between Kerala state and Kasaragod district using DLHS-3 and 4 data.

**Results:** Neonatal mortality rate, infant mortality rate and under-five mortality rate of Kerala in 2007 and 2012 are (13,12) (14,13) and (12,7) respectively. Targets to be achieved by 2015 for NMR, IMR and U5MR are 3,6 and 8 respectively. Only one point decline had shown in IMR and U5MR, whereas five points declined in NMR. Kerala and Kasaragod compared data are given like Kerala DLHS-3, DLHS-4 and Kasaragod DLHS-3,DLHS 4. The prevalence of pregnant women who received any antenatal check-up was 99.8, 96.2 / 99.3,79.7%.

Pregnant women who had at least one tetanus toxoid injection 98.5,98 / 95.6, 24.8 percent.

Pregnant women who consumed 100 or more IFA tablets/syrup equivalent 74.3,78.8 / 61.8,44.7%.

Institutional delivery 99.4, 99.6 / 98.6, 96.9%.

Delivery at home 0.6, 0.2 / 1.4, 0.5 percent.

Percentage of women who had any delivery complication 24, 15.5 / 22.8, 14.4. Children (12-23 months) received full vaccination 79.5, 82.5 / 87.3, 40.5%.

Full immunization dropouts 11.3, 6.05 / 7.6, 33.29%.

Children (age 0-5 months) exclusively breastfed 69.1, 69%.

Prevalence of diarrhoea in last 2 weeks for under 5 years old children 5.9,38 / 3.3, 5.1%.

Children with diarrhoea in the last 2 weeks and received ORS 45.1 ,58.6. 36.4,44.4%. Children with diarrhoea in the last 2 weeks and sought advice/treatment 78.6 76.7 /62.9,77.8%.

Prevalence of ARI in last 2 weeks for under 5 years old children 11.5,7.1 /4.2,2.2%.

Children with acute respiratory infection or fever in last 2 weeks and sought advice/treatment 89.8, 89.4/90.5, 75%.

**Conclusion:** Though Kerala is one of the developed state in India, MDG 4 targets set for Kerala is unlikely to achieve by 2015. Certain factors which help to improve these indicators are adequate MCH care, effective immunization, prevention of neonatal and childhood diseases. These factors show poor performance in few districts of Kerala especially Kasaragod district (as shown above). Reasons for this poor performance need to be find out and resolved, so that Kerala can achieve MDG-4 targets by 2020.

► OP-1-6

ID-80

### Access to maternal health service understanding ‘where’ and ‘why’ women access services for pregnancy and delivery

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Development Solutions

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**Background:** An exploratory research undertaken to understand what factors influence women in accessing maternal health services.

**Objectives:** To understand factors that influence access to maternal health services in resource poor locations.

**Methods:** Qualitative/ethnographic methods- in-depth interviews, FGDs with women, service providers and officials; and observations undertaken in four locations in Jharkhand.

**Results:** Almost all pregnant women access Ante Natal Care (ANC) services, as the process of registration and access is linked to other incentives such as take home rations and Janani Surakhsha Yojna etc. However, ANC services provided by public health system is basic and often limited to checking weight, blood pressure and Iron-Folic Acid supplementation. In many instances women; who availed the basic ANC at Village Health and Nutrition Day went to the private providers and NGO (non-government organization) services, for reconfirmation or additional services. Majority of pregnant women access either government or government accredited private hospitals for delivery. This is influenced by affordability, incentives, transport service and motivation by village health workers. For

many, quality of services– availability of services and attitude of providers was important. They chose private facilities, even if they were indebted in the process. In urban centres, women almost entirely access private and NGO services.

**Conclusion:** Affordability does influence access and incentives do tilt access towards public health systems. However, where NGOs and private providers are available, women access them too, as they provide comprehensive services of better quality. NGO providers, in addition, are affordable. Women appear to weigh both affordability and quality in accessing services. If affordable, women pay to access quality services, over and above what they access from public health system. They also access the public health system to avail the incentives. For some women however, quality and comprehensive services are paramount and they incur debt while accessing private providers.

► PP-1-1

ID-72

### India’s progress towards achieving Millennium Development Goal (MDG)-5: Experience from MMR trend in India

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**Background:** India needs to reduce Maternal Mortality Ratio (MMR) from, 437 per lakh live births in 1990 to 109 per lakh live births by the year 2015 to achieve MDG Goal-5. Government of India has initiated multi-sectoral comprehensive MCH programmes towards achieving this goal. Considering current level of MMR (2012) at 178 per hundred thousand live births may be reduced to 140 per hundred thousand by 2015, but it remain beyond achievable target. However, some Indian states already achieved MDG target but others are trailing behind.

**Objective:** To analyse progress in reduction of MMR from 1990 to 2012 in most populous states in India.

**Methods:** Sample Registration Surveys (SRS bulletins) and literatures were referred and analyzed for MMR and its contributing factor during 1990-2012.

**Results:** Trend in MMR suggests decline in all the states with a rapid decline during 2004 and 2009. In Kerala, MMR remained low around 81 per hundred thousand

live births. As per 2012, SRS data only four states (Andhra Pradesh, Kerala, Maharashtra, and Tamil Nadu) had achieved MDG-5 target for MMR. The momentum of decline in MMR was lower after 2010. States like Gujarat, Haryana, Karnataka, Punjab and West Bengal had MMR less than 178 per one hundred thousand live births. While other states like Bihar, Madhya Pradesh, Rajasthan, Orissa, Uttar Pradesh have high MMR (230-328 per one hundred thousand live births) and being populous contribute to high MMR of country.

**Conclusion:** Some states had achieved desired goal in MMR but highly populated states like UP, MP, Bihar etc. with higher MMR need to be given priority in health mission in order to achieve the MDG targets in near future.

▶ PP-1-2

ID-27

### The usage of Mother and Child Protection Card: A case study of Kamrup rural district of Assam, India

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**Background:** Mother and Child Protection (MCP) Card is a joint initiative of Integrated Child Development Service (ICDS) and National Rural Health Mission introduced with effect from 1st April 2010 replacing the earlier MCH Card of MoHFW and earlier ICDS Mother Child card. It is a common card for both ICDS and NRHM to strengthen the continuum of care for pregnant women and children less than three years of age, incorporating the new WHO child growth and development standards. The objective of the study is to understand the knowledge and utilization level of MCP by the service providers and the mothers.

**Methods:** A case study was done in the two blocks of Kamrup Rural district of Assam during April and May 2014 amongst the service providers comprising of ASHA, AWW and ANM and the pregnant mothers.

**Results:** The report elucidates that the main role of ANM is to keep records of ANC checkups, post natal care and danger signs in a new born, whereas ASHAs are responsible for family identification, preparation for delivery, early initiation of breastfeeding. AWW are

mainly responsible for growth chart recording of the child. Hundred percent of the service providers used the MCP card for the purpose of explaining about ANC service, whereas only 20.5% of them used it as a tool of preparation for delivery and only 18.2% of them used it for explaining care during childhood illnesses. The analysis of the mothers showed that almost all of them had a MCP card and they did take the card during regular checkups. However, only five percent of mothers carrying card had read it for their use.

**Conclusion:** This study finding will help the health system for enhancing the skills of service provider to use the MCP card as a tool beyond recording the ANC and immunization dosages and use it further as nutritional assessment tool.

▶ PP-1-3

ID-36

### Mental health problems and health seeking behaviours among the transgender community: A study of Mumbai

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**Objective:** Health of the transgender is as important as any other population sub-groups. However, little is known about the issues of mental health problems and health seeking behaviour of transgender in India. This paper examines the depression, stigma problem and suicidality (risk of suicide) among the transgender people in Mumbai city.

**Methods:** The study used the primary survey data conducted in Mumbai city among the transgender community with a total sample of 120. Both qualitative and quantitative data was collected on demographic and socio-economic characteristic, general health and sexual health problems, mental health and health seeking behaviour among transgenders.

**Results:** The quantitative results revealed that among the transgender, the prevalence of depression was very high. In this community, 58.3 percent and 45.8 percent of the transgender were suffered from depression and stigma problem respectively. On the other hand, 42 percent and 48% of the transgender attempted suicide and experienced discrimination in the society respectively. The qualitative results also revealed that

the transgender were suffered from physical violence especially due to being a transgender, stressed due to being a transgender, experienced discrimination everywhere, experienced sexual health problems especially HIV, partner problem etc.

**Conclusion:** The prevalence of depression, self-harm attempt and suicidal attempt was common among this community.

► PP-1-4

ID-71

### Five decades of National Tuberculosis Control Program implementation and community awareness

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**Background:** In India, as per Millennium Development Goal six, 2015 target for reduction of tuberculosis mortality, prevalence and incidence are 19, 233, and 108 per hundred thousand population respectively. As per 2012 World Health Organization report; mortality, prevalence and incidence were 22, 230, and 176 per 100 thousand population respectively. National TB Control Program is in place since 1962 and revised in 1993 (RNTCP) to address the shortcomings. Under National Health Mission, the programme was given impetus to achieve MDG-6. Since TB is prevalent social disease, community knowledge, attitude and practice (KAP) could suggest impact of programme.

**Objective:** To analyze trend in community KAP regarding TB at community during five decades of NTCP implementation as per WHO KAP indicators.

**Methods:** A total of 20 Pub Med indexed articles on KAP at community level were identified using electronic data base and Pub Med search engines, to identify KAP indicators after NTCP implementation.

**Results:** At the time of implementation of NTCP (1962), knowledge about cough as TB symptom was 82.6% which was decreased to 73.7% (1979) in Karnataka. Knowledge about cough varied from 60% (TN, 1999) to 90.1% (Delhi, 2005) with majority of study suggesting high awareness following RNTCP implementation. Knowledge further increased in some states and decreased in others in post-NRHM phase. Similar mixed results were observed for other KAP indicators like free treatment and mode of transmission

but with lower estimates than cough as a TB symptom. Female participants found to be having lower knowledge than male counterparts were in these studies.

**Conclusion:** After five decades of implementation, the community knowledge regarding TB is incomplete and not as high as expected. Lower knowledge among females may make them vulnerable for TB infection. Gender disparity and community awareness need to improve through NTCP to sustain the achievements in the fight against TB.

► PP-1-5

ID-60

### Prevalence of Acute Diarrhoeal Diseases (ADD) among under-five children in Kozhikode District Kerala

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**Background:** Diarrhoeal disease is an important public health problem among under- five children in developing countries. India is the worst affected, with an estimated 98,000 deaths a year. This study was conducted in three areas of Kozhikode District Kerala. This study was conducted among 300 houses by trained investigators house visits during May month of 2013 and one year recall period of episodes.

**Objectives:** 1.To study the prevalence of Acute Diarrhoeal Diseases among under-five age group 2. To study the associated factors related to acute diarrhoeal diseases.

**Methods:** Community based cross sectional study using pre tested semi-structured questionnaire and data entered in Microsoft excel sheet analysed in SPSS.

**Results:** Among the 300 houses surveyed, 37.9 percent of houses had five family members. The under-five age group constituted 13.9 percent of the study. Prevalence of ADD was 29.1 percent. Less than one year episodes of ADD was 30.7 percent. The duration of diarrhoeal episodes was >2 days for 30.3 percent. The outpatient (OP) & inpatient (IP) treatment constituted 7.9 percent and 4.9 percent respectively. 51.6 percent of the mothers washed their hands before cooking. 41.9 percent practiced washing hands before feeding children. Drinking water directly consumed (12.1 %), boiled (78.9 %).1.3 percent of children were on weaning

and top-up feeds. Around 96.3 percent were continuing breastfeeding for <1 year. Source of ORS was ASHA workers (55%), government hospitals (90%). 99.3 percent were disposing stools of infants in toilet. 25.7 percent had history of having food from outside within 2 days of disease episode.

**Conclusion:** Despite 51 percent of hand washing and 21 percent of houses boiling water for use, diarrhoeal diseases still continued. The governments should focus on comprehensive diarrhoeal disease control strategy, including improvement of water quality, hygiene, and sanitation provision of oral rehydration solution and zinc supplements.

▶ PP-1-6

ID-51

### Trends of malnutrition among under-five children, India 2000-2014: A review

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**Background:** Malnutrition is a major challenge for Public Health. Under nutrition is one of the major issues in India as in other parts of the world. In the world, out of every three malnourished children one child lives in India.

**Objective:** To determine the trend of prevalence of widespread under nutrition among preschool children of India.

**Methods:** Studies on malnutrition among pre-school children which were conducted during 2000 to 2014 were collected from Google Scholar and PubMed online journal index using internet. There were many studies available on malnutrition in online journal index. Out of them, total 21 literatures were taken (5 from tribal areas, 7 from urban slum areas and 9 from rural areas) which were most relevant to this study.

**Results:** Among tribal area literature, there was high prevalence of stunting and underweight (72% and 68% respectively) in Saharian area, Rajasthan and lowest prevalence of stunting, underweight and wasting were 30.4 percent 29 percent and 21.6 percent respectively in Dibrugarh, Assam. Among urban slum literature, high prevalence of stunting and underweight were 71.9%, 62.9% respectively in Bagalkot, Karnataka and lower prevalence of underweight and wasting were 35% and 17% respectively in Mumbai. Among rural area, high

prevalence wasting was 47.2% in Vadodara, Gujarat and lowest prevalence of stunting, underweight and wasting were 22.7%, 17% and 9% respectively in Pune.

**Conclusion:** In India, overall trends of malnutrition have decreased from 2000-2014. But in rural areas, prevalence of malnutrition shows an up and down pattern during 2000-2014 in different parts of India.

▶ PP-1-7

ID-76

### India's progress towards achieving Millennium Development Goal (MDG) 4: trends in current infant mortality rates in Indian states

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**Background:** Infant mortality rate is one of the key development indicators. India needs to achieve a reduction in infant mortality rate (IMR) of 28 per 1000 live births by the year 2015 in compliance with MDG 4. Government of India has initiated a multipronged approach in coordination with national and international agencies to achieve the same.

**Objectives:** To analyse India's progress in reduction of IMR from 1990 to 2012 in the 18 most populous states having Lions' share in deciding trend in IMR at national level.

**Methods:** The required data on infant mortality during 1990 through 2012 were collected from electronic data base of Sample Registration System (SRS bulletins).

**Results:** The study analysis suggested that infant mortality rates decreased in all the states with a rapid decline during 2000 and 2010 except Kerala where IMR remained low since earlier decade till present which was around 12-14 per 1000 live births. As per 2012 SRS data, only four states (Kerala, Tamil Nadu, Maharashtra & Punjab) had achieved MDG-4 target for IMR. The momentum in decline of IMR was lower after 2010. States like West Bengal, Uttarkhand, Karnataka and Jharkhand had IMR less than 40/1000 live births but still with insufficient desired trend, while other states like Uttar Pradesh, Madhya Pradesh, Rajasthan and Odisha need to reduce their IMR to half of its current level in order to achieve MDG-4 target.

**Conclusion:** Considering intensive efforts required to reduce IMR from current level, most states need to intensify their efforts in maternal and child health in order to reduce IMR to a desirable level. Nevertheless multipronged approach is required to sustain reduced IMR level in majority of states specifically the poor performing states.

▶ PP-1-8

ID-58

## Nutritional status and immunization status among children of six months to six years in a tribal region of Northern Kerala

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**Background:** The tribal population is a socially, economically and nutritionally vulnerable group. Attapadi valley is a tribal belt in Palakkad district of Kerala with three tribal communities namely Irula, Kurumba and Muduga distributed in the panchayaths of Agali, Sholayur and Pudur. There have been reports of deaths due to malnutrition among the tribal population in Attapady particularly among women and children during late 2012 and early 2013. The high number of deaths reported during a short period of 1-2 months is an indicator of poor health status as well as nutritional status among them. This study was conducted to find out the nutritional status among children.

**Objectives:** To find out the nutritional status and immunization status among children aged six months to six years in Attapadi, a tribal region in Palakkad district of Kerala.

**Methods:** Study Design: Community based cross sectional study, Study Setting: Anganwadi centres in various tribal hamlets of Attapadi, Study Subjects: Six months to six year old children covered under ICDS, Sample Size: 90, Study Tools: Semi structured questionnaire, Salter weighing scale, measuring tape, Shakir's tape, Study Period: May - June 2013

**Results:** Out of 90 children, 29 percent were severely malnourished, 64 percent were moderately malnourished, 1.5 percent were having mild malnourishment and 3 percent children were partially immunized.

**Conclusion:** Nutritional status of the tribal children is very poor. Strengthen the existing ICDS & School nutrition programs. Initiate special nutrition programs like community kitchen. IEC activities should target about healthy cooking and eating practices among tribal population.

▶ PP-1-9

ID-75

## Recent trends in underweight prevalence among under-five children in select Indian states during 2005-2014

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**Background:** Millennium development goal is aimed at reducing the prevalence of underweight among under-five children by 50 percent during 1990-2015 period. About 59 million of underweight children live in South Asia and over half the world's underweight children live in India, Bangladesh and Pakistan. Underweight prevalence had shown only 3 percent (43%-40%) decline from NFHS-2(1998-99) to NFHS-3(2005-06), while India needs to reduce underweight up to 26% for achieving MDG.

**Objective:** To analyse recent trends of underweight among under-five children in India during 2005-2014.

**Methods:** This study analysed the results of different studies and surveys on underweight conducted during 2005 to till date. A total of 18 literatures from Madhya Pradesh, Gujarat, Maharashtra, Karnataka, Assam and West Bengal were reviewed to assess trend.

**Results:** In comparison to NFHS 3, state specific studies indicate mixed results in different states. Higher underweight prevalence was observed in Gujarat [41% vs. (43.67%, 52.8%)], Karnataka [33.3% vs. (80%, 62.9%, 60.4%)], and West Bengal [37.6% vs. (50%, 48.4%, 47.8%, 48.3%)]; and lower underweight prevalence was seen in Maharashtra [32.7% vs. 17%], Assam [35.5% vs. 29%], and Madhya Pradesh [57.8% vs. 49%].

**Conclusion:** The trends of underweight suggested little or less progress in elimination of underweight as per MDG goals. Further concentrated effort is required to improve underweight prevalence in various Indian states.

## ▶ PP-1-10

ID-129

### MDG and Tobacco Control: A case of Tobacco Control by Curtailing Access to Minor: results from compliance survey of secondary schools in rural and urban areas in North-Odisha, India

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**Background:** Tobacco use is the second leading cause of global mortality and is related with all the eight Millennium Development Goals (MDG). While tobacco control is one of the most rational, evidence-based policies in medicine, policy interventions like smoking ban, tax increase etc. when implemented, become the most effective tobacco control tools. In this context, compliance of tobacco free school policy prohibits access to minor as well as smoking ban as per COTPA, 2003 law.

**Methods:** A cross-sectional compliance survey was conducted at selected secondary schools in a North Odisha District (5 Urban, 2 Rural) using an adapted international compliance survey checklist to verify the specific provisions under COTPA, 2003.

**Results:** Active smoking was not observed in any of the schools. However indirect evidence of tobacco sale like disposed cigarette packs, gutka pouch, khaini pouch next to school compound was observed at all schools. In rural schools, neither sale of tobacco to the minors is prohibited nor was 'No Smoking' signage displayed. All urban schools had displayed 'No Smoking' signage but not signage to prevent access to minor. In rural area, no kiosk or selling outlet of any kind was observed within 100 yards of school compound. In urban schools, sale of tobacco within 100 yards was observed at 4 out of 5 schools. The school where compliance was observed was located in the outskirts of district head quarter with no kiosk or stores in nearby area.

**Conclusion:** The compliance to provisions regarding access to minor as per COTPA, 2003 was low in both rural and urban areas but higher compliance was seen at schools in rural areas. This may be due to lack of awareness to the law and awareness need to be generated. Enabling environment like availability of space is helpful in better compliance of Section 6(b) of COTPA, 2003, therefore school licensing can be modified to create enabling environment.

## ▶ PP-1-11

ID-77

### Cross sectional study on knowledge, attitude and practice on water, sanitation and hygiene among mothers of under-five in Farseth Village Development Committee (VDC) of Saptari Nepal

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**Background:** Water sanitation and hygiene is still a burning issue in the context of developing countries where people are affected by high number of water-borne diseases such as diarrhoea, dysentery, typhoid, gastroenteritis and cholera. In the context of Nepal, there are around 91 under five children who died due to diarrhoea in 2011, whereas national water supply coverage is 80.4 percent and sanitation coverage is only 43 percent of total population.

**Objective:** To assess the knowledge attitude and practice on water sanitation and hygiene among mother of under five children in Farseth VDC of Saptari Nepal.

**Methods:** The cross-sectional study was conducted in Farseth VDC where 319(50%) households were taken from 638 households during 2011. A simple random sampling technique was used to identify households. Semi-structured questionnaire was used to interview the mothers of under- five children in each selected households.

**Results:** Study shows that around 70 percent mothers had knowledge on water purification, 60 percent knew the effects of unsafe water and 80 percent knew that after defecation hand should be washed with soap and water. For treatment 27 percent mothers used clothes to filter water, 15 percent boiled and 5 percent used chemicals. As for drinking, 75 percent households used hand pump and 20 percent used well water. Around 28 percent mothers washed their hand before meal and 32 percent washed their hands after using toilet. About 45 percent households had their own toilet, 20 percent of them used public toilet and 35 percent went for open defecation.

**Conclusion:** The study showed that majority of people had knowledge of safe water and sanitation. Over half of the mothers did not treat water before drinking and cooking food. Sanitation around the localities was a

basic problem due to open defecation. Hand wash with soap was not practiced enough in daily lives in order to avoid contact with waterborne hazards

► PP-1-12

ID-33

## Profile and Outcome of patients undergoing treatment for TB in a tertiary care hospital in Kerala

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**Background:** To study the profile and Outcome of patients undergoing treatment for TB in a tertiary care hospital in Kerala

**Methods:** All patients diagnosed with Tuberculosis in the facility during a period of two years from January of 2010 to December 2012 were included in the study. The cases were identified by review of the medical records. Various factors like Ethnicity, Age, Gender, Site of Tuberculosis, Diagnostic methods, Treatment schedule and Duration of treatment, Follow up, Completion of treatment and outcome were analysed

**Results:** A total of 36 cases of pulmonary and extra pulmonary tuberculosis were obtained from the records of two-year period. Of this 86 percent of them were of Indian origin and 14 percent were Maldivians. 19 (52.7%) were males and 17 (47.3%) were females. The Age distribution showed those with 15-30 years were 22 percent, 30-45 25 percent, 45-60 were 33 percent and 60-80 was 25 percent. Most of them (86.11%) were diagnosed with Pulmonary Tuberculosis and rest of them (13.89%) was diagnosed as having Extra Pulmonary Tuberculosis. Of the Pulmonary TB patients, 4 (11.11%) of them were sputum positive and 27 (75%) were diagnosed based on the physicians clinical expertise along with substantial radiological and supporting laboratory reports. Of this, 26 (72.2%) cases were recorded as cured in the records and rest of them (11.11%) were recorded as being referred to local primary health centre for treatment while 6 (16.66%) were found not being followed up. Duration of treatment ranged from 6 months to 12 months depending on the site of TB. There were no documented cases of drug resistance or failures, primarily owing to the fact that no patients were followed up using sputum test. The treatment regimens

followed by all practitioners were the daily-based regimen during the initial phase and Rifampicin and isoniazid during continuation phase. Three patients (8.3%) had drug induced hepatitis and treatment was individualized for them.

**Conclusion:** AFB examination was done in only about one-tenth of the patients during diagnosis, while rest of them were diagnosed based on clinical findings and laboratory and radiological correlations. Similarly, none of the patients were followed up using sputum examination, but rather were evaluated based on clinical and radiological methods. There were no means or efforts to track the defaulters and referral cases and there were no methods for contact tracing of the household for exposures, if at all were done, they were not documented. The findings points to the need of continuous training programs for private doctors and to emphasize the importance of sputum examination for diagnosis as well as follow up.

► PP-1-13

ID-176

## Patterns of netsurfing among medical students in Government Medical College, Thiruvananthapuram

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**Introduction:** With increased academic demand, medical students are to depend on internet for quick & updated information. Along with academic search, sending & receiving e-mails, searching for non-curricular information, chatting, browsing, entertainment and many other amenities are utilized while surfing. A very low fraction of the users tend to stay away from the original purpose and get drifted into the unwelcome trends resulting in poor performance in studies and aberrational behaviour. Internet addiction is characterized by excessive or poorly controlled preoccupations, urges or behaviours regarding computer use and internet access that lead to impairment or distress. Onset is reported to occur in the 20s age group. Internet addiction has been associated with dimensionally measured depression and indicators of social isolation. Psychiatric comorbidity is common, particularly mood, anxiety, impulse control and substance use disorders. Many of the medical students who performed very high in the

medical entrance examination are seen to stay back in studies in the medical college. There may be many contributory factors like the stress induced by change of place of stay and learning, diet change, academic load and psycho social stress factors related to the environment in the institution. The present study is an attempt to go through the internet surfing habits of the MBBS students of Government Medical College Thiruvananthapuram, and to get an idea about the prevalence of internet addiction syndrome among them. The study also explored the pattern of internet usage and understand the gains and losses to the users among the medical students of Government Medical College, Thiruvananthapuram

**Objectives:** 1 To study the net surfing behaviour of medical students of Govt Medical College, Thiruvananthapuram using a questionnaire 2. To detect the prevalence of Internet addiction Disorder among the medical students of Govt Medical College, Thiruvananthapuram using a questionnaire.

**Methods:** A questionnaire seeking the details of internet habits of students and standard questions regarding the identification of internet addiction syndrome, prepared by the investigator was distributed to the students expressing their willingness to take part in the study. In the first part of the questionnaire, they were assessed by their grading the response from 0 to 3 for each question. In the second part, they could choose the answer from the four alternatives given. The data was analysed by the SPSS program.

**Results:** 146 students out of the 200 approached, responded to the questionnaire. 90 percent students reported to engage regularly in Internet-surfing. Rate of internet-surfing of boys is higher than that of girls ( $X^2=3.27$ ,  $P<0.05$ ). Time was apparently spent more on activities like sharing and listening to music, watching films, chatting online, and playing games than for academic purpose. 12 percent felt that the studies get affected. A pattern similar or close to being called as internet addiction disorder was reported by 5.5 percent male students and 1 percent of female students.

**Conclusion:** Internet addiction syndrome exists among medical students in spite of the reduced facilities & time availability. Obviously it leads to academic underperformance. Awareness needs to be created along this aspect among teachers and students.

## Track-2: Health workforce

► OP-2-1

ID-22

### An assessment of the GNM and ANM Nursing schools of Assam

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**Background:** Two of the major goals of Millennium Development Goals relate to reduction of maternal and child mortality. As majority of the MCH services are delivered by the nursing personnel, reduction in maternal and child mortality depends a lot on well trained midwives in the hospital and the community. Education and training quality of these nursing personnel is getting compromised in the country's current drive to scale up nursing training provision which is a cause of concern with regards to the quality of service delivery at all levels of health care facilities. Assam has 21 GNM & 18 ANM schools spread throughout its 27 districts. The Regional Resource Centre for NE states (GOI) has undertaken an assessment of all the nursing schools of the state to identify gaps and draft recommendations for their improvement.

**Objectives:** 1. To assess the current capacities of nursing schools, their infrastructure, manpower status, training materials. 2. To identify gaps and suggest suitable strategies for strengthening nursing education in the state.

**Methods:** A cross sectional study was done by collecting primary data from all the 21 GNM and 18 ANM schools of Assam using semi structured interview schedules and observation checklists. The study has been conducted during the period October to December 2013.

**Results:** Only one GNM and three ANM schools had formal recognition by the Indian Nursing Council. Admissions into both the ANM and GNM schools were not regular. Number of students admitted exceeded by two to three times the sanctioned admission capacity. There were shortage of 133 teachers in the GNM and 23 teachers in the ANM schools of the State. Nursing practice labs, nutrition labs, computer labs, examination halls, libraries, modern AV aids were not available in

most of the schools. None of the schools had hostel facilities in their field practice area and the hostels of the nursing schools did not have adequate space for the boarders.

**Conclusion:** To produce quality service providers and to improve service delivery at all levels of health care system, the gaps identified in the present nursing schools has to be minimized and appropriate corrective actions must be taken complemented with regular monitoring.

► OP-2-2

ID-121

### Empowering field health workforce with newer technology-a report of the ongoing action research initiative in Kerala

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**Background:** Many often highly qualified health professionals in India waste their time doing trivial tasks that could be delegated to auxiliary workers. This ongoing participatory action research initiative seeks to optimise the competency level of Junior Public Health Nurses (JPHNs) by use of newer technologies, so that work can be safely delegated.

**Objectives:** To explore the feasibility of using customised mHealth application to improve the efficiency and confidence level of junior public health nurses in data handling.

**Methods:** Health Information System Project (HISP-India) undertook this study in Athiyannur Sree Chitra Action (ASA) area, the field practice area of Sree Chitra Tirunal Institute (SCTIMST). A customised mobile app was created, to record the monthly data items that JPHNs need to report. This App could synchronise with District Health Information System (DHIS-2) software that is being used in the public health sector in Kerala. A total of 26 JPHNs were given the mobile App and their performance was observed for the next six months.

**Results:** The program was successful in 21 centres. JPHNs could enter data themselves at the convenience of their sub centre. At the block level, consolidation of the data became more accurate and fast. The community

demanded to extend the program to other cadres of staff and to other areas. Many unexpected benefits like JPHNs using the device to photograph doubtful skin lesions, video recording health talks, etc., were noticed.

**Conclusion/Policy Recommendations:** JPHNs are competent in using mobile technology and demand advanced features in it. However privacy, confidentiality, accountability and other data policy concerns need to be addressed properly. Subsequently SCTIMST is currently evaluating the use of mobile tablets by field workers. Every field level worker in Kerala would be given mobile tablets within a couple of years, as part of the eHealth project of the state government.

► PP-2-1

ID122

### Job satisfaction of Accredited Social Health Activists (ASHA's) under National Rural Health Mission (NRHM)

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**Background:** NRHM came to address the health needs of rural population, especially the vulnerable section of the society. One of the key components of the NRHM is to provide every village in the country with a trained female community health activist or Accredited Social Health Activist (ASHA) selected from the same village. ASHA will be the first port of call for any health related demands. She acts as a link for those who find it difficult to access health services, just for performance based honorarium.

**Objectives:** To assess the job satisfaction among the ASHA workers.

**Methods:** A cross-sectional study was carried out for 6 months. All ASHA's of three rural field practice area of J N Medical College, Belgaum were selected by universal sampling. The data was collected using pre-tested, structured, questionnaire. To assess job satisfaction Abridged Job Descriptive Index was used. Data were analyzed using rates and chi square test.

**Results:** Among ASHA workers studied, 44.7 percent felt satisfied to work on present job, only 24.3 percent were happy with current incentives and future

earning potential, 28.2 percent felt that there are good opportunities of promotions. 51.3 percent felt there is good support and supervision from higher officials, 32 percent felt satisfied with the current job.

**Conclusions:** As ASHA worker plays a key role in programme implementation at the grass root level, job satisfaction of these workers plays a vital role in success of the program.

► PP-2-3

ID-40

### Assessment of performance of Accredited Social Health Activist (ASHA) in delivering maternal and child health care services in Kozhikode district

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**Background:** Accredited Social Health Activist a component of National Rural Health Mission (NRHM) is crucial for the success of NRHM especially maternal and child health care services.

**Objectives:** To assess the maternal and child health care services provided by Accredited Social Health Activist in Kozhikode district.

**Methods:** Across sectional study was conducted in Kozhikode district of Kerala during July 2013 - May 2014. Subjects were ASHAs enrolled under NRHM. Cluster sampling technique was done. One panchayats was considered as a cluster. Nine clusters were selected from 74 panchayats in Kozhikode district. Scoring and grading were given for maternal and child health care services for analysis.

**Results:** There were 315 ASHAs enrolled in 9 clusters. Among 315 ASHAs, 300 ASHAs participated in the study. Response rate was 95 percent. Mean age of ASHA was 41.99 (5.36), 90.7 percent were Hindus; 70.4 percent high school education, 96.6 percent married, 95.4 percent belonged to upper lower SES. Around 40.7 percent of ASHAs worked before as community health worker. All of them got 5-7 rounds of induction training. Only 31.3 percent obtained refresher training, mean years of experience was 5.23(0.61), hours of work per day 3.88(1.05), days of work per week 4.05(1.29).

Maternal health care performance results showed that only 0.3 percent had good performance. Only 2 percent showed good performance in child health care services. Only 1.3 percent of the Maternal and Child Health (MCH) care services performance were good, while 20.7 percent had an average performance; while 68.7 percent had poor performance and 9.3 percent with very poor maternal and child health care services.

**Conclusion:** 68.7 percent of ASHAs showed poor performance in MCH care services. So their performance need to be improved through repeated refresher trainings, supervision and performance evaluation.

### Track-3: Health financing

► OP-3-1

ID-09

### Out of pocket expenditure (OOPE) for hospitalization among below poverty line (BPL) households in District Solan, Himachal Pradesh, India, 2013

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**Background:** Health insurance schemes, such as Rashtriya Swasthya Bima Yojana (RSBY), should be able to provide financial protection against catastrophic health costs by reducing OOPE for hospitalizations.

**Objectives:** To estimate and compare the proportion and extent of OOPE among BPL families benefitted and not benefitted by RSBY during hospitalizations in district Solan, 2013.

**Methods:** We conducted a cross sectional survey among hospitalized BPL families of district Solan, in benefitted and non-benefitted groups. We compared proportion incurring OOPE and its extent during hospitalization, pre/post-hospitalization periods in different domains in the groups.

**Results:** The median OOPE on hospitalizations was INR 1650 in the benefitted group compared to INR 3700 in the non-benefitted group ( $p=0.00$ ). A significantly higher proportion got drugs from the hospital in the benefitted group 55 (59%) compared to 31 (33%) in the other group. The benefitted incurred no

expenditure on in-house drugs compared to 8 (31%) in other group. All respondents in both groups incurred OOPE on procuring drugs and diagnostics from outside the health facility. Chronic conditions contributed 55% in the benefitted group compared to 21% in non-benefitted group. The median OOPE was INR 1612 in public and INR 2270 in private sectors ( $p=0.74$ ). Around forty three respondents had their names in the card, but could not avail the benefit as 15(35%) forgot the card at home.

**Conclusions:** RSBY has decreased the extent of OOPE among the beneficiaries; however OOPE was incurred mainly due to transport or purchase of drugs from outside the health facility. The treatment seeking behaviour in benefitted group has increased among comparatively older group with chronic conditions. RSBY has enabled beneficiaries to get more facilities such as drugs, consumables and diagnostics from the health facility. The extent and proportion of OOPE was similar in private and public sectors. Many respondents failed to get the benefit of RSBY in spite of being enrolled under the scheme.

## ► OP-3-4

ID-21

### Catastrophic health care expenditure among households of Udupi district, South India

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**Background:** The very first millennium development goals is to halve the people living in poverty by 2015, this seems impractical when close to thirty five million people fall below national poverty line each year by making out of pocket payments. Though there have been studies on out of pocket expenditure (OOPE) in India, there is need for disaggregated cost analysis to design effective financial protection mechanisms.

**Objectives:** To explore health care inequities in Udupi across rural and urban areas by using catastrophic health expenditure (CHE) as one of the indicators.

**Methods:** A community based cross sectional survey was done. A mixed method study design was used where in quantitative information was obtained from 616 households through a pretested NSSO 60th round questionnaire and in-depth interviews were conducted

among 11 households. The CHE was calculated by using standard technique.

**Results:** About 46 percent (95%CI=42-50) of the households suffered CHE by spending more than 10 percent of their net consumption expenditure. Households in rural areas suffered greater catastrophic payments. Around 62 percent of the catastrophic payments were attributed to direct health care costs followed by chronic disease drug cost (20%), direct non health care cost (10%) and indirect cost (8%). Only 12 percent of the households were covered under govt. funded insurance schemes. Majority (79%) preferred private care to public had higher odds of these payments. Households that had a member with chronic disease, an elderly member (>60 years), children (<5 years) also had higher odds of incurring these payments.

**Conclusions:** The existing health insurance schemes were ineffective in reducing OOPE thus special benefit packages for households most at risk of incurring CHE should be considered. Strengthening of Public health facility is recommended to increase its utilization rate that can further reduce OOPE and its catastrophic impact.

## ► PP-3-1

ID-30

### Health for all in India: Is insurance the answer?

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**Background:** India with 18 percent of world's population has the unenviable distinction of low public-spending (around 1% of GDP), and a high proportion of out-of-pocket expenditure (OOPE) on health. Health insurance mechanism may act as a pathway for union government's recent proposal of 'universal health assurance scheme' towards achieving the overarching goal of 'health for all'.

**Objectives:** 1. To identify key health insurance mechanisms and their contributions to universal health coverage (UHC), including the proposed 'health assurance for all' scheme. 2. To explore whether 'health assurance for all' in India will result in 'health for all'. 3. To present ideas on what may be the pathways

for achieving 'health for all' rather than just 'health assurance for all'.

**Methods:** We conducted literature search with relevant key words to identify and summarize the findings of articles in English for last 10 years using google, pubmed and medline.

**Results:** Global evidence demonstrated the importance of achieving UHC through insurance combination of financing mechanisms, with public funding forming the major component. Countries that have made progress have embraced the principles of equity and universality in their strategies. Health insurance programs in India are still in their infancy. The proposed 'health assurance for all' through health insurance mechanisms may have high population coverage for limited financial protection for a limited package of services but whether it would be equitable in terms of access to services and costs remains unclear, given the gaps in health care services.

**Conclusion:** For translating 'health assurance for all' into 'health for all' there should be investment in closing the equity gap in economic and social status, and the gaps in health care services. There should also be a system to reduce OOPE, maximize mandatory pre-payment, introduce health cess for better financing, establish large risk pools and cross-subsidization to cover those who cannot afford to contribute.

► PP-3-2

ID-25

## Changing pattern of public health expenditure - a study from the state of Tripura

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Health is a state subject and is dominantly responsible for most health provision. With over 70 percent of the spending on health being out of pocket source, the low level of public spending and its uneven distribution have been a major cause of concern in improving the health status of the poor. National Rural Health Mission launched in 2005, presently known as National Health Mission (NHM) also focuses on augmenting the public health spending.

The study objective is to examine the actual pattern of Government spending on health by Government of Tripura. It is based on the review of the budget

documents of Department of Finance and Department of Health and Family Welfare, Govt. of Tripura and Financial Management Group, Ministry of Health and Family Welfare, GoI, available during 2009-2010 to 2011-12.

The study showed that the absolute value on total public health expenditure (PHE) of the state increased from Rs.327.1914 Cr in 2009-10 to Rs. 432.301 Cr in 2011-12, comprising of state's own treasury, centrally sponsored schemes, NLCPR, NEC and NRHM.

Of the total state PHE the share of the state was around 73 percent, 65.4 percent and 66 percent during 2009-10, 2010-11 and 2011-12 respectively, accounting to around 4 percent of the total expenditure incurred under state budget each year. The maximum expenditure was made on Human Resources, ranging from 45-56 percent each year and only a meagre 2.43 percent, 1.13 percent and 0.25 percent during 2009-10, 2010-11, and 2012-13 respectively was made expenditure on medicine and consumables resulting shortage of essential drugs. During the same period, the states' GDP expenditure on Public health remained almost constant from 2.41 (2009-10) to 2.42 (2011-12).

Based on the findings it can be argued that, to secure better health outcomes, the state of Tripura needs to ensure a considerable increase in its health budget allocation as well as it needs to bring equity in transacting different expenditure on health.

► PP-3-3

ID-35

## The influence of perceived economic condition on self-rated health status of older adults aged 50 years and above in India

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**Background:** Though the actual income level has direct impact on living standard, little is known about the influence of perceived economic well-being on self-rated health status of older adults.

**Objective:** The research is trying to examine the influence of perceived economic condition on self-rated health status among older adults aged fifty years and above in India.

**Methods:** The data from study on Global Ageing and Adult Health (SAGE): wave 1, 2007-2010 on 7150 older adults aged 50 years and above was used. The present study measured the self-rated health status categorised as poor, average, and good. The perceived economic well-being of the elderly was measured from the responses of the question “do you have enough money to meet your needs?” and categorised as completely/ mostly, moderately and little/no enough money to meet needs. Bivariate and multivariate ordinal logistic regression was used in the analysis.

**Results :** The findings showed that about 22.4 percent of the older adults had poor self-rated health, 47.1 percent had moderate self-rated health and 30.5 percent had good self-rated health. The bivariate results showed that poor self-reported health was higher among older adults perceived of having little/no money to meet needs. After controlling for other socio-economic and demographic characteristics of the older adults, the perceived economic condition remain significant. The results found that those perceived of having little or no money [OR=0.213, p=0.000, 95% CI=0.155-0.292] and moderate money [OR= 0.457, p=0.000, 95% CI=0.352-0.595] to meet their needs were less likely to report any higher level of self-rated health compared to those perceived of having completely or mostly money to meet their needs. The predicted probabilities of poor health among completely/mostly money was 0.080 (p=0.000), among moderate money was 0.159 (p=0.000) and among little/no money was 0.289 (p=0.000).

**Conclusion:** The findings revealed that perceived economic condition is positively and strongly associated with the poor self-rated health status among the older adults in India.

## Track-4: Governance and regulation

► OP-4-1

ID-28

### Assessment of Village Health Sanitation and Nutrition Committees (VHSNCs) in Assam

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The National Rural Health Mission (NRHM) was launched to provide accessible, affordable and quality care and which supported decentralized planning up to the grass root level to ensure effective community participation. Therefore, VHSNC was formed at every revenue village level so that the committee can do planning, monitoring & implementation of NRHM activities. However, various reports have highlighted that VHSNCs are uniformly lacking clarity about their mandates. Therefore, an assessment of VHSNCs in Assam was outsourced to Population Research Centre of Guwahati University by Regional Resource Centre for North Eastern States.

**Objectives:** Broad objective of the study was to understand the performance of VHSNCs, in the state and various challenges and mechanisms to address those challenges.

**Methods:** 1. The state was divided into six zones based on geographical location and from each zone, one district was chosen randomly. Around 10 percent of the VHSNCs of each block from every selected district were selected by using SRS technique. Thus, about 750 VHSNCs are covered under the study.

2. From the selected VHSNCs, (i) ASHA, who is the Member Secretary of the VHSNC, (ii) Pregnant women and mothers delivered a baby within one year, (iii) ANM, AWW and PRI members (iv) Persons suffering from malaria and tuberculosis were interviewed to know the role and performance of VHSNCs in the concerned area.

**Results:** 1. Majority of the VHSNCs had their bank account though few VHSNCs never received fund.  
2. Frequency of holding VHSNC meeting was less and

it did not take place in a fixed date and time.

3. Participation of some VHSNC members during Village Health & Nutrition Day was poor. 4. VHSNC members did not have role clarity. Fund flow to the VHSNCs was irregular. 5. Record maintenance of the VHSNCs needed improvement. 6. VHSNCs are hardly engaged in discussing village health issues and planning village health plans.

► OP-4-2

ID-26

### Family planning performance –its correlation with fund utilization in North Eastern Region

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Family planning programme was launched in India in 1951 with the main objective of attainment of population control. Subsequently, it evolved into the family welfare programme, which currently provides maternal, child health and family planning services. With the launch of NRHM in 2005, now known as National Health Mission, a huge workforce has been engaged including social activist (ASHA).

The objective of the study is to examine the performance of family planning (FP) activities in the North Eastern Region (NER) in line with budgetary allocation and expenditure pattern under NHM. The study is based on the analysis of available secondary data of DLHS, HMIS and FMG of MoHFW.

The DLHS 4 showed that, current use of family planning methods had declined in all states of NER except in Assam and Tripura where there was a marginal increase when compared to DLHS-3 family planning method use. It also showed there is an unmet need in Arunachal Pradesh, Meghalaya, Mizoram and Sikkim ranging from 20-55.5. Further, HMIS also showed a decrease in overall sterilization performance in almost all the NE states from 2009-10 to 2013-14.

As FP is centrally sponsored programme, presently, the budgetary allocation is made under NHM. The analysis showed that the fund allocation during 2009-10 to 2011-12 showed a marginal increase in NE states from 21.65 Cr. to 22.44 Cr, but the unspent amount was very high in the state like Arunachal Pradesh, Meghalaya,

Manipur and Sikkim. The overall expenditure was only 60.3 percent during these three years.

From the study it can be inferred that the performance of the FP activities is not due to lack of fund; rather, due to lack of operational issues in the state. The programme needs more political commitment and operational expertise to improve its overall performance.

► OP-4-3

ID-127

### Tribal health and Millennium Development Goals: an empirical study of service provision and delivery at Dhalai district of Tripura, India

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**Background:** Millennium Development Goals (MDG) emphasise on reducing the maternal and infant mortality rates to all section of people. Tribal health is a part of it, which gives priority under NRHM since 2005. In Tripura, a north eastern state of India, NRHM is implemented since 2005 and a reasonable improvement in service provision and delivery system can be observed during the last decade. Population of this state is mixed, where tribal is 1/3 and it's important to reach the health service to all sections of the people in an equitable manner. This paper is an attempt to find whether there is any disparity of health service and delivery system among tribal and non-tribal population, and if so, the reasons thereof.

**Objectives:** 1.To assess the provision of service delivery system of maternal and child health in tribal and non tribal areas.

2. To find Out of Pocket Expenditure disparity among tribal and non-tribal pregnant women.3.To suggest measures for improved and more equitable service delivery mechanism.

**Methods:** Present study is based on both primary and secondary data collected from health facility, pregnant mother, service provider and community volunteer. Purposive sampling method is followed and case studies were conducted through group discussion and exit interview.

**Main findings:** The study reveals that the health service delivery developed faster in non-tribal

concentrated areas compared to tribal concentrated areas. The existing infrastructure and services were also less utilised by tribal population compared to their non-tribal counterparts due to lack of awareness and socio-cultural compulsions.

**Conclusion:** Study mainly suggest in the area of management structure, promotion of micro private provider and involvement of SHGs at local level for assured health service delivery, utilization of information technology, continuous skill development and implementation of incentive - penalty mechanism.

► PP-4-1

ID-48

### Association between sleeplessness and hypertension among Police Officers in Thiruvananthapuram district

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**Background:** In India, about 40.6percent males and 38.5percent females are suffering from hypertension. While in Kerala, this comes to be about 30.7percent and 31.9percent respectively. No study has been conducted recently to explore the association between sleeplessness and hypertension. The police force in Thiruvananthapuram was chosen as the study population, considering the fact that the officers in the force are subjected to long hours of duty.

**Objectives:** The objective was to study whether there is any relationship between decreased sleep duration and hypertension (BP>140/90 mm of Hg) among the police officers in Trivandrum.

**Methods:** A cross-sectional study by questionnaire based interview method was conducted among the police officers of Cantonment police station and Kerala police headquarters during the months of October-December 2013. The total number of subjects studied was 113 and their BP readings were recorded.

**Results:** In the study population, prevalence of hypertension was 49percent. There was a difference in mean systolic and diastolic BPs of those who slept <7 hrs and those who slept >7 hrs (p value= 0.03[SBP], 0.055[DBP]). 58.5percent of the sample had interrupted sleep (p value=0.008). There is also statistically

significant relation between age, BMI, cigarettes per day and systolic & diastolic BP. Alcoholism, regular exercise, stress and family history were found to be insignificant.

**Conclusion:** There was a statistically significant relation between sleep duration and systolic BP. Hypertension was found to be related to interrupted sleep. This relation was found to be statistically significant.

► PP-4-2

ID-88

### Prevalence of tobacco consumption and its contributing factor among students of a private medical college, Belgaum- a cross-sectional study

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**Background:** Tobacco consumption epidemic is one of the biggest public health threats that the world is facing which drags the attention of researchers to identify the cause for the same in specific group. Medicos act as mentors to fight against the tobacco use but several reports suggest that a good number of medicos are themselves addicted to tobacco use.

**Objective:** To determine the prevalence of tobacco consumption among undergraduate medical students.

**Methods:** A cross sectional study was done among undergraduate medical students from first to fourth year. A sample of 372 subjects was selected using simple random sampling method. The study was carried out in between Feb 2014 to Oct 2014. Pre-designed, pre-tested, structured, self administered questionnaire was used. Statistical analysis was done using SPSS software version 20. Data was analysed for percentage and Chi-Square test to find association between tobacco use and socio demographic features.

**Results:** Out of 372 study population 101 (27.15%) were 'ever tobacco consumers'. Ninety (24.2%) of them were current users, among which, 84 (22.9%) were males while 6 (1.3%) were females, 11 (2.95%) were quitters. Eighteen (32.22%) were using smokeless tobacco while 76 (84.44%) were taking it in the form of smoking. With increase in age, tobacco consumption increased (p<0.05). About 77.8percent users were

staying in hostel. In 45.6percent users family history of tobacco consumption existed. Most common reason for starting tobacco consumption was for relief of tension (83.16%) followed by peer pressure (59.40%).

**Conclusion:** Twenty four percent of medical students were current tobacco users. It was found more prevalent among males rather than females. Relief of stress and peer influence were the main reason for starting tobacco consumption. Hostellers were more addicted as compared to day scholars.

► PP-4-4

ID-123

### Prevalence of sleep disorders among heavy vehicle drivers in Trivandrum city – A pilot study

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**Background:** The international classification of sleep disorders lists more than 80 different sleep disorders. Undiagnosed sleep disorders are associated with increased prevalence of hypertension, cardiovascular disease, stroke, daytime sleepiness, and motor vehicle accidents. Most of the sleep disorders are both undiagnosed and under treated; which may deteriorate quality of life. Currently there are only few published data regarding the prevalence of sleep disorders among heavy vehicle drivers in India.

**Objective:** To assess the sleep patterns and sleep-related disorders among heavy vehicle drivers in Trivandrum city.

**Methods:** A total of 126 heavy vehicle drivers of Trivandrum city were randomly selected. The data were obtained through a validated sleep questionnaire designed by the Comprehensive centre for sleep disorders, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum. The questionnaire consists of 112 easy to understand questions for the identification of sleep patterns and possible sleep related complaints, as well as mental health, habits of smoking and alcohol consumption level. The answers to these questions were grouped and were correlated with the symptoms of various sleep disorders like periodic limb movement syndrome, restless leg syndrome, parasomnia, sleep disordered

breathing etc. Excessive day time sleepiness was assessed through Epworth sleep scale (ESS); ESS score>10 is considered as significant.

**Results:** Total of 126 male drivers was interviewed with a mean age of 40 years. Sixty percent of the subjects presented at least one sleep-related complaint and 9.5percent admitted to have dozed at the wheel while on duty. Fifty four (42.86%) had showed overweight; body mass index >25. Sleep disturbance complaints reported were; excessive day time sleepiness ( 25.4%); respiratory disturbances (7.9%), snoring (44.44%) and accidents (3.2%). Fourteen drivers (11.11%) have some sort of significant level of depression and 62 (49.2%) drivers were taking alcohol and 40 (31.75%) subjects are smokers.

**Conclusion:** Substantial numbers of drivers have excessive day time sleepiness and they are unaware of the consequences. Inappropriate work schedule of drivers impose sleepiness when driving. Health education and media hype are immediately needed to increase awareness of sleep disorders among the drivers in order to improve road safety.

### Track-5: Service provision and delivery

► OP-5-1

ID-13

#### Utilization of Government health services: a comparative study of 29 states in India

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**Background:** One of the important concerns being raised in the domain of public health in the India is the high Out of Pocket (OOP) expenditure. An important reason behind this is higher utilisation of private healthcare services. Therefore if we want to bring down the OOP expenditure, it is crucial to ensure that more and more people utilise the public health facilities. However for this to happen, the reasons behind why people don't prefer public facilities need to be found out so that inadequacies can be identified and gaps in services provision be filled in. The motivation behind this study is to identify the reasons behind the non-utilisation of government health services.

**Objectives:** The objectives of this study are twofold. The first objective is to identify the proportion of people using government and private health facilities. The second objective is to ascertain the reasons behind individuals not using government health services in each of 29 states under study.

**Methods:** The study has been conducted for 29 states in India. The data has been taken from the latest round of National Family Health Service i.e. NFHS-3. The factors which affect the usage of public health facilities that have been considered in this study include proximity to the population, convenience of facility timing, availability of health personnel, waiting time, quality of care, payment required and provision of medicines. Descriptive statistics has been used for analysis of data.

**Results:** Out of the 29 states, only in 11 states i.e. JandK, Himachal Pradesh, Rajasthan, Sikkim, Arunachal Pradesh, Manipur, Mizoram, Tripura, Meghalaya, Assam and Orissa does more than 50percent of the population use Government healthcare facility while in the rest 18 states, majority of the population use private healthcare facility. Also, in states like Punjab, Uttar Pradesh and Bihar, the proportion of people utilising public healthcare is abysmally low i.e. even less than 20 percent. Among the factors affecting the usage of public health facility, payment required and provision of medicines were not found to be important for all the 29 states while the other five factors were found to be important.

**Conclusion:**To ensure that more and more people make use of public health facilities, issues of proximity, facility timing, availability of health personnel, waiting time and quality of care need to be addressed.

► OP-5-2

ID-17

## Evaluating public private partnership in tea garden hospitals for strengthening health service delivery in tea gardens, Assam

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**Background:** The tea industry supports about 1/5th of Assam's 31 million inhabitants, but sadly are the vulnerable population with poor health and nutritional status, and contributing high proportion of mortality and morbidity. Of these, about half are casual workers. As per the Plantation Labor Act of 1951, management of tea garden requires providing primary health services for its workers and their families. The absence of adequate infrastructure and manpower in tea garden hospitals enhances the problem, as these services are limited to permanent and not to casual workers. In the year 2007, the Government of Assam (GoA) under National Health Mission partnered with 150 tea garden hospitals to improve infrastructure, manpower and service delivery.

**Objectives:** The aim of the study was to understand effectiveness of health services provided to tea garden community by the hospitals under public private partnership (PPP) with following objectives: 1. To review management (including infrastructure, manpower, diagnostic, equipment) of tea gardens under PPP. 2. To understand health service delivery. 3. To provide remedial measures to GoA for strengthening services delivery.

**Methods:** This was a cross-sectional study covering 150 tea garden hospitals under PPP. Observational checklist was used to assess these hospitals.

**Results:** Of the 150 hospitals, functional labour room with equipments was available in 135 and new born care corner in 119 hospitals. Doctors were available in 126, GNM in 81, ANM in 124, Pharmacist in 136 and Laboratory technician in 61 hospitals. There was no critical manpower in 6 hospitals. The hospitals were providing regular OPD, ANC, normal delivery services, immunization. Family planning services along with implementation of RNTCP, NVBDCP were poor. Basic

laboratory services were available in 50percent hospitals. Average fund utilisation was 77percent. Monitoring from districts and state were poor.

**Conclusions:** Optimal utilization of infrastructure with full time engagement of staff, and their training to enhance skills, to improve service delivery. Review of MoU ensuring adherence to the conditionalities and regular monitoring and review.

▶ OP-5-3

ID-29

### Does perceived Quality-of-Care affects the choice of health institution for childbirth in Chandigarh?

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**Background:** In India institutional delivery rate has increased especially in the public sector. It is important that the quality of care is not compromised. Hence, this study aimed at finding out the differences in the perceived quality of care among women delivered in public and private health institution.

**Methods:** A cross sectional study was conducted, using a pre-tested interview schedule, among a systematic random sample [RK1] of women who had recently delivered(150 in public and 150 in private institutions) in selected areas of Chandigarh city. In-depth interviews were conducted with women to develop the interview schedule. Chi square test was used to find association of institutional variables relevant for quality of care with the place of delivery (public versus private). The quality of care score was computed by assigning a score to each variable. Logistic regression was also used to find “independent” effect of the explanatory variables.

**Results:** Most women (91%) choose public institution for delivery in Chandigarh. Physical infrastructure and quality of care were perceived to be better in private institutions than public institutions. The experiences of women shared during the in-depth interviews revealed that they appreciated the parent-like-care in some of the private institutions. They feel that doctors in public institutions talked to them calmly, however, other staff behaved rudely with them. However, most women who used public institutions were happy with the care that they had received in the public institutions.

**Conclusions:** Public sector health institutions are a major source of maternity care in Chandigarh. Infrastructure needs to be augmented in public sector institutions in accordance with the increased number of deliveries. In public institutions care providers especially the lower grade staff should be trained in dealing with clients politely and patiently.

▶ OP-5-4

ID-79

### ARSH service provision in public health facilities in India – an assessment and an alternate framework to enhance access

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**Background:** Adolescents are recognized as a key segment in India. The Government of India, under Reproductive and Child Health (RCH II) program (2005) integrated Adolescent Reproductive and Sexual Health (ARSH) as key strategy and it is now part of recently launched RashtriyaKishorSwasthyaKaryakram (RKSK). However, ARSH strategy of 2005 appears to be in force, evident from the fact that this is still indicated as strategy for adolescent health under National Health Mission. This paper outlines the assessment of this strategy undertaken in 2011-12.

**Objectives:** This paper, seeks to assess if the ARSH, an important component of RCH Strategy to provide services for the adolescents, has realized its objectives; if not, the reasons thereof and suggest measures for addressing it.

**Methods:** The study done in 7 states; used qualitative methods – interviews with providers, observations, and Focus Group Discussions with adolescents. A National Consultation organized in 2012 helped to gather further evidence and share initial results.

**Results:** ARSH program, patchy in its implementation, with almost exclusive focus on clinics, has not addressed health needs of adolescents, in any significant manner. Services considered culturally appropriate; namely, menstrual health and anemia are emphasized. Information and commodity needs are rarely met. Unmarried adolescents face significant barriers in accessing services; needs of adolescent boys are completely ignored.Coordination across departments

rarely occurs. Peer based approaches, adopted in few states do not appear to make any impact.

**Conclusion:** The ARSH strategy needs a complete recast. It appears useful to break ARSH service provision into key components - information, counseling, commodities and clinical services. This disaggregation of components and seeding specific strategies across departments, and innovative ways of reaching information and commodities to adolescents may yield results. A framework based on this approach has been developed.

► OP-5-5

ID-31

### Assessment of implementation status of Janani-Shishu Suraksha Karyakram (JSSK) in reference to free referral transport services at selected government health facilities in Wardha district, Maharashtra

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**Background:** In India about 67,000 women die every year due to pregnancy related complications resulting in maternal and infant mortality. Important factors affecting access include high expenses on transport to take pregnant women from home to the facility, to higher facility in case of further referral, back from the health institution to home, JSSK has been launched on June 1, 2011 huge leap forward in the quest to make Health for All a reality and ensure that pregnant woman and sick neonates up to 1 year gets timely access to health care services free of cost.

**Objective:** To find out availability and utilization of referral transport services to pregnant women and sick newborns at selected government health facilities.

**Methods:** Community and facility based observational cross-sectional study.

Two PHCs, one with best & other least performing for JSSK services based on DHO reports in Deoli and Wardha blocks of Wardha district were the study settings. Multi-stage simple random was used. Sample size 120 beneficiaries (mothers) having children < 6

months age delivered between Sept 2012 to Feb 2013 and JSSK service providers at selected government health facilities. Data were collected using modified pre-tested questionnaire (JSSK Guidelines) face-to-face interview techniques. Secondary data collected from the available reports and records.

**Results:** About 28 percent pregnant women availed free referral transport services from home to health institutions where as no sick newborns availed these services; 19.24 percent pregnant women and 50 percent sick newborns availed free referral transport services from transfer to higher level facility for complications; 65.83 percent pregnant women and no sick newborns availed free referral transport services to drop back home.

**Conclusion:** Awareness & utilization of free referral transport services were not to the fullest extent. Gaps were found between the reported figures by health professionals and actual responses of study participants. Awareness at the community level should be enhanced.

► PP-5-1

ID-23

### Reaching the unreached- An innovation called 'Boat Clinic'

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**Background:** As we approach 2015, the year of MDGs set deadline, there are many places in Assam where delivering primary health care services yet remains a far cry. This is particularly true for the people residing in the riverine islands of the Brahmaputra. NRHM, Assam in collaboration with Centre for North East Studies (C-NES) started a noble initiative of boat clinic to provide health care amenities to these underserved island communities of the State since February 2008. RRC-NES conducted an evaluation of the services provided by the boat clinics in Assam through its 15 units in 13 districts to assess performance of the initiative against the targeted outcomes.

**Objectives:** To assess the functionality of the boat clinics in terms of 1. Availability and functionality of boats, equipments, diagnostics and drugs. 2. Availability, composition and training status of human resources. 3. Assessing the operational plan of boat clinics and their service provision.

**Methods:** Cross sectional descriptive study was done using semi structured interview schedule and observation checklist to collect data from all the 15 units. The study has been conducted during June to September 2013.

**Results:** Functional statuses of the boats were good except for Dhemaji, Dibrugarh and Dhubri Districts which needed repair. The equipments like microscope, semi-autoanalyser, centrifuge and autoclave though functional in all the units were hardly used. Commonly done diagnostics includes Haemoglobin estimation, RBS, Urine sugar and albumin, pregnancy tests, blood smears and RDK for malaria, VDRL and HIV testing and counselling.

The drugs in the units were supplied through NRHM boat clinics and MMU drug kits from the District Drug Store and were mostly in short supply.

Manpower availability was almost as per recommendation except for MO-II and GNM which was 53percent each. Training on Routine Immunization and Neonatal Resuscitation was given to all the MOs and Nursing staffs.

Around 83.15percent of the scheduled camps could be held by all the units during the FY 2012-13. Each unit catered to an average population of 20,963. Considering the innovative model of health care delivery, the functionality of the boat clinics may be strengthened by having uniform targets, proper fleet maintenance, increasing the range and coverage of the services, training all levels of cadres and timely monitoring of their activities.

▶ PP-5-2

ID-32

### Barriers to service user and caregiver involvement in the mental health system in India

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**Background:** The quality and appropriateness of mental health care can be improved by involving Service Users (SU)/ Care Givers (CGs) in the mental health system. Participatory policy-making and planning is of particular importance in the field of mental health, although less researched in India and hence little is known in this area.

**Objectives:** This paper aims at probing potential barriers to service user and caregiver involvement in the mental health system and attempts construct strategies for overcoming barriers.

1. To identify existing and potential barriers to service user and caregiver involvement in the Indian mental health system
2. To explore potential strategies for greater service user and caregiver involvement in the Indian mental health system.

**Methods:** A qualitative study was done among 27 subjects who were users of mental health services, members of organizations representing SU/ CGs using semi-structured interviews. The data was analyzed using thematic analysis with assistance of the qualitative software package NVIVO.

**Results:** In mental health system, service user and caregiver involvement is almost non-existent due to barriers such as basic lack of services, service providers' attitude and stigma towards service users, treatment and provider centric health system and self stigma among mentally ill. Amending mental health system to 'holistic approach' and multi system caregiver led strategies are needed to be implemented for greater service user involvement. There is a need to change the system from 'provider centric' to 'user centric' for strengthening the mental health system in India.

▶ PP-5-3

ID-39

### Prevalence and factors associated with non adherence to medication among diabetics in a rural population in Kozhikode

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**Background:** Non adherence to chronic medication is a worldwide problem of striking magnitude. WHO estimated that 3.4 million deaths occurred due to diabetic complications in 2004. More than 80percent of diabetes deaths occur in low and middle income countries. As prevalence of diabetes is increasing in Kerala even in rural areas this study becomes all the more important.

**Objectives:** To assess the prevalence of non adherence to medication among diabetics in a rural population in Kozhikode and study various associated factors.

**Methods:** A descriptive cross-sectional study of randomly selected diabetic subjects taken from NCD Registry in Medical College Health, Unit Cherooppa (field practice area under Govt Medical College Kozhikode) was carried out from June 2013 to May 2014. Non adherence was estimated using modified Morisky questionnaire. Pretested semi structured schedule was used to study various associated factors by interview method. The patient factors, disease/therapy factors, health system factors, socio-economic factors were studied. Last recorded RBS and BP values were noted down.

**Results:** A total of 300 patients from 5 sub centre areas were studied. The prevalence of non adherence to diabetic medication was found to be 58.7percent. Non adherence was higher in those >50 years of age, disease duration >5 years, lower levels of education and socioeconomic status, on treatment for other chronic diseases. Insulin therapy, thrice daily dosing, decreased diabetes knowledge and rapport with doctor, increased cost of treatment, lack of positive attitude and family support all were found to be significantly associated with non adherence. Mean RBS was found to be higher in non adherent group.

**Conclusion:** Non adherence was found to be higher in study population. Specific interventions are needed at patient level, health system level and community level to increase awareness and improve adherence.

▶ PP-5-4

ID-78

## Perception of Nutrition and Health Education services provided under ICDS in urban areas of Belgaum

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**Background:** Integrated Child Development Services was introduced with the aim of improving the nutritional and health status of children in the age group of 0-6 years and enhancing the capabilities of mother to look after the health and nutritional needs of the child. Nutritional and Health Education (NHE) activities are

intended to change behaviour of community in general and specifically of the mothers.

**Objectives:** To assess the perception and utilisation about Nutrition and Health Education services provided under ICDS in urban areas of Belgaum.

**Methods:** A cross-sectional community based study was conducted during January to December 2013 among beneficiaries of Anganwadis in Urban Areas of Belgaum. There were 912 participants who included mothers of children aged less than 6 years, pregnant and lactating women, adolescent girls and non-pregnant non-lactating women enrolled at the anganwadi centres. A predesigned questionnaire was used to collect data regarding perception and utilisation of Nutrition and Health Education services that was provided through the Anganwadi centres.

**Results:** Of the 912 respondents, 585 (64.14%) had attended at least one session of NHE. The most common reason given for not attending the sessions was the unsuitable timing (15.79%). The topics commonly discussed were family planning, balanced diet and hygiene and sanitation. Just over half the respondents said that the NHE activity resulted in some change in their practices.

**Conclusions:** Overall there is a room for improvement in the implementation of nutrition and health education activities provided under ICDS.

▶ PP-5-5

ID-74

## National Rural Health Mission for achieving MDG Goal-5: Trend in full Antenatal Care and institutional delivery coverage in Bihar and Kerala

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**Background:** Promotion of full Antenatal Care (ANC) and institutional delivery are key public health interventions to reduce Maternal Mortality Ratio (MMR) and to achieve Millennium Development Goal (MDG)-5. National Rural Health Mission (NRHM-2005) was designed to help states to achieve MDG targets in reducing MMR per lakh live births 437 in 1990 to 109 in 2015.1 Following NRHM, states were supported with

human and financial resources to contribute towards achieving MDGs, however with differential focus on states.

**Objectives:** To assess and compare trend in full antenatal care and institutional delivery between Bihar and Kerala following NRHM implementation.

**Methods:** Full antenatal care (at least three visits of antenatal check-up, one tetanus toxoid injection and 100 IFA tablets or adequate amount of Iron syrup) and institutional delivery rate which were frequently used in various surveys and studies were analysed for Bihar and Kerala.

**Results:** Analysis suggests decrease in full ANC coverage between NFHS I and III both in Bihar (33.3% to 13.3%) and Kerala (92.6% to 85.6%) with higher rate of decline in Bihar than Kerala. As per DLHS II(2002-

04) and III(2007-08) increasing trend was observed (Bihar: 4.3%-4.6%; Kerala: 69.5%-72.3%). Studies and surveys following NRHM suggest mixed results both for Bihar (29.6%-58.9%) and Kerala (77.9%- 94.7%).

Considering NFHSI and III increase in institutional delivery rate was found both in Bihar (12.1% to 14.8%) and Kerala (88.9% to 92.9%). Similar trend was also seen during DLHS-II and III in both states however with increased estimates than NFHS. Studies and survey indicated higher estimates in both states (Bihar:15%-48.3%; Kerala: 88.9%-99.9%).

**Conclusion:** Following NRHM both high and non-high focus states had shown improvement in antenatal care as well as institutional delivery with higher rate of improvement in Bihar. However, disparities in states are alarming which needs to be curtailed.

